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BLIC DAY SPECIAL

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FIFTY YEARS OF INDEPENDENCE

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Editorial

Time To Remember And Reflect

SOON we will be celebrating the fiftieth anniversary of our Independence. It is a historic, auspicious occasion of great joy and pride for we Indians. It is also time to remember all those who had laid down their lives for making the freedom, our cherished dream, a reality and also the countless others who had in their own ways sustained the freedom movement by waging a relentless battle against the foreign rulers. Then there were innumerable silent sufferers too, particularly the families of the freedom fighters, who had faced untold miseries and hardships during the long struggle for freedom. The grateful nation must pay its homage to all of them.

No doubt winning the freedom was a monumental achievement, but preserving it successfully is of equal importance. India has been doing just that during the last fifty years. Our national leaders had shown great wisdom and foresight while setting the agenda for free India with focus on the needs of the common man. Gandhiji gave top priority to the elimination of hunger and poverty through Gram Swaraj. Jawaharlal Nehru had the vision of a strong and prosperous India marching ahead with the help of science and technology. Dr. B.R. Ambedkar was keen to ensure uplift of the depressed classes. The national leaders of all shades of opinion made significant contributions to the great task of nation building.

Tremendous progress has been made in all spheres since then. There is hardly any area which has remained untouched by strong waves of development sweeping throughout the country. Agriculture continued to occupy the pride of place in the economy of free India. The spectre of famines which had frequently haunted pre-independent India became a bad dream of the past as the fruits of the green revolution brought about a big change in the agricultural scenario. Today we are self-sufficient in the production of foodgrains. A strong network of the Public Distribution System ensured that foodgrains would be available to all, particularly the weaker sections of society.

Today our Armed Forces are strong enough to defend the motherland and repel any aggression against it. The Indian soldier has always been admired for his mettle and valour and with the acquisition of the latest armament all the three wings of the Armed Forces have become formidable.

Though understandably we paid special attention to the universalisation of the elementary education, there has been phenomenal expansion in the field of higher education including technical and medical education. We have also developed a very strong base for science and technology and sustained efforts are continuously being made to keep the country abreast with the latest developments in this field. Through improved medical care, we have been able to double the average life expectancy since Independence. We are, however, still waging a relentless battle against ill-health and disease.

We have achieved substantial self-reliance in basic and capital goods industries in addition to effecting considerable diversification of the industrial base. The recently launched economic liberalisation programme is designed to give a boost not only to our overall economy through structural reforms but also to make India a global player. In the field of transport too, we have done reasonably well. We have the world's largest and fairly efficient railway system.

We are a major film producing country and our films are in great demand in several countries, particularly in West Asia and Africa. Nowhere else films are made in so many languages and dialects. In the field of sports, we have produced many outstanding sportspersons in the post-Independence era.

We can also take pride in the inherent strength of our democracy. While our several neighbours and a number of other developing countries, which had become independent around the same period as we, have been either under the dictatorship or military rule, our democracy functioned smoothly and effectively. Our contribution towards world peace is by no means insignificant. Through our policy of non-alignment, we were instrumental in lessening the tension created by the cold war.

But we have still miles to go. Many problems are yet to be tackled. We have to further control our fast rising population, which has nullified most of our achievements. Poverty alleviation continues to be a big challenge for us. What our national leaders had dreamt of at the dawn of freedom about our country, we have to make that a reality by making the country strong and prosperous. And that will be a true homage to the brave freedom fighters who had shed their blood to make India free. ❐

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Mahadev Pakrasi

Assistant Editor
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Indian Agriculture: Looking Back And Forward

Dr. M.S. Swaminathan

Freedom from hunger was Gandhiji's priority number one for Independent India. To attain this objective, what we need now is an environmentally sustainable and socially equitable green revolution in our agriculture as it provides livelihood to 70 per cent population of the country.

JUST prior to our Independence, undivided India witnessed one of the most serious famines of this century—the great Bengal famine. Gandhiji speaking in Noakhali in 1946 said, "to the hungry God is bread" and "it is the duty of Independent India to ensure that every individual is enabled to earn his or her daily bread". Gandhiji's emphasis was on "food for all with human dignity". He did not want a nation of beggars or the entitlement to food being considered a charity. Thus, he asked us to desist from adopting a patronage approach towards the poor and hungry. Our first Prime Minister, Jawaharlal Nehru, responded to this call and announced in 1948 "everything else can wait but not agriculture".

We are now in the 50th year of our Independence. According to official statistics, about 200 million children, women and men will go to bed undernourished tonight. We have however successfully avoided famines during the last 50 years through a multipronged strategy consisting of (a) increased food production, (b) building grain reserves, (c) operating an extensive public distribution system, (d) protective social security measures like food for work, nutritious noon meal and employment guarantee, and (e) land reform and asset creation measures. The continued persistence of endemic hunger is now largely the result of inadequate purchasing power arising from inadequate opportunities for skilled employment.

Famines were frequent towards the last part of the 19th century, when the combined population of India, Bangladesh and Pakistan was only 290 million. Our population alone is now more than thrice this number. Hence, we have every reason to be grateful for the spectacular success of the Government of India's famine avoidance and containment strategy. The time is now ripe to take the final steps essential for the total elimination of hunger. Hunger elimination is easier to achieve than poverty eradication. The poor spend a large share of their daily income on food and hence the elimination of hunger is the first step towards the alleviation of poverty. The opportunity for a productive and healthy life for every individual depends very much on the success of our hunger elimination strategy.

Global Action For Sustainable Food Security

The commitment of the international community to ensure food and nutrition security to every child, woman and man on our planet has been reiterated at several international conferences held during this decade. Some of them are:

1990	World Summit for Children, New York
1992	International Conference on Nutrition (ICN, 1992), Rome
1992	UN Conference on Environment & Development (UNCED, 1992), Rio de Janeiro
1993	World Conference on Human Rights (WCHR, 1993), Vienna
1994	International Conference on Population & Development, Cairo
1995	UN Conference on Social Development, Copenhangen
1995	Fourth World Conference on Women, Beijing
1996	World Food Summit, Rome

Despite such high level political reaffirmation of the need to achieve speedily the goal of "Food for All", over 800 million human beings now suffer from hunger and malnutrition. Hidden hunger, arising from the deficiency of the essential micronutrients is widespread. Endemic hunger is now more due to the lack of adequate income at the household level than due to the lack of food in the market. Both poverty as

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well as non-food factors such as environmental hygiene, sanitation and lack of safe drinking water are becoming major contributors of food insecurity at the level of communities and individuals. A majority of the food insecure live in Asia.

There is also increasing concern about the earth's capacity to produce adequate food for the growing population. The increase in human population, now mostly confined to the developing countries, coupled with enhanced purchasing power leading to greater capability to buy food and increasing urbanisation will lead to a higher growth rate in demand for food as well as more diversified food products in the coming millennium. Thus, on the one hand, there will be need for intensification and diversification of agriculture, particularly in the developing countries, on the other, the ecological foundations essential for sustainable advances in crop and animal productivity are getting eroded. This situation has led to the ringing of alarm bells by experts concerning the earth's capacity to produce adequate food to meet growing needs. Lester Brown has concluded; "Constraints imposed by the earth's natural systems, the environmental degradation of land and water resources and the diminishing backlog of yield-raising agricultural technologies are slowing the growth in world food production, raising questions about the earth's population carrying capacity. The earth's capacity to produce enough food to satisfy expanding demand is now emerging as the overriding environmental issue as the world approaches the 21st Century".

The year 1998 will mark the bicentenary of Malthus's essay on population. The onward march of science and technology, supported by

It is, however, becoming increasingly clear that without concerted national and global action to arrest environmental degradation, promote economic and gender equity and check population growth, the Malthusian spectre may still come true in the next century.

appropriate public policies, has so far helped humankind to keep Malthusian forebodings on the population-food supply equation at bay. It is, however, becoming increasingly clear that without concerted national and global action to arrest environmental degradation, promote economic and gender equity and check population growth, the Malthusian spectre may still come true in the next century. The Food and Agriculture Organisation of the United Nations (FAO) therefore, organised a World Food Summit in Rome from November 13 to 17, 1996.

At this Summit, a Rome Declaration on World Food Security and a World Food Summit Plan of Action were adopted.

The Declaration makes a commitment to reduce the number of undernourished people to half their present level no later than 2015. It also states:

"We will pursue participatory and sustainable food, agriculture, fisheries, forestry and rural development policies and practices in high and low potential areas which are essential to adequate and reliable food supplies".

"We will strive to ensure that food, agricultural trade and overall trade policies are conducive to fostering food security for all through a fair and market-oriented world trade system".

The Plan of Action includes the following seven commitments:

1. Create an enabling political, social and economic environment designed to create the best conditions for the eradication of poverty, and for durable peace.
2. Implement policies aimed at eradicating poverty and inequality and improving physical and economic access to sufficient, nutritionally adequate and safe food and its effective utilization.
3. Pursue participatory and sustainable food, agriculture, fisheries, forestry and rural development policies and practices in high and low potential areas.
4. Ensure that food, agricultural trade and overall trade policies are conducive to fostering food security for all.
5. Prevent and be prepared for national disasters and man-made emergencies.
6. Promote optimal allocation and use of public and private investments to foster human resources, sustainable food, agriculture, fisheries and forestry systems, and rural development, in high and low potential areas.
7. Implement, monitor and follow-up the Rome Plan of Action at all levels in cooperation with the international community.

The above plan of action integrates the principles of (a) conservation of the ecological foundations essential for sustainable advances in agricultural productivity and production, (b) sustainable production through ecotechnologies and (c) equity in access to food through an appropriate blend of national and international action in the area of entitlements and employment. The Science Academies Summit held in Madras in July, 96,

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recommended that all nations may provide an overall public policy support to action at these three levels through the enactment of a National Food and Livelihood Security Act designed to achieve the following objectives:

- That every individual has the physical, economic, social and environmental access to balanced diet that includes the necessary macro-and micronutrients, safe drinking water, sanitation, environmental hygiene, primary health care and education so as to lead a healthy and productive life.
- That food originates from efficient and environmentally benign production technologies that conserve and enhance the natural resource base of crops, animal husbandry, forestry, inland and marine fisheries.

Food Consumption and Nutrition Status

Against the per capita net availability of 501.9 gms of cereals the estimated consumption of cereals was of the order of 394 gms i.e. 78.6 per cent of the net availability. Similarly in the case of pulses, per capita consumption was 28.05 gms. i.e. 75.8 per cent of net availability. Inequality in the consumption of foods among different income groups gets masked in the overall consumption estimates. Among the poor, nearly 80 per cent of consumption expenditure goes for food items. Recent surveys indicate:

i. Per capita cereal consumption has declined over the years resulting in the aggregate energy intake of 1859 k.cal per capita as against 2200 k.cal recommended.

ii. 47.7 per cent of households have calorie inadequacy and 19.8 per cent of households have protein inadequacy. 19.5 per cent of households have both calorie and protein inadequacy.

iii. The extent of moderate and severe growth retardation in preschool children varied from 34 per cent in Kerala to 72 per cent in Gujarat.

iv. 47 per cent of adults have body mass index value below 18.5 indicating large scale prevalance of chronic energy deficiency in the community.

v. Haemoglobin levels among pregnant mothers reveal that as many as 87.5 per cent of mothers were anaemic.

vi. About 30 per cent of infants born had low birth weight.

vii. 167 million people are considered to be at risk for iodine deficiency disorders and 54 million have goitre.

viii. Preventable blindness due to Vitamin A deficiency is still large.

Table 1

Production of Different Foods During 1994-95

Sl. No.	Commodity	Production in million tonnes	Percapita production gms/per day
1.	Rice	81.10	243.97
2.	Wheat	65.50	197.04
3.	Coarse Grains	30.40	91.45
4.	Pulses	14.10	42.42
	Total Food Grains	191.10	574.88
5.	Oilseeds	21.40	64.30
6.	Milk	65.80	197.26
7.	Fruits	33.00	99.18
8.	Vegetables	71.00	213.50
9.	Eggs (Millions)	247.53	0.07
10.	Meat	4.20	12.63
11.	Fish	4.80	14.44
12.	Vegetable oils	6.83	20.55
13.	Sugar	14.60	43.92

Source: Economic Survey 1995-96 and Agricultural Statistics Compendium Vol. 1 1996.

Long March Towards Elimination of Hunger

Looking back the distance travelled and counting on various milestones towards food security, the country can be proud of some of the achievements so far. Yet the final milestone looks to be a long march. Shrinking arable land resources, soil degradation and depletion of nutrients from the soil, poor water management and unsustainable use of groundwater, loss of momentum in the growth of food output, inefficient biological utilisation of the nutrients consumed due to poor environment and growing population are some of the problems the country faces in the march towards the final milestone of a hunger-free nation. The over-exploitation of the aquifer is also leading to the leaching of high levels of arsenic from natural underground sources into thousands of village wells in West Bengal. As estimated 200,000 people already have arsenic-induced skin lesions.

It is estimated that there are about 20 million species of plants, out of which 50,000 are edible. However, we are not using more than 200 plants as food, 80 per cent of our food supply however comes only from about eight

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species. We are today laying much emphasis on developing new varieties of these few plants. We should enlarge the food basket by including the excluded. Many nutritious grains fall under the classification "coarse grains". It is time we start referring to them as "nutritious grains". They are rich in micronutrients like Fe and Ca.

Facing The Challenge of Silent Hunger

The life and vitality of human beings depend crucially on certain vitamins and minerals that help in the efficient functioning of the brain, immune system, reproduction and energy metabolism. The body needs only small amounts of these nutrients, but it cannot synthesize them. They must be provided through diet. Deficiencies of even the small amounts required cause learning disabilities, impair work capacity and bring illness and death. Micronutrient malnutrition (silent hunger) is most devastating for pre-school children and pregnant women but is also debilitating for all ages. And it is debilitating the national economy as well. The most important and well studied micro-nutrient deficiencies are vitamin A, Iodine and Iron. Virtually every developing country has deficiencies in the micro nutrients large enough to constitute a public health problem. Many developing countries have multiple deficiencies (Table 3). Taken together micronutrient deficiencies affect a far greater number of people in the world than Protein-Energy malnutrition. 1.6 billion people live in areas where soils lack sufficient iodine, 655 million suffer from goitre, 26 million have had brain damage and 5.7 million cretinism. Two billion pre-school children suffer from iron deficient anaemia. 254 million pre-school children are affected by subclinical, severe and moderate deficiencies of Vitamin A.

Table 2

Percapita Net Availability

Year	Cereals	Pulses	Total
1991	468.5	41.6	510.1
1992	434.5	34.3	468.8
1993	427.9	34.8	462.7
1994	434.0	35.5	489.5
1995	464.9	37.0	501.9

Source: Economic Survey 1995-96.

In India, 167 millions are exposed to the risk of Iodine deficiency of which 54 million have goitre. Surveys conducted by DGHS indicate that 186 districts are IDD endemic area with goitre rates over 10 per cent. As regards Iron deficiency anaemia, multicentre study conducted by ICMR reveal that 87.5 per cent were anaemic. Deficiency of Vitamin A has long been known to be the largest preventable cause of blindness.

The main intervention strategies against micronutrient malnutrition are

- Diet supplementation of vulnerable population
- Dietary improvements
- Fortification of common foods

The richest sources of micronutrients are green leafy vegetables and fruits. India is rich in vegetable crops, some of which have good carotene content. Future programmes with respect to horticultural products must be directed towards identifying and propagating high micro-nutrient concentration varieties. People know when they are hungry but they have no natural hunger for vitamin. A, Iron, Iodine and other micronutrients. They do not know they need them and they often do not know what foods provide them.

Deficiency in soil nutrients reflect in the plants grown in the soil. One-half of all soils in all developing countries are deficient or low in available micronutrients. Soil depletion of S, Fe, Mn, Zn and Cu are due to intensive and indiscriminate irrigation and heavy use of high analysis chemical fertilisers. This gets reflected in the plants grown in these soils. Hence, in the national soil health care programme, we should ensure that both the macro-and micro-nutrient needs of soils are addressed.

Towards An Ever-Green Revolution In Agriculture

The term Green Revolution was coined by Dr. William Gadd of USA in 1968, when our farmers brought about a quantum jump in wheat production by taking to semi-dwarf, non-lodging varieties with great enthusiasm and when similar progress appeared feasible in rice. Punjab took the lead because of the scientific and educational backstopping given by the Punjab Agricultural University on the one hand and on the other, by the presence of the essential pre-requisites for progress such as land consolidation and leveling, rural communication, rural electrification and above all, owner cultivation.

Twenty eight years after the term "Green Revolution" was coined, we are in a position to draw a balance sheet and chalk out a strategy for the future. Apart from erasing the "begging bowl" image of India, the most important gain has been the

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Eleven million new livelihoods will have to be created every year in India and these have to come largely from the farm and rural industries sectors. Importing food and other agricultural commodities will hence have the same impact as importing unemployment. Thus, what we need now is an environmentally sustainable and socially equitable green revolution or what may be termed as ever-green revolution.

saving of forests and land, thanks to the productivity improvement associated with high yielding varieties. This year, Indian farmers harvested over 60 million tonnes of wheat, as compared to 6 million tonnes at the time of our Independence in 1947. Punjab farmers have raised the average yield of wheat to over 40 quintals per hectare. Likewise, Tamil Nadu farmers have raised the average yield of rice to over 50 quintals per hectare. If the yeild improvement associated with the Green Revolution in wheat and rice had not taken place, we will need another 70 million hectares to produce the wheat and rice we now harvest. Thus, the productivity improvement associated with the Green Revolution is best described as forest and land saving agriculture. The productivity improvement has taken place not only in wheat and rice but also in relation to milk and eggs. Only in the case of pulses, we are lagging behind (Tables 1 and 2).

The population of India is growing at a rate of 1.8 percent per year. If this trend continues, our population will double itself in less than 40 years. Only Kerala, Tamil Nadu, Goa and Mizoram have so far achieved a demographic transition to low birth and death rates. Besides population increase, improved purchasing power among the poor will enhance the demand for food, since undernutrition and poverty go together. In contrast, per capita availability of arable land is shrinking. Water use efficiency is still on the whole low and water disputes are growing. In addition to the gradual decline in per capita availability of land and water, various forms of biotic and abiotic stresses are spreading. There is still a widespread mismatch between production and post-harvest technologies. In perishable commodities like fruits, vegetables, flowers, meat and other animal products, this mismatch is often severe, affecting the interests of both producers and consumers. This is why foreign experts frequently refer to the setting in of a fatigue of the Green Revolution. Lester Brown and Hal Kane in their book "Full House" released last year predict that at the current rate of population growth and environmental degradation coupled with an improvement in the consumption capacity of the poor, India will have to import annually over 40 million tonnes of food grains by the year 2030. This is four times the quantity we imported in 1966 i.e. before the onset of the Green Revolution. We should examine this issue seriously and should not allow complacency overtake the farm sector, just because we now have over 30 million tonnes of food grains available with Government.

Industrial countries are responsible for much of the global environmental problems such as potential changes in temperature, precipitation, sea level and incidence of ultraviolet-B radiation. While further agricultural intensification in industrialised countries will be ecologically disastrous, the failure to achieve agricultural intensification and diversification in developing countries where farming provides most of the jobs will be socially disastrous. This is because, agriculture including crop and animal husbandry, forestry and agro-forestry, fisheries and agro-industries provides livelihood to over 70 percent of our population. The smaller the farm, the greater is the

Table 3

Population at Risk and Affected by Micro Nutrient Malnutrition

(In millions)

Regions	Iodine deficiency		Vitamin A deficiency among pre-school children		Iron deficiency among pre-school children
	At risk	Affected	At risk	Prevalence %	
Africa	181	86	53	49	206
America	168	63	16	20	94
South & South East Asia	627	272	127	69	643
Europe	82	14			27
Eastern Mediterranean	173	193	16	22	149
Western Pacific and China	423	141	42	27	1058
Total	1654	669	254		2177

Source: WHO 1995 @ Population affected by subclinical, severe and moderate deficiencies.

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need for higher marketable surplus for increasing income. Eleven million new livelihoods will have to be created every year in India and these have to come largely from the farm and rural industries sectors. Importing food and other agricultural commodities will hence have the same impact as importing unemployment. Thus, what we need now is an environmentally sustainable and socially equitable green revolution or what may be termed as ever-green revolution.

Those who advocate going back to the old methods of farming ignore the fact that just a century ago when the population of undivided India was 281 million, famines claimed 30 million lives between 1870 and 1900. The famine eradication strategy of India comprising the following steps is perhaps the most important achievement of independent India:

a. Enhanced production and productivity.

b. Better distribution through the public distribution system.

c. Adequate grain reserves.

d. Purchasing power enhancement through various employment generation and guarantee schemes.

e. Special intervention programmes for children, pregnant and nursing mothers and old and infirm persons.

While famines have been prevented, widespread under-nutrition prevails among the economically underprivileged. Since non-food factors like health care, environmental hygiene and literacy play an important role in promoting sustainable food security of the level of the individual, we should redefine security.

Steps for achieving sustainable food security are as under:

First sustained physical access to food will involve a transition from chemical and machinery intensive to ecological farming technologies.

The famine eradication strategy of India is perhaps the most important achievement of independent India.

Second, the emphasis on economic access underlines the need for promoting sustainable livelihoods through multiple income-earning opportunities.

Third, environmental access involves on the one hand attention to soil health care, water harvesting management and the conservation of forest and biodiversity, and on the other to sanitation, environment hygiene, primary health care and primary education.

If the political vision to implement this mission is forthcoming, population stabilisation can be more readily achieved. The prediction of Margins de Condorcet made in 1795 that population will stabilise itself, if children are born for happiness and not just for existence, will then come true.

The emphasis on the individual is important, since the household is not often a homogenous unit. Women and girl children tend to suffer more from under-nutrition than men and boys. UNDP's 1995 Human Development Report contains distressing data on the growing feminisation of poverty. To give operational content to such a concept of food security, we should initiate a Hunger-Free Area Programme (HFAP) consisting of the following components:

a. Ensuring sustainable availability of food by maintaining the growth in food production over population growth through the development and dissemination of ecotechnologies, supported by appropriate packages of services and public policies. Ecotechnology involves the blending of the ecological prudence and technologies of the past, with the best in frontier technologies, particularly biotechnology, information technology, space technology, renewable energy technology and management technology. Without ecotechnological empowerment, farm men and women will not be able to produce more food and other agricultural commodities on an environmentally sustainable basis from less land, water and energy resources.

b. Sustain the productivity of the natural resource base, by conserving and improving the ecological foundations essential for continuous advances in crop and animal productivity.

c. Ensure adequacy of household incomes through promotional social security, such as accessing assets, employment and organisational and marketing empowerment. Agricultural programmes should concurrently aim at more food, more jobs and more income. Integrated attention to farm and non-farm employment and value-addition to primary agricultural commodities will be necessary to enhance income and rural livelihood security

d. Provide entitlement to food through protective social security measures to the vulnerable groups, such as employment guarantee and food for nutrition programmes.

e. Introduce a National Food and Livelihood Security Act for the purpose of paying integrated

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attention to:

i. Conservation of lands, water, forests, biodiversity and the protection of the atmosphere.

ii. Enhancing productivity through ecotechnologies.

iii. Improving distribution in order to eliminate endemic hunger.

iv. Maintenance of adequate food security reserves.

v. Strengthening the techno-infrastructure for better post-harvest technology and expanding the coverage of sanitary and phytosanitary measures, and

vi. Efficient research, education, extension, marketing systems both to take full advantage of emerging opportunities in international trade and to ensure that research and extension designed to promote public good receive adequate support.

Working Towards A Hunger-Free India

The Chief Minister of Tamil Nadu, India in his budget speech delivered on July 17, 1996 made the following announcement.

"Feed the people
Who are hungry
Educate the people
To uplift the World"

To fulfil this dream of Mahakavi Bharatiyar, this Government will launch a new "Hunger Free Area Programme" with an aim to eradicate poverty induced hunger. A number of schemes are already under implementation to alleviate poverty and to cater to the nutrition requirements of different groups of the population. Gaps in this coverage will be identified which can then be specifically targeted under the Hunger Free Area Programme. Provision has been made in the Budget for preparing a detailed strategy to implement this programme in association with Dr. M.S. Swaminathan.

Studies at MSSRF have shown that by adding a horizontal dimension to numerous vertically structured programmes and by promoting a coalition of all concerned with ending hunger and deprivation, it is now possible to provide opportunities for a healthy and productive life for all.

Designing A Hunger-Free Area Programme (HFAP)

The problem of food and nutrition security at the level of the individual has to be viewed in 3 dimensions. First, inadequate purchasing power leads to calorie-protein under-nutrition. Second, the lack of the needed quantity and variety of micronutrients and vitamins in the diet leads to several nutritional disorders including blindness caused by Vitamin A deficiency. This kind of problem is referred to as "hidden hunger", a problem which affects today more than 2 billion people in the world. Third, lack of environmental hygiene and sanitation leads to a low biological absorption and retention of food, due to intestinal infection and diaorrhea. Thus, both food and non-food factors assume importance in determining the nutrition security of an individual. Concurrent action at all these levels is necessary in a Hunger-Free Area Programme. The various steps involved in this process are described below:

Table 4

Percentage of Nutrient-Deficient Soils Among 190 Soils in a Global Survey Across 25 Countries

	Estimation of deficiency levels		
	Acute	Latent	Total
Nitrogen	71	14	85
Phosphorus	55	18	73
Potassium	36	19	55
Boron	10	21	31
Copper	4	10	14
Iron	0	3	3
Manganese	1	9	10
Molybdenum	3	12	15
Zinc	25	24	49

Source: Sillampaa 1990, International Food Policy Research Institute, Washington, DC

Step No. 1: Identify the basic underlying reasons for chronic under and malnutrition.

Step No. 2: Collate information on available programmes and opportunities for the sustainable end of hunger.

Step No. 3: Articulate the steps needed to provide the 'missing elements' in achieving the end of hunger.

Step No. 4: Mobilise local level community action and commitment for achieving the end of endemic hunger by the end of the Ninth Five Year Plan and enlist mass media support for this purpose.

Step No. 5: Assess the extent of (i) Financial resources required (ii) Technical resources for technological empowerment necessary (iii) Managerial and Organisational resources needed.

Step No. 6: Foster the organization of a Grassroots level Coalition for Ending Hunger in each HFAP area comprising representatives of

1) Elected representatives of the people
2) Government agencies
3) Civil Society—Non-governmental organizations, voluntary agencies, service

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organizations like Rotary clubs, Lions clubs, etc.

4) Academia—Research, Training Institutions and Universities
5) Corporate Sector
6) Financial Institutions and
7) Mass Media

The Coalition for Ending Hunger will be responsible for designing, implementing and monitoring the Hunger Free Area Progamme.

From Concept to Grassroots Level Action

The challenge lies in converting HFAP from a concept into an operational programme. In such a programme, emphasis will have to be placed during the remaining years of this century on generating additional livelihood opportunities for those living below the poverty line in villages and towns. The increasing feminisation of poverty demands that priority attention be given to women and girl children. Based on these considerations, the following operational framework is suggested for a National Hunger-Free Area Programme.

Phase-I—GAP and Constraints Analysis

This phase will relate to the analysis of gaps and constraints. Under the GAP Analysis Programme, an inventory will be made of all the entitlements currently available to those living below the poverty line both through the Central and State Government programmes. The inventory will be suitably classified so as to differentiate social security and nutrition intervention programmes from those relating to employment generation.

Once the Entitlements Database is compiled, a detailed study based on random sampling techniques will be conducted in about 100 villages of a district to assess the extent to which the entitlements have actually reached the intended families. Within families, special studies will be conducted to ascertain the extent of male-female differences in access to entitlements. The gap between what the poor are entitled to and what they are actually receiving will be grouped according to gender and economic status (i.e., those having assets like land or livestock or fish pond or trees and those who do not own any productive asset).

Once the GAP Analysis is completed, a careful identification of the reasons for the gap and the constraints faced by the poor in getting their entitlements will be made. Such a gap and constraints analysis will be the starting point for understanding how direct and indirect poverty elimination programmes can be made to reach the unreached. An inventory of the voluntary organizations functioning in the villages included under the GAP Analysis would be made together with an assessment of their effectiveness in serving as bridges between Government agencies and the poor. Discussions will be held with both voluntary organizations and men and women members of elected Panchayats and Nagarpalikas on how the gap can be ended and how the delivery systems of poverty alleviation programmes can be improved in their efficiency and impact.

Phase-II—Spreading the Message and Strategic Planning

This phase will be a strategic planning phase giving particular attention to the following:

a. Steps needed to fill the gap between entitlements and actual delivery.
b. Opportunities for mobilising human, financial and technical resources in the concerned areas for improving the efficiency of delivery of on-going programmes and for initiating new programmes to meet the unmet minimum needs of the population.
c. Identification of methods of achieving synergy and convergence among all the programmes, whether governmental or non-governmental.
d. Articulation of new livelihood opportunities based on both farm and non-farm occupations.
e. Introduction of organisational and management methods which will ensure the oversight and effective participation of the primary stake holders in the implementation of programmes designed to strengthen the security of their livelihoods, and
f. Identification of young women and men in the concerned villages for forming a Corps of Hunger Fighters. The young hunger fighters would undertake responsibilities such as creating awareness of entitlements, improving delivery systems and promoting environmental hygiene and garbage and sewage recycling.

The hunger fighters would be given a small honorarium for meeting their travel and other expenses and for compensating them for their time. The members of the Corps of Hunger Fighters will be drawn from those who have a social or economic stake in living in their respective villages. There will be equal number of women and men in such a corps.

Phase III—Finalising the Action Plan

As a result of the work done during phases 1 and 2, awareness of the possibilities for ending hunger and

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deprivation, analaysis of methods of achieving the desired goals and an implementable action plan would have emerged. The Action Programme, to be effective, must emerge from discussions with the poor families and on the basis of their suggestions. The phase will therefore be opportune to establish a broad based local level Coalition for Ending Hunger and Deprivation. Such a Coalition for Ending Hunger could consist of representatives of local self-government institutions, government agencies responsible for fighting poverty and hunger, academic community, the civil society, corporate sector, women's and youth organisations, financial institutions and the mass media. Such a coalition will assign specific tasks to each member of the coalition in the areas of awareness generation, resource mobilisation, task implementation, monitoring and evaluation. The Coalition will aim to add a horizontal dimension to vertically structured government programmes. Coalition members will also help to develop methods of achieving gender equality and eliminating social evils like dowry and alcoholism.

Phase IV—Towards Sustainable Food and Nutrition Security

During this period, HFAP will be converted from a desirable concept to an implementable local level action plan. Intensive efforts will be made to sensitise all sections of the community to the uncommon opportunities now available for achieving a sustainable end to hunger. The poor themselves will play an active role in both the planning and implementation phase. Many of the members of the grassroots level Corps of Hunger Fighters will come from landless labour families. The Corps of Hunger Fighters will include elected members of Panchayats and Nagarpalikas, so that they are able to serve as links between the elected bodies and the people. There should be a minimum of two members of the corps drawn from every village/town, so that they are able to play a role in improving environmental hygiene and sanitation as well as the health and nutrition security of the families living in their village/town.

Ours is a land of the young. Nearly 400 million women and men are below the age of 21. The nation's future depends upon the opportunity they get for a productive and healthy life. Youth can be attracted and retained in farming only if farming becomes both intellectually stimulating and economically rewarding. This is where ecological agriculture, which is knowledge intensive, can prove to be a double advantage.

Our society is characterised by cultural, religious, linguistic and political pluralism. Political pluralism at the level of the central government provides an opportunity for elevating issues relating to hunger elimination and poverty alleviation to a level of overriding priority, transcending political frontiers and placing them at the top of the political agenda. The Government of Tamil Nadu has taken the first bold step in this direction by deciding to initiate a concerted attempt to eliminate poverty-induced hunger. We should work for spreading the Hunger-Free Area Programme throughout the country before we enter the next century. ❐

The author is UNESCO Professor in Ecotechnology & Chairman M.S. Swaminathan Research Foundation, Chennai.

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Growth Of Science And Technology In Post-Independence Era

Dr. M.R. Srinivasan

Though we have developed a formidable S & T base with a large trained manpower, our R & D institutions have over the years become governmentalised. This needs to be changed soon. Innovativeness in a non-hierarchical atmosphere with emphasis on individual initiative is the need of the hour, feels the author.

INDIA has had a strong tradition of science and technology, from the time before the country became independent. I am not discussing, in this article, the tradition of science and technology in India in the distant past, which is also very impressive. In the beginning of the 20th century, we had stalwarts like J.C. Bose, P.C. Ray, Srinivasa Ramanujan and others, who were considered to be amongst the distinguished men of science of that period anywhere in the world. The period 1920-1940 saw a flowering of India's achievements in the field of science. We had outstanding scientists headed by the Nobel Laureate, C.V. Raman and in his distinguished company were others namely Meghnath Saha, S.N. Bose, Birbal Sahni and others. These scientists worked in the university system and made outstanding contributions in many fields including Physics, Chemistry and Life Sciences. That was also the time when high quality science could in fact be done with modest outlays on experimental facilities. Raman was fond of recollecting that the equipment that he built for carrying out the work that won him the Nobel Prize cost just a few thousand rupees.

After India became independent, promotion of science and technology became a matter of particular interest to our first Prime Minister, Pandit Jawaharala Nehru. Although the ancient Indian society had impressive examples of men of science in many areas such as Astronomy, Medicine and Mathematics over the centuries there had been a great hold of superstition in the minds of large sections of our society. Pandit Nehru was, therefore, always reminding the people of the importance of developing "scientific temper". He also believed that science and technology would play an essential role in solving the age old problems of poverty and deprivation in the country and of enabling the people to achieve a better standard of living and indeed a better quality of life.

In the early years after our independence, government set up the Council of Scientific and Industrial Research (CSIR). The British example of the Department of Scientific and Industrial Research was kept in mind and a number of laboratories in various disciplines were set up. The first three Laboratories set up early in 1950 were the national Physical Laboratory (NPL), the National Chemical laboratory (NCL) and the Central Fuel Research Institute (CFRI). Later in the same year were started four more institutes, namely the Central Glass and Ceramic Research Institute (CGCRI), the Central Food Technological Research Institute (CFTRI), the Central Drug Research Institute (CDRI) and the National Metallurgical Laboratory (NML). Speaking on the occasion of the inauguration of the CFRI in April 1950, Raman referred to the "Nehru-Bhatnagar effect". On that occasion Raman said:

> "There was, for instance, a time when the chests of the government treasury were safely barred and locked and sealed against any demands from science. But now we see laboratory after laboratory coming up... that surely is a Bhatnagar effect!"

A Vast Network

From those early beginnings, the CSIR now has a chain of 40 specialised national laboratories and 80 field extension centres in diverse scientific disciplines and a wide variety of technologies.

The CSIR with its complement of about 10,000 highly qualified scientific and technical personnel is amongst the largest R&D organisations in the world for scientific and industrial research. Over the years CSIR has contributed to many vital scientific, industrial, strategic and human resource development endeavours. *The industrial production based on CSIR know-how during 1995-96 is of the order of rupees three thousand crore.* In recent years CSIR is trying to derive substantial earnings under contract R&D and consultancy services. Such earnings are estimated

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to be around 30 per cent of CSIR turnover. CSIR also files and owns more patents than any other Indian organisation. *However, CSIR and its laboratories face major challenges for the future. It has to integrate itself in a much stronger way with industry and eventually become substantially self-financing.*

Over the years the organisation structure has tended to promote hierarchies and retard individual initiative and enterprise. There is, therefore, an urgent necessity to inject functional and operational autonomy. At the same time a suitable system of accountability, incentives and rewards will have to be introduced so that committed goals are achieved and the achievers are recognised and rewarded. *In trying to bring in a re-structuring along corporate lines, one must not lose sight of the fact that pursuit of science involves pursuit of excellence and an over-emphasis on management principles could put the institutions into a straightjacket.* The evolving management will, therefore, have to find a fine balance between these two conflicting requirements. A major challenge the CSIR institutions are facing is that they have not been able to modernise their equipment and infrastructure. This weakness will have to be attended to and modernisation must be looked upon as a continuing activity and appropriate financial provisions must be made for this purpose.

An area of immediate concern is to spread adequate awareness about protection of intellectual property rights amongst the Indian scientific community. In view of CSIR's familiarity with the patenting process, they should take a lead role in educating scientists spread over many of our institutions regarding the detailed mechanics of the patenting process. While considering bonds with industry and forging a strong interactive relationship with industrial enterprises, CSIR laboratories must also play an appropriate role in supporting basic research. For this purpose integration with University departments and academic institutions is an activity that must be strengthened. Over the years the CSIR laboratories must set up strong consultancy capabilities in diverse areas of technological applications to support our widening industrial activities.

Atomic Era

An important scientific institution started in the post-independence era was the Department of Atomic Energy. Research and development in the field of atomic energy was initially confined to the United States, where the joint allied war time effort got transformed into a vast American enterprise leading to the development of the atom bomb. In the immediate post war years, apart from the United States, nuclear research and development was pursued actively in Britain, France and Canada, amongst the western nations. There was a parallel development of nuclear technology directed towards weapons development in the former Soviet Union. *Homi Bhabha, the founder of India's atomic energy programme realised even as early as mid-forties that it was essential for India to develop nuclear science and technology.* In 1946, he got support from the House of Tatas to start the Tata Institute of Fundamental Research to take up research in cosmic ray physics, particle physics, mathematics and other related areas. When India commissioned its first research reactor Apsara in August 1956, it was the first country in Asia (excluding the former Soviet union) to usher in the atomic era. In the mid-fifties very little information in the field of atomic energy was in the public domain. The USA and other nuclear advanced nations imposed strict censorship on all publications and literature relating to atomic energy activities. India had to build up its own knowledge base in all facets of atomic energy activities. Atomic energy development requires an interdisciplinary base covering disciplines such as Physics, Chemistry, Biology, etc., and mastery of technologies such as electronics, chemical engineering, mechanical engineering, etc. The research base at Trombay was strengthened greatly when the more powerful research reactor Cirus was built, as an Indo-Canadian project.

Atoms For Peace

In 1955, President Eisenhower took an initiative to spread atomic energy for peaceful purposes in the world under the programme 'Atoms for Peace'. The first International Conference on Peaceful Uses of Atomic Energy was held in Geneva in 1955 and was presided over by Homi Bhabha. A considerable amount of basic information relating to nuclear science was declassified by the United States, Soviet Union, France, Britain and Canada. *Nevertheless, the early leadership of the Indian atomic energy programme realised that nuclear technologies would remain as bargaining chips in the international diplomatic agenda and therefore emphasis was laid on mastering a wide range of technologies on a self-reliant basis.* The Department of Atomic energy embarked on developing processes for making very high purity uranium from ores available within the country for fabrication of nuclear fuel, production of heavy water, and fabrication of nuclear instrumentation.

The objectives of the Indian atomic energy programme were clearly directed towards peaceful purposes. Thus production of radio isotopes for medical application was perused vigorously. Similarly, radio isotopes were supplied to Indian industry for purposes of non-destructive

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examination of welds, castings and forgings. Training technicians in the safe use of radio isotopes and radiographic cameras was embarked upon. Application of radiation technologies in agriculture started right from the early days. In brief, new mutant varieties of groundnut, moong, chick peas etc., were evolved at Trombay. They have since been adopted extensively by farmers in Maharashtra, Gujarat, Karnataka etc., resulting in high crop yields and other benefits to the farmers. Another use of radiation technology is for the purpose of sterilisation of medical products. At the Bhabha Atomic Research Centre (BARC), a plant for sterilising medical products such as disposable syringes, catheters, surgical gloves, medical dressings etc., has been functioning for many years. A second plant has since been set up in Bangalore. Use of radiations for disinfestation of food products has been studied for a long time. A plant employing radiation techniques for preservation of spices and marine products meant for export is likely to be built in the near future.

The most important single area of the peaceful use of atomic energy is however for power production. India's first atomic power station at Tarapur went into operation in 1969. This power station was built by the US nuclear industry and employs enriched uranium as a fuel. The power station has completed 27 years of successful operation and has been producing the lowest cost non-hydro electric power. India and Canada cooperated in setting up an atomic power station in Rajasthan (India's second atomic power station) using the heavy water reactor technology, which permits use of natural uranium as fuel. *The main thrust of our nuclear power programme has been to build reactors using natural uranium as fuel in the first stage. This will be followed by a second stage programme which would be employing fast breeder reactors using plutonium as fuel. The plutonium will be extracted from the spent fuel of the first stage reactors. In the third stage, we will be building reactors that would use thorium as fuel. India has very large reserves of thorium while it has only limited reserves of uranium.* During the eighties, Indian industry was actively encouraged to make equipment and components required for nuclear power stations, heavy water production plants, nuclear fuel fabrication plants, etc. This has been an extremely challenging task because industry had to upgrade its quality levels substantially and work with exotic materials not in normal use in conventional industry. It is a tribute to the all-round industrial capability of India that nearly the entire range of equipment and components for all these plants have come from our own manufacturing facilities.

Any discussion on the applications of nuclear science and technology is incomplete without a reference to safety aspects. Right from the very inception studies of the effects of radiation on living matter, human, animal and plant have been pursued. These studies have provided the scientific foundation for the health and safety activities. The atomic energy organisation provides nation-wide radiation monitoring services at hospitals, industries and all other nuclear centres where radiation hazards are encountered. At the nuclear centres where large radiation sources are present, trained health physicists are deployed round-the-clock to make sure that plant personnel are not exposed to any risk. There is continuous monitoring of all discharges—solid, liquid and gaseous to ensure that there is no hazard to the surrounding public. Environmental survey laboratories continuously monitor the status of the radiation levels in the environment and they are compared with background levels. The radiation status of the plants, plant personnel and discharges are audited by the Atomic Energy Regulatory Board. The Board also carries out regularly safety surveys of plants. It also licenses the design and construction of new plants. Safety related research is an important activity carried out both at the laboratories of the Department of Atomic Energy and other academic institutions.

We have recently completed forty years after our first research reactor went into operation in August of 1956. During these four decades the atomic energy organisation has grown into one of the largest scientific and technological institutions in the country covering a wide range of disciplines. The organisation not only has a chain of laboratories engaged in many disciplines but also has many industrial scale operations such as mines for uranium, production plants for heavy water and nuclear fuel, power stations, re-processing plants for treating spent nuclear fuel etc. This expertise has vastly enriched our industrial capability and succeeded in enabling Indian industry to supply the needs of diverse high technology requirements. The atomic energy organisation has also been interacting closely with academic institutions so that members of the academic community are provided with opportunities to continue their research activities at the centre of the Department of Atomic Energy. There is substantial scope now for using various technologies available within the atomic energy organisation more widely in industry leading to higher operational efficiency or providing new products and processes. This is a challenge for the next decade or so. The Department of Atomic Energy is supporting a number of institutions engaged in basic research notably the

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Tata Institute of Fundamental Research (TIFR) which is carrying out front line research in physics, mathematics, radio astronomy and molecular biology. Research in mathematical sciences is being supported at the Institute of Mathematical Sciences and other centres.

Space Programme

Activities in the field of space science and technology were initially started within the Department of Atomic Energy. When Vikram Sarabhai succeeded Homi Bhabha as Chairman, Atomic Energy Commission and Secretary, Department of Atomic Energy, he devoted a large part of his time and energy to planning and implementing the programmes in the field of space science and technology. A separate Department of Space and a Space Commission were established in 1972. A multi-disciplinary science and technology centre dedicated to support the space programmes was set up near Trivandrum which has since been named as Vikram Sarabhai Space Centre (VSSC). A rocket launching centre was set up at Sriharikota (SHAR). Work was taken up on designing and building of satellites for various applications. Some of the satellites were launched from the Biakanoor Space Centre, now in Kazakstan (formerly in the Soviet Union) and some from French Guyana, using Russian and French rocket launchers. A number of INSAT satellites (numbering a total of seven) have been launched and they are now providing to the country essential services in the field of television broadcasting, telecommunications and weather forecasting. Another category of satellites, the Indian Remote Sensing (IRS) series, are providing valuable information on land use, agricultural production, forest status etc. Our satellites have provided platform for our scientists to study radiation emissions from stellar objects and intergalactic sources thus contributing to an understanding of the universe. For the purpose of launch, tracking, control and data acquisition, centres have been established at Hassan, Bangalore and Sriharikota.

Design and development of rocket engines were taken up from the early years of the space programme. Initially the emphasis was on development of solid propellent engines. Indian industry has been engaged in the production of these engines. Engines of increasingly higher thrust have been built and tested. The ASLV is capable of launching satellites weighing up to 150 kgs. in near circular orbit. Success has also been achieved in the development of Polar Satellite Launch Vehicle (PSLV) capable of launching 1000 kg. class IRS satellites in the polar sun-synchronous orbit. *The Space Department is now actively engaged on building the Geostationary Satellite Launch Vehicle (GSLV) and its first development flight is scheduled for 1997-98.* Major efforts have been mounted on design and fabrication of cryogenic engines, although Russia has agreed to supply a certain number of them. The needs of the space programme include a wide variety of highly sophisticated specialised items like space grade sensors (for pressure, temperature, location etc.), optical systems (i.e. cameras), large size mirrors in beryllium, just to mention a few. They also need to be rigorously tested under simulated space environment in vessels that create conditions encountered in outer space. *Our experience to date has been that many of these tasks have been accomplished at substantially lower costs than in the advanced countries and India could indeed get lucrative export orders for sale of systems, sub-systems and components.* There are many technologies which have been developed by the Indian Space Research Organisation (ISRO) which can be used with benefit in our industry and it is to be hoped that ISRO will find ways and means of effecting this technology transfers.

Agricultural Research

We may now look at the history of agricultural research in India. The Imperial Council of Agricultural Research was set up in 1929 to promote, guide and coordinate agricultural research throughout India. In 1947, this institution was renamed the Indian Council of Agricultural Research (ICAR). In due course of time, the Department of Agricultural Research and Education (DARE) was set up and the Director General, ICAR also became Secretary, DARE. The ICAR now operates 46 central research institutes (of which 4 are national institutes) and 26 national research centres. The ICAR has assisted in the setting up of 29 agricultural universities (including a Central Agricultural University at Imphal for the North-East region). It is this large scientific infrastructure that ushered in the Green Revolution and increased production of foodgrains, milk, sugarcane, fruits, vegetables, onions, potatoes, eggs, cotton, oil seeds etc. over the last several decades. India used to be visited by periodic famines involving many deaths in the past, even as recently as forty or fifty years ago. Even thirty years ago, we had to supplement internal production of foodgrains with imports. Now the country is able to export a variety of agricultural products including foodgrains. The steadfast application of science at the field level and the acceptance of new varieties by farmers, combined with their hardwork, resulted in self sufficiency in foodgrains being achieved about two decades ago. The ICAR on the one hand and the community of farmers on the other have been mainly

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responsible for this revolution. Certainly imaginative political and administrative leadership in the sixties played a vital catalytic role in this achievement.

Medical Research

The Indian Council of Medical Research (ICMR) was set up in 1949 but had its origins in the Indian Research Fund Association (IRFA) set up in 1911. The specific objective of IRFA was sponsoring and coordinating medical research in the country. The ICMR now has 21 National Research Institutes/Centres which are mission oriented institutes, located in different parts of India. These institutes/centres carry out research in specific areas like tuberculosis, leprosy, cholera, diarrhoeal diseases, viral diseases including AIDS, malaria, kala-azar, vector control, nutrition, food and drug toxicology, reproduction, immunohaematology, oncology etc. There are also 6 Regional Medical Centres which concentrate on regional health problems. In a situation of resource limitation, the ICMR is trying to balance research efforts between competing fields. Infectious diseases, malnutrition and excessive population growth are major priorities for medical research. Emerging health problems such as cardiovascular diseases, metabolic disorders (including diabetes mellitus), neurological disorders, cancer, mental disorders, blindness etc. are receiving attention of the research groups. Research work on traditional medicines based on herbs has also been taken up. The ICMR has been, on the one hand, using available knowledge to tackle diverse problems of health and disease control, and on the other, using the tools of modern biology to study the causes for diseases, their early diagnosis and control through new therapeutic agents. Developing vaccines for prevention is another thrust area.

New departments in the field of science and technology started after the seventies include the Department of Electronics and the Department of Science and Technology (DST). Later, the Department of Environment and Forests, the Department of Biotechnology, the Ministry of Non-Conventional Energy Sources and the Department of Ocean Development were spun off from the activities of DST. DST's main task is funding of basic science research in existing institutions in the country, award of research fellowships, support for techno entrepreneurs, stimulating S&T culture in cooperation with state governments etc. The other departments named above have more clear cut mandates. As a rule, these departments do not themselves operate research institutions but fund R&D of interest to them at existing institutes and universities. Thus they are also serving a very important role in supporting R&D in academic institutions.

For the sake of completeness, we may note that the Defence Research and Development Organisation runs a chain of fifty laboratories in different fields of special interest to the Army, Navy and Air Force. They include institutions such as the Defence Metallurgical Laboratory, Gas Turbine Research Establishment, the Vehicle Research and Development Establishment etc. Another set of laboratories are those set up in partnership between government and industry in fields such as textiles, silk, coffee, automobiles etc. Then there are institutions set up solely by industry associations. Finally there are R&D institutions set up by industries.

From the foregoing we see that the country possesses a formidable science and technology base with a large trained manpower. *As of now nearly 80 per cent of all R&D funding is coming from the governmental sector and only 20 per cent from industry. In mature industrial societies, the ratio is the other way round, industry accounting for the major share.* We have to increase outlays on R&D substantially and also set the private sector to support R&D activities of interest to them in a big way so that they may sharpen their competitive edge. A particular weakness we notice is the inadequate meshing in of our S&T efforts, carried out mostly in governments. We have seen such meshing in especially in the fields of agriculture, atomic energy and space efforts. The results in these fields clearly demonstrate the benefits of such integration.

In the industrial field, however, technology is coming not infrequently from overseas partners and they rely on their own R&D inputs from overseas. Our R&D institutions should target both Indian companies using their own technology and overseas companies and seek development contracts for product improvement and new product/process development. Our R&D institutions have over the years become 'governmentalised' and this mind-set has to be changed soon. Innovativeness in a non hierarchical atmosphere with the greatest degree of individual initiative is the need of the hour. The R&D infrastructure of our laboratories need to be upgraded and modernised with provision of adequate funds. Support to basic science research must be augmented and we must create centres of excellence in our academic institutions in a wide range of disciplines and specialities. We must address the problem of attracting bright young people back to science as the emoluments offered for positions in management, especially with MNCs, are proving to be irresistable. We must also create conditions for easy movement of scientists, at all stages of their career, to industry and vice-versa. Finally a new era of networking between our various laboratories and their scientists in a spirit of cooperation must dawn on us so that the collective strength of our S&T base could speed up our all-round development ❐

The author is Member, Planning Commission.

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India's Space Programme

Prof. U.R. Rao

A net result of the spectacular success in the development and application of space technology is that apart from initiating a total communication revolution, a vibrant industry capable of contributing space hardware has also been created in the country.

THE most significant human enterprise of our century is undoubtedly the initiation of space programme 40 years ago, which has not only revolutionised the present but promises to shape our future. The spectacular success in the development and application of space technology in India during the last three decades stands out as one of the most significant achievements in post-independent India. Benefits of our space efforts today extend over communication, meteorology, TV broadcast, education, agriculture, industrial growth, resource management, environmental protection, disaster mitigation , flood and drought management, health and entertainment, virtually touching every facet of human endeavour in this nation.

Even though the Indian space programme started with a modest beginning in 1963 primarily to carry out sounding rocket experiments in space sciences, it soon focussed its attention on using space technology for carrying out major identified national tasks on a totally self-reliant basis. *Based on the firm conviction that quantitative transformation of our stagnant society can indeed be accomplished through the application of space technology, the Indian Space Programme transitioned from the initial conceptual phase to experimental phase during the decade of seventies.* This decade was primarily devoted to laying a sound technical foundation through conduct of large scale experiments involving experimental satellites like Aryabhata, Bhaskara and APPLE, development of a modest launch vehicle SLV-3 and practical demonstration of the benefits of space technology. Full scale operationalisation of space technology on a totally self-reliant basis which began around 1980 has truly revolutionised the Indian society by enabling even its grassroots to significantly benefit from the application of space technology.

Communication Revolution

Communication which reflects the culture of today and shapes the future of tomorrow is at the very root of the progress of human civilisation. The third wave information revolution, a consequence of the space age, has virtually demolished the geographic, cultural and social boundaries across the entire globe, shrinking time and distance and resulting in a global village. Realising the potential benefits of satellite technology, ISRO carried out an year long Satellite Television Experiment (SITE) beginning August 1975, which marked a milestone in harnessing satellite technology for taking the powerful audio-visual education of relevance to remote rural areas. Immediately following the successful launch and operationalisation of the experimental communication satellite, APPLE, in 1981, ISRO embarked on a full-fledged programme of providing operational services in communication and meteorology with multi-purpose INSAT series of geostationary satellites.

INSAT system, with over 5000 two way speech circuits covering 170 routes amounting to 150,000 route kms has initiated a communication revolution in the country connecting for the first time, even remote areas and off-shore islands with the main stream of the nation. The nation-wide geographic reach of INSATs has been advantageously used for a variety of applications such as administrative, business and computer communications through a number of captive networks using low cost terminals. Specialised services such as PTI news service, facsimile transmission and emergency communication for post-disaster relief operations have become operational. One of the most innovative use of INSAT has been the implementation of the unique, unattended, locale specific Disaster Warning System consisting of over 250 disaster warning receivers installed in selected, cyclone prone east coast areas of the country, which have been saving thousands of lives and livestock each year. The

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Remote Area Business and Message Network (RABMN), has become operational providing data communication between industries located in major metropolitan cities and their branches spread across the country. The National Information Centre (NICNET) is now operating over 700 VSATs, for providing reliable data communication links interconnecting district headquarters, state capitals, and the central government. The recently liberalised policy of privatisation of VSAT service has provided the much needed impetus for the introduction of high speed VSATs to meet the communication requirements of different closed user groups. Within a short period of 3 years, more than 5000 VSATs have already become operational, which is expected to triple over the next 2 years to significantly enhance the global competitiveness of our industries.

Most dramatic impact of INSAT has been in the rapid expansion of TV dissemination in the country through installation of more than 750 TV transmitters in addition to 35,000 direct reception sets, providing access to over 85 per cent of India's population.

Most dramatic impact of INSAT has been in the rapid expansion of TV dissemination in the country through installation of more than 750 TV transmitters in addition to 35,000 direct reception sets, providing access to over 85 per cent of India's population. Regional Networking Services have already been implemented in many States of the country. Transportable earth stations such as Satellite News Gathering (SNG) vehicles, capable of providing extensive real time coverage of all important events in any part of the nation, have been developed. Use of INSAT for educational TV broadcasting with about 100 hours of programme per month to about 4000 schools and colleges has been further augmented by the dedication of a full transponder for training, developmental communications and distance education to the open university students.

An effective educational system requires a two way interactive communication system enabling the target audience to ask questions and obtain clarifications from experts, in real time. A number of selective large scale experiments using inexpensive talk back facilities have been conducted for providing relevant educational instruction to social workers, village teachers, agricultural community, panchayat officials and open university students to demonstrate the effectiveness of the satellite media for imparting interactive education. These experiments have unequivocally demonstrated the paramount importance of adopting such an interactive system for rapid dissemination of education and eradication of illiteracy.

The extraordinary pace of technological advances in satellite technology and optical fibres combined with the availability of powerful mini-computers, sophisticated compression techniques and personalised communication services, have made it possible to access vast amounts of information and data using multimedia services. *Information on demand, bandwidth on demand, video on demand and direct to home television have become the common buzz words of the information age.* With the introduction of mobile communication in INSAT 2C, the decision to have dedicated GRAMSATS for dissemination of language and region specific education even to remote areas and future plans for introducing direct to home television, the country is now fully poised to become an integral part of the global information super-highway.

New Green Revolution Through Indian Remote Sensing Satellites

In spite of the green revolution in India enabling the country to increase its annual food grain production from a mere 55 million tonnes in 1950 to over 190 million tonnes, the average yield in India is only 1.6 tonne/ha. as against the world average of 2.6 tonne/ha. and the world's best of over 4 tonne/ha. The negative repercussions of the very green revolution has led to severe degradation of our land resources due to extensive water logging, indiscriminate use of chemical fertilisers and inadequate drainage. Even with the doubling of irrigated area and reclamation of about 25 m. ha. of waste land identified through space imageries, the task of doubling the food grain production to meet the base requirements of the projected population of 1.8 billion by 2050 can only be achieved through a new green revolution.

The successful launching of the state-of-the-art IRS series of remote sensing satellites beginning 1988, following the expertise gained from the use of Bhaskara experimental satellites, have enabled the nation to continuously monitor our natural resources. Synoptic, high resolution repetitive imageries being obtained from IRS satellites have now become a powerful tool for mapping spatial as well as temporal changes in soil characteristics and land use pattern at micro level to identify forest, plantation, pasture land, single and double cropped areas, cultivable waste land and fallow residual lands. Satellite

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imageries are now operationally employed to identify underground water aquifers with better than 92 per cent accuracy and map surface water bodies for optimal implementation of irrigation schemes. Monitoring of the aerial extent of seasonal snow fall and glacier inventory have enabled prediction of snow-melt run off into reservoirs and rivers. Identification of water-logged areas in the irrigation command areas and inventory of crop lands and cropping patterns have facilitated efficient water usage resulting in increased cropping intensity. The ability of remote sensing imageries to predict acreage and yield of all major crops well in advance has proved to be of immense value in optimal planning of storage and distribution of food grains. Regular biweekly bulletins demarcating potential fishing zones in the ocean are routinely distributed to our fishermen in the coastal areas to substantially improve the fish catch. *Remote sensing has now become the most important tool for urban planning, environmental monitoring and identification of appropriate locations for establishing industries.*

Technology of prediction, monitoring as well as management of drought and flood disasters developed using remote sensing imageries have greatly assisted in developing strategies to deal with such extreme disasters and taking timely remedial measures. Database collected over years has helped to delineate flood risk zones, identify flow constraints and water logged areas to evolve appropriate structural adjustments for preventing large scale flood damages. Continuous monitoring of vegetation indices indicating the health of the crops on a biweekly basis together with real time meteorological information has become an important means of advance prediction of the onset of drought. Quantitative and accurate information on environmental degradation obtainable from space remote sensing has provided us the unique capability to institute mid course changes, if required, to ensure that the developmental processes for increasing agricultural productivity do not result in ecological damage.

Extensive use of remote sensing imageries for various identified individual applications has naturally led to the initiation of sustainable integrated development strategies at micro-level which can usher a new green revolution. Space derived inputs on soil characteristics, agricultural practices, underground and surface water resources, forest cover, environmental status and meteorological information have enabled implementation of suitable water and soil conservation measures at each watershed level combining with advanced biotechnological inputs such as improved seeds, integrated pest management strategy and appropriate cultivation practices, it is indeed possible to substantially improve the agricultural production on a sustainable basis, without compromising on the integrity of the environment. Successful initiation of integrated development strategies in a few selected drought prone areas, has resulted in the growing of two crops in these districts which till recently suffered from severe scarcity of even drinking water. Encouraged by the success of these experiments, our space scientists have taken up the integrated management of sustainable development in 172 districts of the nation in collaboration with all other concerned user ministries.

IRS-1C, with its capability to provide imageries with a resolution of 5.8 meters, is now universally acclaimed as the most powerful currently available remote sensing satellite in the world. IRS imageries are already being accessed by a number of countries including USA resulting in substantial revenue to the Government. The planned series of future IRS satellites with a resolution of 1-2 meters, dedicated satellites for ocean monitoring and use of both passive as well as active microwave sensors with all weather capability will undoubtedly ensure that India will remain a leader in the space remote sensing area.

Self-Reliance in Launch Vehicle Technology

The successful launch of ASLV which orbited a 106 Kg SROSS satellite into a near earth orbit in May 1992 clearly established the maturity of ISRO in launch vehicle technology. ASLV, a modification SLV-3 with two strap-on boosters added, was conceived as a low cost vehicle for launching 150 Kg. class of payloads and was used to validate new technologies such as strap-on technology, bulbous heat shield, closed loop guidance system, inertial navigation platforms etc., required for operational launch vehicles such as PSLV and GSLV.

With the successful development and launch of the 44 m. tall, four stage world class PSLV rocket weighing 275 tonnes involving both liquid and solid propulsion systems in 1994, India today has a fully operational launch vehicle to launch IRS class of remote sensing satellites into a polar sun-synchronous orbit. Mastery of rocket technology, establishment of a vast infrastructure for the development and testing of rocket motors, creation of a highly sophisticated modern launch pad and development of new materials, avionics systems, sophisticated inertial platforms and precision tracking radars has made India a significant player among the select group of major rocket launching countries of the world.

Development of GSLV maximally utilising the proven modules of he

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PSLV along with a 12 tonne cryogenic rocket motor was initiated in 1990 in order to achieve total self-reliance for launching 2.5 tonne class of INSAT satellite into a geostationary orbit. While the first few GSLV launches expected to begin in the next two years will use the cryogenic engines supplied by Russia, parallel developmental efforts initiated four years ago would ensure the availability of total indigenously developed cryogenic engines beyond 1999. Looking at the future requirements, efforts are on to develop 20 tonne cryogenic engines and more powerful solid as well as liquid rocket boosters for launching 4.5 tone class of satellites into geostationary transfer orbit. *Advanced technologies such as air breathing technology and full reusable systems are also under study to ensure ISRO will not lag behind other nations in the development of future low cost space transportation systems.*

Firm adherence to an organisational policy of maximally utilising the Indian industry in our space venture, has yielded highly encouraging results and has provided the confidence that this partnership will greatly expand in the year to come. The volume of orders placed by ISRO on Indian industries has from Rs. 100 million during the seventies to 1 billion during 1980-85, and to over 7 billion during 1985-90 period. In recent years mutual interdependence has been strengthened further with the award of specific developmental contracts on high calibre Indian industries for the realisation of complex systems and projects. About 250 technologies developed by ISRO have been transferred to industries throughout the country, almost all of which have entered gainful production. Indian industries, on their part, have now fully graduated from sub-system fabrication to engineering and fabrication of total systems including complete rocket stages, propellants, inertial sensors, test facilities and launch pads.

The multiplier impact of the diffusion of tasks, skills, technologies is already beginning to show. A vibrant and dynamic national space industry has emerged, cutting across the small, medium, large, private and public sectors. Many of the technologies transferred, which were originally developed for use within the Space programme, have now found new applications in the industrial mainstream, to ensure that the indirect benefits from the 'spin-offs' from Space technology now being woven into our national fabric will be of even greater significance to our society, as has been the experience in other advanced countries.

Considering the fact that almost 60 to 70 percent of the cost of any Space product is in value added services involving extensive engineering hours of design, engineering, testing and qualification, it was realised that ISRO can quite effectively compete in the international market for providing Space products and services. The establishment of an autonomous Antrix Corporation by the Government in 1992 is a major step taken to facilitate international marketing of our Space capabilities and expertise, the sales from which is expected to cross Rs. 5000 million with a clear profit of Rs. 1000 million during this plan period itself. Intensive efforts over the coming years can enable India to corner a fair share of the international Space market, conservatively estimated to 20 billion dollars/year.

The extremely well directed application driven Indian space programme with clear cut goals is undoubtedly the most outstanding success story of Indian Science and Technology in the post-independence era. With less than Rs. 7000 crore of total outlay during the last three decades, the country has succeeded in launching over 22 satellites including 5 operational geostationary and 3 operational remote sensing satellites of world class. It has been able to carry out more than 10 launches including 3 PSLV launches from its own space-port Sriharikota and establish a vast infrastructure for design, fabrication and testing of the space hard ware. It has been able to establish an efficient satellite tracking network and sophisticated multi satellite control stations, thus building a total self reliance in launch vehicle and satellite technology. A vibrant Indian industry capable of contributing space hardware has been created in the country in addition to developing centres of excellence in various academic institutions.

With the emphasis on the application of space technology for solving identified tasks of the nation, our national space effort has been able to initiate a total communication revolution in the country and provide an effective mechanism for the management of national natural resources. The initiation of Integrated Management of Sustainable Development across the country has for the first time provided an hope of providing food, economic and health security to its present as well as projected population on a sustainable basis. The revenue earned from the direct benefits from the application of space technology alone far exceed the expenditure incurred by the department. Above all our space programme has been able to create the technological wealth in the form of highly dedicated and expert technical man power of which the nation can be proud of. ❐

The author is Member, Space Commission.

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Higher Education In Free India

Dr. J.V. Vilanilam

Education should be looked upon as a national investment in the development of human resources. Educational development, however, must be based upon national priorities, national ethos and an international outlook, says the author.

PERHAPS with the exception of China, no other country in the world has got such a massive structure for higher education as India has. And the demand for education in India is expanding at an exponential rate because of the rapidly increasing population and the huge plans for socio-economic development launched by successive governments based on the principles of equality and social justice.

The magnitude of the growth of higher education in free India can be gauged better when we look at the status of education during the British period. Even as late as 1947, the number of students in colleges and universities could be counted in their thousands as against today's millions in the institutions of higher learning. The number today is about six million and it is likely to reach ten million by 2010 A.D. Whereas the number of the universities in India stood at 20 in 1947, the number today is 220 (including deemed-to-be universities), an eleven-fold increase in fifty years. No other country has witnessed such a phenomenal growth. But based on population and based on the type of educational system prevalent today, India needs at least a thousand universities and a hundred thousand colleges (as against today's 8000 odd-colleges). *The student population in the higher education sector alone in India is greater than the total population of Sweden or Switzerland or the Netherlands.*

Growth And Accountability

This problem of number ought to make our educational experts and planners think and act in a manner that is different from that in countries with small populations and high resources.

Education has to be looked upon as a national investment in human resources development. *The question of accountability needs very special attention from planners and funding agencies in India because the inputs are huge but the output is low.* State and central government agencies, planning boards, private and public management, philanthropists, students, teachers, administrative staff and the general public ought to be concerned about returns on investment, not only on monetary considerations but certainly on the scale of human resource development. Otherwise, all that is invested become wasteful. Moreover, the investment will not only not generate excellence but create mediocrity and even patently dangerous intellectual evil.

The question of quantity versus quality assumes national importance in contemporary India because of goals of education in pre-Independence India were different. *The British rulers did not finance higher education in any big manner but there was ample governmental policy support to individuals and trusts, religious and social groups for organizing, maintaining and developing colleges. The objectives of higher education during the British period were very limited and they mostly served the Macaulayan vision of creating "a class of people Indian in blood and colour but English in tastes, manners and intellect".* In other words, the educated class had to think British rather than Indian and cater to the economic and political needs of governance in a country where the large majority of the governed were culturally far removed from the governors.

For higher education, the British establish three universities in the big cities of Calcutta, Bombay and Madras which were the provincial capitals of three British provinces directly under the responsibility first of the East India Company and then of the British Crown. The three universities were established in 1857 after the model of the London University. The responsibility of expanding higher education was left with the colleges affiliated to these three universities. But there were only a few colleges affiliated to each university and they were run by private management.

The elite in pre-Independence India were exposed to the liberal traditions, legal principles and the history of democratic and egalitarian movements in the West, particularly Europe through the syllabi prescribed for higher education. The economic aspect of life in India, the political imperatives that led to suppression of democratic

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aspirations of the people and the large-scale drain of wealth from the country did not receive any attention in the syllabi. This resulted in the creation of a very huge number of educated young people who lost touch with the reality of Indian political, economic and social life, particularly in the rural areas.

Gandhian Vision of Education

During the early phase of the Independence Movement, leaders like Gokhale, Ranade, Naoroji and others tried to bring home to the Indian elite the illiberality of the so-called liberal education offered to the elite in the country. They, however, did not reach the masses, the downtrodden and the oppressed in rural areas who did not have any infrastructure to receive any kind of education. This resulted in mass illiteracy, ignorance, cultural backwardness and all the miseries associated with the lack of literacy and education. *In fact, nobody except Mahatma Gandhi advocated the education of the masses in a manner conducive to national development. Perhaps Gandhiji was the first in modern India to think of the enormity of the problem in a holistic manner and offer national solutions for the removal of ignorance, illiteracy and the lack of education.* One reason for the massive illiteracy, ignorance and cultural backwardness prevalent even today is this indifference (forced by education) among the educated elite of pre-and post-Independence India.

Gandhiji's vision of modern India was related to his ideas about education. Whatever Gandhiji said or did was relevant to the building of an India of his dreams because he had an integrated vision. Like Ivan Illich or Paulo Freire whom he anticipated by several decades, Gandhiji questioned the relevance of the colonial type of education for a free and independent India. "I would revolutionize college education and relate it to national necessities".

Even about industry-university interaction, job-degree delinking, privatization of education and such other vital topics that agitate the minds of modern educationists, Gandhiji had clear ideas. For example, he advocated self-supporting schools and industry-institution-supported colleges.

The revolutionary aspects of the Gandhian vision of education for New India were summarized by himself as follows:

i. For primary education extending for seven years, taken as a whole, a vocation or vocations are the best medium for all-round development of a boy a girl, and therefore all syllabus should be woven round vocational training.

ii. Higher education was to be left to private enterprise and it ought to meet national requirements 'whether in the various industries, technical arts, belles-letters or fine arts'.

iii. University charters should be given liberally to any body of persons of proved worth and integrity, it being always understood that the universities will not cost the State anything except that it will bear the cost of running a Central Education Department.

iv. Education should lead to the highest development of the mind but this development can take place only through a scientific cultivation of the faculties of the mind and body at various levels.

v. Education should make the educated aware of what is going on in their surroundings, and enable them to analyze and why's and the wherefore's of every thing in their immediate environment.

Gandhiji was not opposed to literacy training, physical exercises or religious instruction. But he opposed literary training without vocational training, physical exercises for body beautification purposes, and religious instruction of a narrow kind. His thrust was on vocationalization of education at school and college levels because he believed that true learning could be imparted only through DOING. Education for self-aggrandisement was, according to him, anti-social education. Only that which served society, especially the poorest of the poor, could be termed true education.

But while advocating vocationalization, Gandhiji opposed the evils of mechanization and repetitive and monotonous work.

"By working with the machines we have ourselves become machines and have lost all sense of art and handwork", Gandhiji said. He, however, said that in order "to develop the whole personality of the students, education through manual work is essential. The true development of the mind and the heart could be achieved only through manual labour. Thus Gandhiji questioned the usefulness of liberal arts education in a country where a very large number of young people remained unemployed after obtaining higher education. As a critic of the then existing educational system in India, he pointed out that it should be replaced by "a more constructive and human system, which (would) be better integrated with the needs and ideals of national life, and better able to meet its pressing demands".

Gandhiji ideas of education were tried by free India's government for a few years. The idea of BASIC EDUCATION (Nayi taalim) was tried in the rural setting for a short period in the mid-sixties but abandoned by the political decision makers responsible for educational matters. The old system of liberal arts education got all

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encouragement. Craft was discontinued at the school level. And no emphasis was given to vocationalization at the higher levels. We have thus created a huge army of unemployed, under-employed and unemployable graduates. And the acquisition of a degree has come to mean a passport to a clerical or other jobs unrelated to the education and training obtained at school/college. Sometimes even post-graduates go for employment as bus conductors, office clerks and other body jobs. A good many graduates do not go for any manual job or for self-employment.

The UGC's attempts to vocationalize are confined to the addition of a vocational course in the undergraduate programme. By merely adding a vocational subject to the list of subjects now taught at the B.A., B.Sc., B.Com. levels, the problem of non-employability of present day graduates cannot be solved to any great extent. Vocationalization has to start in school; it will help reduce the mad rush for college education in the liberal tradition and make young people more career-oriented even at a young age. Moreover, the UGC has to take steps for the introduction of the Credit-and-Semester System even at the under-graduate level for reasons explained below.

The Credit-And-Semester-System (CSS)

We in India have to re-structure education at all levels by introducing the credit and semester system which will offer the kind of flexibility and choice for students to opt for particular subjects. This freedom to choose from a list of course offerings will give students a chance to learn many optional subjects and achieve all-round knowledge essential for a fulfilling life.

The vast variety of courses offered at a college under the CSS will enable the students to choose whatever course units they really like. For example, those who graduate in physical sciences today do not have any exposure to the arts or humanities, social sciences or even natural sciences. The biggest drawback of our present system is that most college graduates are unconnected with the socio-economic realities in the country and the world. They are not even aware of the problems of their locality. Their books and their annual exams will be followed in a dull and mechanical fashion. The CSS will give that flexibility essential for making higher education more up-to-date and relevant. It will reduce the tendency among scholars to learn by rote for selective learning from an examination angle.

Today's higher education of India is wholly exam-centred—annual-exam-centred, whereas it ought to be divided into assimilable segments which are to be evaluated on a continuous basis. Instead of the annual system, we should have the semester (half-yearly) system. Instead of taking a vast area of knowledge, logical sections of the area should be offered as course units. The instruction and evaluation in a particular course unit should be completed in 14 or 15 weeks.

Each course unit is given credits depending on the number of hours of teaching; for example, a course that is taught for one hour a week for a semester of 14 or 15 weeks will be given a one-credit course. A student who completes the requirements of a course offering through one hour of instruction a week for a semester of 14 or 15 weeks will get one credit. Most courses are 3-credit course.

Both the course instructor and the student will be on their toes throughout the semester because the method of instruction is different from that in the annual/conventional system. Teachers are expected to guide the students to new knowledge through constant updating. The students cannot depend solely on textbooks, lecture notes or the ubiquitous "guides", or bazaar notes. In the CSS, the teachers are the guides and not commercial note-writers. Since knowledge is constantly expanding, the market notes are not of much use to the students. Students have to depend more on their own library search and interactions with the teachers in and out of classrooms and seminars with fellow students and guest lecturers. Unfortunately this system does not find much favour with the teachers in the present set-up.

Students get an opportunity to prove their worth by facing boldly what Jawaharlal Nehru called the 'adventure of ideas'. Gandhiji's hope that higher education should make them discover their own all-embracing personality can also be realized if colleges and all institutions of higher learning introduce the SCC.

But the biggest advantage is the freedom for the teachers to innovate and thereby help the students. The present system of teachers and students following a rigid three-subject and two-language pattern where instruction and evaluation do not go side by side has led to an insipid system of higher education. Teachers depend on an outmoded syllabus (as old as their own college days, perhaps!) and students do not have to read either at home or at the library and cut classes conveniently. (Even without such cutting, the average number of working days is below 100, certainly in Kerala, supposedly the most advanced state in India, educationally, as opposed to 200 or 180 days generally stipulated by the UGC and students can pass their annual exams.) If this is the case, why attend colleges? Why not depend solely on an outmoded exam system whose responsibility rests solely on

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the university—an anonymous exam-conducting body and nothing more? Precious working days are lost for strikes, bandhs, protests, sit-ins and what not? But working days, to be honest, are not working days but non-working days. There are undeclared holidays in addition to the large number of holidays declared by each State government in advance. Ours is a country that enjoys the largest number of holidays. Our young people are given the impression that they can become educated without any effort. Our teachers are setting a model for their young wards by coming to work late and leaving early. Where is the opportunity for them to sit in the library for at least an hour everyday to augment their own knowledge and thereby enhance the knowledge of their words. Are they endeavouring to transfer such newly acquired knowledge to their students?

It is very unfortunate that despite the tremendous growth in the number of colleges and universities in India, education that should conscientize the educated about their national socio-economic and political condition and help liberate the nation from the shackles of old systems and ways of thinking is still a dream. Neither universalization of primary education nor vocationalization of primary education nor vocationalization of higher education has been achieved. It is sad that large sums of money spent on education (whether it be 3% or 6% of GNP) are not helping anyone to draw out the best in the educated (literally education means such drawing out).

The very basis of Gandhiji's educational vision was his belief that manual work was equal to mental work. Dignity of labour was given a high place in his scheme. But what do we see today? the "educated" refuse to work with their hands. Those who have high degrees apply for lower level jobs and then refuse to work or offer unsatisfactory work.

Education introduced in the colonial period is still continuing in free India despite all the educational commissions and their recommendations. The Radhakrishnan Commission, the Kothari Commission, the Adiseshiah Commission, the Punnayya Commission and the host of UGC committees and special task forces have made many recommendations which, if implemented, would have raised the level of higher education. Unfortunately these recommendations were not implemented, although newer commissions and committees came into being. No structural changes were introduced and therefore the old systems continue even today with almost no basic change.

Need For Basic Changes

Is there a need for basic changes? Some people, educationists included, consider that basic changes are not necessary. They are satisfied with the existing system and their argument is that the higher education system introduced by the British has produced eminent men and women, leaders in all spheres of human activity. They forget that the system has been changed drastically and several aspects completely eliminated in the very country which introduced the modern system of education in India. *Change is the law of life and change we must if we want to make important strides in the world of education.*

Knowledge is always expanding and unless we change our rigid systems introduced long ago, we cannot bring any good to the country.

This does not mean that everything connected with Indian education right from ancient times should be discarded. The essential aspects of modern Western education could be found in the ancient Buddhist institutions that flourished in Nalanda, Takshila and Vikramshila. For example, Nalanda had a campus and a remarkable depository of information accessible to local and foreign scholars. There were three library buildings catering to 8500 resident students from India and the neighbouring countries and 1500 teachers from India; there were several dozen visiting scholars from abroad. With seven big auditoria and dozens of small halls where a hundred or more lectures were delivered every day by prominent teachers, Nalanda was the best institution of higher education in ancient South Asia (if not in the whole of Asia). Famous travellers to India from the outside world (like Huen Tsang, for example) have testified to the greatness of Nalanda. Even the modern concept of academic autonomy was prevalent in ancient Indian universities.

However, for socioeconomic and political reasons, the tradition of scholarship declined in India even among the upper castes who were custodians of learning. (The lower castes and the untouchables did not have access to education, not to speak of higher education). So when the famous (or infamous?) Minute of Macaulay (1835) led to the concretization of English education at the University level, the upper castes made good use of it and secured jobs in the revenue collection and law and order departments of the British government. The clamour among educated Indians was for privileges equal to those of the British.

When the three universities—Calcutta, Madras and Bombay—were established in 1857, 27 colleges were already in existence and these were affiliated to the three universities. The period between 1857 and 1947 saw

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very slow growth in the number of universities and colleges. At the time of Independence, there were, as mentioned earlier, 20 universities and 437 colleges and five institutions offering postgraduate courses in Engineering and 22 in Medicine. Today, there are 220 universities and about 8000 colleges. This unprecedented growth in higher education is the direct result of the rising expectations among people following the attainment of freedom from the foreign yoke.

The fact remains, however, that despite this phenomenal growth in higher education, all those who seek higher education cannot get it. The infrastructural facilities are not enough and those facilities that are available are not put to good use for socio-political, economic and cultural reasons. Very pertinent questions for which proper answers are yet to be found are:

1. Is higher education of the kind offered now adequate for the country?
2. Should all those who pass the high school go for higher education?
3. Does everyone who seek a job need a university degree? Can there not be a job-degree delinking?
4. Are all those who get higher education gainfully employed? If not, can we change the goals and contents of higher education?
5. Should there not be a total change in the structure of courses and course designing and also in the pattern of course choice? Should there not be flexibility in course offerings to cater to the individual goals and talents of young people? Should there not be an opportunity for young and old to receive higher education at their own pace so that they can fulfil their pressing economic obligations first and then return to college?
6. Can there be more opportunities for technical and vocational courses that will enable scholars not only to find employment but also to start their own business enterprises?
7. Is there a need for redesigning higher education to make it helpful in national integration and national development?
8. Does every college and University possess sufficient facilities for library and reading rooms, laboratories, computerized networking, physical education facilities (physical education should be made compulsory for all except for those who are medically advised against it) and laboratories?
9. Should the affiliation system as it is practised now be revised so that college administration, teaching, course designing and evaluation become more autonomous? Can there be genuine academic, administrative and financial decentralization in the management of universities and colleges?
10. What can we do to make universities and colleges more relevant to society and to the solution of socio-economic and development problems faced by the nation? How can university-interactions with industry, local administration and local people be strengthened and mutual exchanges of ideas made more frequent and effective?
11. Can we establish more informal and open systems of learning so that the economic burden of establishing new universities and colleges be reduced to the maximum extent possible?
12. Can the universities become real centres of learning and leadership/ so that the country benefits in a number of ways, especially in empowering women and the disadvantaged sections of the population without whose progress no real improvement in the national condition can be achieved?
13. What can education do to improve conditions of living in the rural areas—health, hygiene, environment, good preservation, literacy, employment, road facilities, water-ways, sports and cultural entertainment facilities, water supply systems, transport and communication? Is higher education relevant to rural life?
14. How can interactive, computerized systems of information and communication be utilized in finding solutions to all problems connected with the above questions?
15. Is there a need for re-structuring various bodies of the universities so that they will be more compact and there will be higher proportion of academics in them?

Answers to these questions will pave the way towards the full utilization of the educational facilities available at present and the establishment of newer and more effective facilities for the progress of the nation.

Conclusion

Quantitative growth there has been in Indian higher education; in fact, tremendous growth. But such growth is not only inadequate but patently dangerous. It has to be replaced by educational development based on national priorities, national ethos and an international outlook. We can achieve this goal only when there is genuine concern for the poor and the disadvantaged in society. ❐

The author is ex-Vice-Chancellor, University of Kerala, Thiruvananthapuram.

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Towards Gandhian Goals And Values

Prof. S.C. Gangal

Gandhiji's ideals and goals are relevant even today. Their sustained pursuit will surely add to the country's moral and material progress, says the author.

ON the fateful midnight of 14-15 August 1947, India awoke to freedom and had (to use Jawaharlal Nehru's stirring phrase) her "tryst with destiny". As the whole nation saluted the national tricolour, it also bowed its head, in reverence and deep gratitude, to the "Father of the Nation", Mahatma Gandhi. While it marked the happy culmination of the nonviolent struggle for freedom, it posed or pointed towards new tasks and challenges, like the adoption of a Constitution—providing for a democratic, secular, and decentralised political system—maintenance of national unity and communal harmony, economic development (especially the development of the rural economy) and scientific and industrial advancement, and the removal of discriminatory practices based on caste, creed or sex. It was a vast agenda—conforming largely to the programme of national reconstruction—evolved and adopted, from time to time, during the freedom struggle under Gandhiji's leadership and in keeping with the latter's vision and ideals.

Later, in a speech delivered at the historic Red Fort in Delhi, Nehru made a feeling reference to Gandhiji and his great mission. He stated. "Thirty years ago, there appeared on the Indian scene a mighty man of destiny (Mahatma Gandhi) who lighted our path. That light illumined our minds and hearts; and large numbers of our people, forgetting their own troubles and domestic difficulties, their family and property, responded to his call. It was not for personal gain of any kind. Among them there existed a friendly competition as to who could serve the motherland better and more effectively. The consuming obsession was the liberation of our country. Besides political freedom, we dreamed of freedom from poverty and distress".

That was an acknowledgment of the nation's deep debt of gratitude to Gandhiji and his dynamic leadership. But the point was to recollect and bear in mind the major aspects of his thought and programme of action and to undertake a binding obligation towards their implementation. To this end, the Constitution of India (adopted in November 1949 and put into force on 26 January 1950) incorporated some of Gandhiji's leading ideas on the nature of free India's polity and society, like parliamentary government, fundamental rights, secularism, village panchayats, abolition of the abhorrent practice of untouchability, decentralisation of power, communal harmony and the improvement of the status of women. Accordingly, these principles and norms found expression (and the nation's will and commitment to fulfil them) in the preamble of the Constitution, in the Chapter on Fundamental Rights and the Directive Principles of State Policy.

Deepest Concern

The removal of untouchability was one of Gandhiji's deepest concerns. In fact he said that if he had the choice, he would have liked to be born an untouchable. Thus, he wrote: "I do not want to be reborn. But if I have to be reborn, I should be born an untouchable, so that I may share their sorrows, sufferings and the affronts levelled at them... I therefore prayed that if I should be born again, I should do so... as an Atishudra". Again, "I was wedded to the work for the extinction of untouchability long before I was wedded to my wife... (Hence) if there was a choice between working for the untouchables and remaining with my wife, I would have preferred the first".

Twice in his public career, Gandhiji staked his life for the sake of the untouchables. In August 1933, Gandhiji undertook a fast (and refused all food) when the Government did not allow him to continue (inside jail) the Harijan uplift work. As his health was adversely affected from fasting, the Government released him unconditionally. Earlier, in August 1932, Gandhiji announced his resolve to undertake his Epic Fast—a "fast unto death"—to resist with his life the then British Government's decision to provide for separate electorate for the depressed classes (the untouchables). This British move was intended to isolate the untouchables

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from the mainstream of India's public life which would have eventually weakened them. The fact of the matter is that Gandhiji accorded the highest priority to the abolition of untouchability. In this context, it is notable that Article 17 of the Constitution says, "untouchability is abolished and its practice in any form is forbidden... (it) shall be an offence punishable in accordance with law". Since then it has been further amplified and legally implemented by an Act of Parliament, the Protection of Civil Rights Act, 1955 and complementary statutory provisions in the states. In practice, the scheduled caste people (or the untouchables of yesteryears) have, over the years, adorned high offices of State even as to many of them have had a notable presence in other realms of life. They are fully integrated into the social fabric of India. Manifestly free India (during the past fifty years) has marched forward towards the realisation of Gandhiji's dreams in the realm of abolition of the obnoxious practice of untouchability and the fuller emancipation and empowerment of the depressed classes. But this 'march past' must continue. For while it is comparatively easy to change laws and institutions, the personal prejudices and 'complexes' die hard.

Gram Swaraj

Like the question of the uplift of the depressed classes, Gandhiji was profoundly concerned about the village being the centerpiece of free India's political and socio-economic fabric. He was never weary of reminding his followers and India's future leaders and planners that India really lives in the villages and that "if the village perishes, India will perish too". He wanted India to present to the rest of the world the model of a predominantly village-oriented society, "Village Swaraj" (or Gram Swaraj), as he put it. Hence it is important to examine the extent to which free India (at fifty) has gone in realising the cherished Gandhian goal of village Swaraj or democratisation and empowerment of the people at the grassroots level, especially in rural India.

Indeed the question assumed great importance towards the close of 1945 when (as Gandhi's biographer D.G. Tendulkar puts it), "Swaraj was round the bend". Both Gandhiji and Jawaharlal Nehru— as well as the other senior Congress leaders— wanted the issue to be clarified—the issue regarding the high priorities of free India, especially the question as to what extent will the future (free) India will be village-based or rural-oriented. Always eager to resolve misconceptions and to speak out the truth (as he felt or saw it) at the earliest, Gandhiji himself took the initiative in clarifying his views on the questions around this time (October 1945). So he wrote to Jawaharlal Nehru: "I am convinced that if India is to attain true freedom, and through India the world also, then sooner or later the fact must be recognised that people will have to live in villages, not in towns, in huts, not in palaces. Crores of people will never be able to live in the palaces." However, he clarified: "My ideal village will contain intelligent human beings. They will not live in dirt and darkness like animals. Men and women will be free and able to hold their own against anyone in the world. There will be neither plague, nor cholera, nor small-pox; no one will be hungry; and no one will wallow in luxury... It is possible to envisage railways, post and telegraph and the like". Earlier (in 1942), Gandhiji had described the structure and institutions of governance under village swaraj as follows: "There will be a compulsory service of village guards who will be selected by rotation from the register maintained by the village Panchayat. The Government of the village will be conducted by the adult villagers, male and female, possessing minimum prescribed qualifications. They will have all the authority and jurisdiction required... the Panchayat will be the legislature, judiciary and executive combined to operate for its years of office. Here there is perfect democracy..." Indeed, Gandhiji was of the view that "independence must begin at the bottom. Thus every village will be a Republic or Panchayat with full powers... The villages will be the main repository of power".

Panchayati Raj

Manifestly with a view to initiating steps towards this Gandhian ideal, the Constitution makers inserted Article 40 in the Constitution: "The State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government". Indeed, the point was made in the Constituent Assembly that this Article in the Constitution might lead some day to true federalism when the panchayats (as envisaged in this Article) would develop into autonomous republics (with independent economic resources) and would serve as the foundation on which "a future Constitution of India as envisaged by Gandhiji) may be built".

To this end, three-tier panchayati raj institutions (PRIs) were first brought into being following the recommendations of the Balvantray Mehta Committee in 1957-58. The immediate motivation for the establishment of these institutions was the need to enlist fuller participation of the village people in rural development and reconstruction in the (then) ongoing community development and national extension

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service programme. Interestingly, the Mehta Committee had also recommended that large parts of the rural development schemes be assigned to the panchayats. Following this Central initiative, several states adopted panchayat laws in quick succession. Thus, as a recent expert survey report on the development of PRIs in India puts it, the "panchayats were made for the first time an integral institutional component of India's development administration". Those first generation PRIs flourished and grew in strength for about a decade (till the end of the sixties). But a phase of decline set in (due mainly to infra-structural inadequacies and bureaucratic hassles) in the early seventies. And by the end of the decade, these grassroots institutions tended to become largely dysfunctional. Several efforts to reinvigorate or revive the Panchayati Raj Institution did not bear much fruit.

A major new initiative to establish and effective framework of PRIs were undertaken toward the end of 1992, when the government mooted and submitted to Parliament the Seventy-Third Constitution (Amendment) Bill (CSTA). It is notable that the Minister of State for rural Development, while moving the Bill in Parliament (on 1 December 1992) stated that the underlying philosophy behind the Amendment was the "Gandhian concept of Gram Swaraj" and that it was the beginning of the nation's march towards "genuine democratic decentralisation" which, it may be noted, is a core concept in Gandhi's political philosophy. Also, the new programme was inaugurated on 2 October (Gandhiji's birthday)—coinciding with his 125th birthday celebrations. Moreover, it may be noted that the new (current) system is qualitatively different from the earlier experiments in Panchayati Raj... The CSTA added a new schedule—the Eleventh Schedule—to the Constitution which lists twenty nine subjects or functions to be exercised by the panchayats—including agriculture, small-scale industries, primary and secondary education, social and family welfare, public health and hospitals. In order to give credibility to the panchayat elections, a State Election Commission has been provided. Likewise, State Finance Commissions have been set up to ensure a measure of financial autonomy. And, last but not least, 33 per cent of the elected positions have been reserved for women. Thus, it can be stated that the PRIs, far from being merely subordinate or adhoc bodies, have been fully brought into the national mainstream—as co-partners in an extended, multi-tier federal structure. They now present a fair approximation to the Gandhian concept of the Gram Swaraj, which envisages the village institution as "the main repository" of national powers or authority. However, it marks just "one step"—though a big step at that—in the direction of village democracy. But that is quite in keeping with Gandhiji's favourite dictum, "One step enough" at a time. Empowerment and democratisation of the villages was among the most cherished ideals or political goals for Gandhiji. And India today is well on the road to its large-scale fulfilment, i.e., to the maximum extent possible under the present circumstances and cultural, educational and financial constraints.

Communal Harmony

Apart from the abolition of the curse of untouchability—coupled with a determination to bring the Depressed Classes in to the national mainstream—and the ideal of Gram Swaraj and the regeneration of India's villages, two other major concerns of Gandhiji were: communal harmony and women's rights and status in society and politics. His historic peace mission in Noakhali (shortly before Independence), his fasts in Calcutta (in 1946) and in Delhi (in January 1948) show the depth of his concern for communal harmony. To this end, he was also firmly of the view that "the State has to be wholly secular". Needless to say that the principle of secularism has been incorporated into the very Preamble of the Constitution. Communal harmony has been high on the national agenda from the time of Independence to this day. It is hoped that—with wide-ranging national commitment and constant vigilance—even occasional disturbances would be a thing of the past.

Women's Empowerment

In the matter of women's advance and empowerment, legal equality of the sexes has characterised India's society and political system from the very beginning. Of late, 33 per cent reservation for women in local self-government is a major step forward in this area. In several states, substantial incentives to promote female literacy and education, recent anti-dowry measures and liberal job reservations are seen as notable advances in the realm of women's parity and equality of opportunities which will enable them to play their due role in social, cultural and political realms as Gandhiji fervently hoped and called for.

Gandhiji's ideals and goals are like a reference point—relevant not only for India but for entire humanity. Their sustained pursuit will not only add to India's moral and material progress at home but will also enhance its democratic and human rights credentials in the wider comity of nations. ❐

The author is former Director, Gandhian Studies Programme, JNU, New Delhi.

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Indian Democracy
The First Fifty Years

K.G. Joglekar

The Indian Constitution is a remarkable document as it strikes a balance between tradition and modernity, between a federal structure and a strong centre and between the demands of social justice and the rights of the individual. However, as we enter the 50th year of our Independence, perhaps it would be desirable to take a close second look at the Constitution with a view to removing possible distortions and streamlining its functioning, feels the author.

DEMOCRACY is often described as government of the people, by the people and for the people. The Constitution, written as in the United States and other countries or unwritten but dependent on tradition as in the United Kingdom, lays down the framework for this form of government. But written or unwritten, there is a remarkable similarity between the two. In the United Kingdom the centre of power shifted first from the Crown to the nobles and then to the House of Commons. In the United States, judicial pronouncements have changed the complexion of the government. The federal Government has far more powers than was envisaged at first. All this was achieved by a process of evolution either by consensus as in the U.K. or by judicial pronouncements as in the USA. Each challenge was met as it came up and a solution was found.

India became independent on August 15,1947 and the Founding Fathers worked post haste to give the nation a new Constitution. The constitution was adopted by the Constituent Assembly on November 26, 1949 and came into force on January 26,1950. It was a remarkable achievement because many countries which became independent along with India were still floundering and trying to find their way in framing the Constitution. Countries, which became independent later, were looking at India's efforts. The Indian Constitution is a remarkable document as it strikes a balance between tradition and modernity, between a federal structure and strong centre, between the demands of social justice and the rights of the individual and between conflicting demands in other areas.

Though the Founding Fathers were proud of the Constitution they had framed, they were also aware of their own limitations. As people move into a new house, they notice defects which had escaped the architect. Also, changes become necessary because conditions change and needs grow. Similarly, defects come to light as a Constitution comes into operation. Changes therefore become necessary and have to be made quickly and easily. As Dr. B.R. Ambedkar, the Law Minister, said on the day the Constitution was adopted, "The Assembly has not only refrained from putting a seal of finality and infallibility upon the Constitution by denying the people the right to amend the Constitution or making the amendment of the Constitution subject to the fulfilment of extraordinary terms and conditions, as in America or in Australia but has provided a more facile procedure for amending the Constitution". The President of the Constituent Assembly Dr. Rajendra Prasad observed "another important feature of the Constitution is that it enables amendments to be made without much difficulty".

Prime Minister Jawaharlal Nehru was even more forthright. Speaking on the first amendment made in 1951 he said, "People must realise that this great Constitution of ours, which we laboured for so long, is not a final or rigid thing which must either be accepted or broken. A Constitution which is responsive to the peoples' will, which is responsive to their ideas, in that it can be revised here and there, they will respect it all the more and they will not fight against it. Otherwise if you make them feel that it is unchangeable and cannot be touched the only thing that can be done by

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people who wish to change it, is to try and break it. That is a dangerous thing and a bad thing. Therefore it is a desirable and a good thing for people to realise that this very fine Constitution which we have fashioned is good in so far as it goes but as society changes, as conditions change, we mend it in the proper way".

The members of the Constituent Assembly were conscious that they had been elected by members of the Provincial Assemblies who had themselves been elected on a limited franchise. How could they put restrictions on the House of the People which was to be set up on the principle of universal adult franchise? The leaders were also aware that in the years to come, conditions would change, new demands would be made and met and it would be the duty of the new rulers to meet the challenges as they came up. It was therefore that they left the way open for easy amendments without going through the arduous process of forming a new Constituent Assembly.

Events proved that the Founding Fathers of the Constitution showed robust common sense when they decided that the process of amending the Constitution should be easy. The first amendment was made in 1951 to make it possible among other things to carry out land reforms and abolish the zamindaris. Also, it was decided that reasonable restrictions could be placed on the exercise of Fundamental Rights in the interests of society. Since then, the Constitution has been amended more than 75 times. Most of these amendments were made to remove difficulties in the working of the Constitution, but others like the one about Panchayati Raj and Municipalities gave an entirely new dimension to administration by devolution of powers to local self-government bodies. The amendment about reservation for women in legislative bodies will add one more dimension to the Constitution.

The result is that the Constitution today resembles an ancient edifice to which additions and modifications have been made from time to time to suit the needs but in the process, the character of the original structure has been changed beyond recognition. Some of the provisions of the Constitution like introducing prohibition or banning cow slaughter have been found to be impossible to implement. Others like drafting a Common Civil Code have met with stiff opposition from sections of society. Similarly many of the Directive Principles of State Policy have been reduced to mere expression of pious intentions.

The Constituent Assembly utilised the period between August 15,1947 and November 26,1949 to draft the Constitution which came into force on January 26,1950. On August 15 1997 India completes fifty years of Independence. It will be in the fitness of things if the task of taking a second look at the Constitution is attempted so as to remove the cobwebs and to streamline the working. A Committee of Parliament can undertake the job with inputs from politicians, experts in constitutional law, academics and journalists. The changes can be made by the time the nation celebrates the 50th anniversary of the enforcement of the Constitution and the establishment of the Indian Republic.

Politicians will try to shy away from the task on the ground that it will mean opening a Pandora's box, which it will certainly be. The States will demand more powers even autonomy, while some will ask for more powers for the Centre. Conflicting claims and demands will be made. Should we have directive Principles of State Policy which cannot be enforced in a Court of Law? All these and more will have to be looked into.

But there are some problems which cannot be pushed under the carpet any more. When the Constitution was framed, the Assembly had to a large extent placed before itself the Westminster form of Government. In such a form of government, two political parties vie for power. There is a general agreement on basic problems and policies. The Founding Fathers had possibly hoped that in course of time in India also, two rival parties would emerge. But this has not happened. We have a plethora of political parties. Three successive elections to the Lok Sabha did not give any political party a clear majority. Even when a political party has the majority, its leader is always worried about keeping his flock together. Policies are often framed not so much for national good but for narrow political ends.

But what is the remedy if the electorate does not give a clear verdict in election after election? The Constitution has no provision for direct rule by the President at the Centre because this might result in subversion of democracy and the establishment of a dictatorship. At the State level, the Constitution provides for imposition of President's rule. Dr. Ambedkar had expressed the hope that this provision might never be used. Events have proved otherwise and in the last 47 years, it has been used more than 100 times. There is justification for doing so when separatist forces and militancy pose threat to democracy as in Punjab, Jammu & Kashmir and Assam but no justification when it is used for political purposes.

But what is the way out at the Centre or in the States if no party gets

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a clear majority in election after election? A poor country can ill afford the luxury of election after election without a verdict in favour of any single party. Students and scholars of political science and leaders of political parties have been worried about this for a long time. Even during the days of Mrs. Indira Gandhi a suggestion was made that India should go in for a presidential form of government. The former Union Minister and senior parliamentarian Mr. Vasant Sathe has long been advocating this and has also said that this change can be made with a few changes in the Constitution.

There is another area where the distortion is worsening every day. Under the original scheme of things, a population of $7^1/_2$ lakh elected a member of the Lok Sabha. The first Lok Sabha thus had 489 elected members. The Constitution also provided that the number of seats would go up according to the figures of population in the previous census. The seats went up to 545 by 1976. But it was felt that the increase gave an unfair advantage to the States which did not take up the family planning programme in earnest. Therefore, the number of seats in the Lok Sabha and in the Assemblies was frozen at the figures of 1976. By an amendment of the Constitution it was decided that the readjustment of seats on the basis of population would be made only after the figures of the first census after the year 2000 were published. The next Lok Sabha election would be held in 2001 which is also the year in which the next census will be held. By then the figures of the census are not likely to be available. But a serious thought will have to be given now to the question of the ratio between the population and the number of seats in the Lok Sabha and the State Assemblies. If the original scheme of one Lok Sabha member for every 7.50 lakh population were to be followed the Lok Sabha today should have a membership of more than 1300. By the turn of the century the population of India is likely to go up to 100 crore and the membership of the Lok Sabha would have to be more than 1400. The Uttar Pradesh Assembly would similiarly have a strength of 800 today. It will be impossible to manage such a large House.

But then if this is not done, the Lok Sabha constituencies would be so large in terms of population that it will be impossible for a candidate to contact the voters and for the M.P. to maintain contacts with his constituency. Outer Delhi today has an electorate of nearly 30 lakh. Thane in Maharashtra comes a close second with an electorate of 26 lakh. It is well nigh impossible for anyone to claim that he can look after the interests of such a large electorate much less to visit the distant areas regularly. Many constituencies of the U.P. Assembly today have the same electorate as the Lok Sabha had in 1952. A fresh delimitation can only solve the problem partially. What is needed is a fresh look and a new initiative.

Under the present system the candidate who gets the largest number of votes is declared elected. Frequently the combined votes of the other candidates are more than his votes. It has also happened that a political party might get a majority of the votes polled but still not get a majority of the seats. A swing of a mere 5 per cent can make a tremendous difference. Any review of the Constitution must look at this anomaly and find ways to remove it.

A switch over to the Presidential Form of Government will be a far reaching change which can only be made after a nationwide debate. But the immediate problems of the electoral system need to be examined quickly. A 'hung' Lok Sabha or State Assembly leads to defections and politics of expediency and negates democracy. We have to find an answer to it. Introduction of proportional representation is not practical in a large country like India. But should we then have a system of direct election for half the seats and proportional representation for the other half? This experiment has been tried succesfully in Japan.

Another area for attention is the role of the Rajya Sabha and the Legislative Councils in some States. These were envisaged as chambers of revision but over the years have largely become chambers where the work is mostly duplicated. Our Rajya Sabha is neither as powerful as the Senate in the USA nor powerless as the House of Lords in the U.K. Its powers and functioning deserve a close second look. Unlike the Lok Sabha , the Rajya Sabha is supposed to represent the States. It has therefore been laid down that its members should be normally resident in the State from which they are elected. But more and more instances come up where a member is elected from a State where he does not live. It is easy to look at this as a technical violation of the Constitution. But another aspect is often overlooked. States like Punjab and Jammu & Kashmir were for long years been under President's rule and the Legislative Assemblies had been dissolved and could not elect members to the Rajya Sabha. Elections to the Lok Sabha were also not held there. Should the people of these States be denied the right of representation at both the Central and State levels for no fault of their own? Election to the Rajya Sabha from another state might not be strictly according to the letter of the Constitution but it at least gives a politician from such a State to put

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India And World Peace

Sunil C. Roy

Right from the beginning as a free nation, India has chosen the path of non-alignment to ensure global peace. India gave the world a new concept of governance based on the principle of "Panchasheel" and also played a major role as a peacekeeper under the aegis of the United Nations.

IN the formulation of foreign policy of any nation, the determining principle is its long-term goal. A large degree of flexibility and predictability is its final reliance and resource.

India's foreign policy, in this broad perspective, has been guided by its commitment to world peace. It is little wonder that India should choose the path of non-alignment right from the beginning as a free nation since 1947.

While assessing India's contribution to world peace over the past half a century, I have chosen to concentrate on the principal pillars on which rest the edifice of foreign policy that has stood the scrutiny of the Indian people. Indian domestic policy has been the subject of intense debate by diverse political entities but the foreign policy has almost enjoyed a monopoly of public opinion based on the principle of consensus.

In the order of importance, Indian policy on nuclear-free world and elimination of nuclear weapons aimed at achieving a comprehensive disarmament within a time-frame has been widely acclaimed all the world over.

It is an unequal world in which we live, and also a world in which political expediency is placed above morality. The 15th century born Italian statesman and political philosopher Machiavelli may have died his physical death in 1527. But his spirit lives on and his doctrine of statecraft in dealing with foreign relations still is a guiding star for many nations.

The latest battle that India fought was on the issue of Comprehensive Test Ban Treaty (CTBT) at Geneva and New York. Almost single-handed India put up a lone fight against virtually the rest of the world with the exception of a few likeminded countries. It looked like an instance of being stonewalled by representatives of countries led by nuclear-haves both at the United Nations and at the Conference on Disarmament in Geneva.

Even when it was known that India under no circumstances would agree to the CTBT draft, rest of the delegates representing their respective countries listened to India's point of view with bated breath. Till the last moment India stubbornly stuck to its policy decision that there was no in-between position on total nuclear disarmament.

Critics of India accused it of being inflexible, and the main charge against New Delhi was that it lacked realism in asking for disarmament under a time bound programme. Instead, experts argued that a time-frame of 10 years was realistic. Between now and the end of cold war with the collapse of the Soviet Union in 1991, the global nuclear arsenal has come down to half. Interestingly, the former Soviet President Mikhail Gorbachev's last call for total elimination of nuclear weapons had also set a time limit for 10 to 12 years. In the early nineties nuclear warheads were put at 57,000. This means that more than 28,000 nuclear weapons are still in the possession of nuclear weapon states.

While advocating a step-by-step approach to eliminate nuclear weapons, none of the states possessing them has ever wished to take the first step and make any firm commitment for their elimination.

Among the five permanent Security Council members, China is the only Asian nuclear weapon state. In his analysis of India and the CTBT, Director of Institute for Defence Studies Analyses Jasjit Singh said in the Institute's September 1996 issue, "there are major uncertainties about the future strategic scenario (in Sino-Indian relations)."

Jasjit Singh says: "it needs to be recalled that China carried out a nuclear test within hours of giving a commitment (during the NPT extension conference in 1995) that required the utmost restraint in carrying out nuclear explosions. It has continued to test since then at sites less than 1,000 kilometres from India. According to reports, the US Defence Secretary stated that China has been providing nuclear weapon technology to Pakistan in the recent past."

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The world knows that India's concern about nuclear proliferation relates to China possessing a nuclear arsenal. That China's sole objective was to become a nuclear weapon state is evident from the fact that China neglected the peaceful use of nuclear energy until late eighties. Ten years after China had experimented with its first successful nuclear test in 1964, India entered the nuclear scene for the first time in 1974 and there it has ended. Besides, Pakistan has a clandestine nuclear programme fully assisted by Chinese technology. For the first time, China publicly asserted that India must ratify the CTBT. A conclusion is inescapable that those who wanted India to ratify the CTBT would have liked to see that India's security interests are mortgaged to other countries.

The kingpin of India's foreign policy has broadly been dictated by a principle of equidistance from the Superpower rivalry until the dissolution of the Soviet Union. In any assessment of India's role to ensure global peace, non-aligned movement played an important part. Although the movement never functioned on any bloc concept, it became the voice of vast multitudes of people spanning four continents belonging to the developing world.

The non-aligned movement was launched in Belgrade in 1961. Eminent statesmen who pioneered the movement were Prime Minister Jawaharlal Nehru, President Tito of Yugoslavia and President Gamel Nasser of Egypt. The movement which had only a handful of members initially later grew into a formidable number. The current chairmanship of Colombia, once believed to be an American ally in Latin America, is a clear proof that the movement's appeal was spreading to South America, usually considered as "backyard" of US sphere of influence.

The disappearance of the Soviet Union brought an end to Superpower rivalry. It had its effect on the non-aligned movement. Except the coordinating bureau of non-aligned countries at the United Nations, the movement never thought it appropriate to have a headquarters. This never gave rise to absence of cohesion in the movement's functioning. In contrast, the Organisation of African Unity (OAU) has its headquarters in Addis Ababa, while the Arab League is located in Cairo.

Non-aligned movement could have been more powerful as a political force at international level had China preferred to join it. Mao Zedong divided the world into "three worlds" according to the level of economic development. Surely, China fitted in with the concept of "third world", embracing the developing countries. But at no point of time since 1961 China expressed the desire to be part of non-aligned movement, although China rightly belongs to the developing world.

India's third contribution to world peace came from its unremitting support to the anti-apartheid movement in South Africa and its support to decolonisation. New Delhi never gave up the cause of the black South Africans and the Black Africans in the rest of the continent, despite repression on their movement and denial of basic human rights by the colonising powers. One after the other, the French, Portuguese and Dutch colonisers left territories ruled by them. But South Africans were yet to see the light at the end of the tunnel.

The paths to peace and freedom and equal rights were strewn with thorns and hurdles were placed at all steps. The White rule became a blot on the world conscience. Denial to right to live brought an upsurge among the Black South Africans. In their struggle, they found India and the Indians settled there as a great source of inspiration. It was not because Mahatma Gandhi's association with South Africa in the initial years of his political life that made India so receptive to the aspirations of the Black South Africans.

Perhaps in the South African freedom movement and struggle for equality was seen the same psyche of the Indian people who suffered humiliation, imprisonment and torture in India during the long independence struggle. Indians felt genuinely for the Black South Africans. So did the government.

In less than a decade's existence as an independent nation, India brought before the world a new concept of governance based on the principle of "Panchsheel". It was but natural for a country that has a long tradition of tolerance. India with numerous languages and multiplicity of religion itself symbolises co-existence. Mutual respect for each other, irrespective of differences, demonstrates Indian ethos.

It is in this context, the Bandung conference in April 1955 that adopted "Panchsheel" created a new concept for the world already handed over to violence and turmoil. The Bandung conference had five proponents: India, Indonesia, Burma, Sri Lanka and Pakistan. The Bandung conference was preceded by the bombing of the Air India plane carrying delegates and journalists over South China sea. Evidently, forces that wanted the settlement of disputes through terrorism asserted their right to show their way of solving issue and problems.

India as a peace loving nation made its mark as a peacekeeper under the leadership of the United Nations. Peacekeeper's role came to India primarily because of its sense of fairness, coupled with the Indian

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armed forces' record of efficient functioning in warlike situations. More than that, Nehru's approach usually proceeded on the assumption that peace cannot be promoted by creating positions of strength. On the contrary, the creation of positions of strength might become a threat to peace—for every party will try to increase naturally its strength vis-a-vis its competitors for power, and such an attempt is bound to be counterproductive, apart from being suicidal. It was Nehru's considered view that a deliberate policy of ffiendship with other countries goes further in gaining security than almost anything else. But in his Lifetime China proved it wrong when it attacked India in 1962.

India was involved in the Korean crisis within a few months of gaining Independence. After the Korean issue was brought before the United Nations in 1947, K.P.S. Menon was designated as the chairman of the first United Nations Temporary Commission on Korea. Ever since India was connected with the deliberations concerning the Korean peninsula, gearing its efforts towards reuniting the two halves of the nation. Unfortunately, even after 50 years the situation in Korea remains the same as before. It became a victim of cold war situation with foreign forces still operating on the South Korean soil.

In 1948, India once again headed the second United Nations Commission on Korea. As war broke out in Korea in June 1950, India's involvement was not confined only to the four corners of the U.N. Subsequently, India was selected to be the chairman of the Neutral Nations Repatriation Commission that supervised the return of the prisoners of war to their respective countries. India devised a formula to solve the repatriation problem.

India's resolution at the General Assembly in the United nations formed the basis of the Armistice Agreement on December 3, 1952. When cease-fire was effected in Korea, the Custodian Force of India (CFI) took over the work of repatriation of POWs. In his report, Major General S.P.P. Throat has said force was not used for the purpose of taking out prisoners of war for explanations, while the CFI found that more than 90 per cent of the prisoners were anti-communist. Only 4 per cent of POWs were pro-communist.

Over the past 35 years, India was called upon by the United Nations on many occasions to undertake peacekeeping work in various parts of the world. The most important among them may be mentioned as India's peacekeeping role in Gaza after the Arab-Israel war in 1967 and in the Congo operations. Between 1948 and June 30, 1994, over 650,000 military personnel have served in the UN peacekeeping force. From the average of 300 million dollars expenditure on peacekeeping, it went up to 640 million in 1989. In 1994, the budget peaked to 3.8 billion dollars.

Indian forces found their active role in restoring peace in Cambodia, Mozambique and Somalia. In all these operations, Indian forces acquitted themselves creditably.

There is no doubt that India will continue to play an important role in the UN peacekeeping in the future. For an enhanced and effective role, India needs to set up a necessary organisation which could be set in motion quickly. Given the emerging world order, instability and conflict will be a recurring phenomenon in the decades to come. ❐

The author is a veteran journalist.

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forward the views of the people and to air their grievances.

It is well known that militancy in Punjab was limited to a few districts and in Jammu & Kashmir to the Kashmir Valley. But since the Assembly had been dissolved and the State placed under Central rule, areas where there was comparative peace could also not go to the polls even for the Lok Sabha. They were penalised for no faults of theirs. Any review of the Constitution has to consider this question and find a solution.

It is to the credit of India that while other countries which became independent along with her have had long periods of dictatorship or military rule, democracy has continued to grow in India. The Indian voter has been no respecter of men and has not hesitated to throw out powerful leaders if he found that they were not performing well. The base has widened with the devolution of powers to the local self-governing bodies. The proposal to reserve seats for women in legislative bodies is proof of the fact that political parties forget their differences on giving greater powers to the neglected segments of society. Changes have been made in the Constitution to keep pace with the times.

As India enters the 50th year of her Independence it is time to do a soul-searching and to examine whether the Constitution needs a close second look so as to remove the cobwebs and to remove the distortions and discrepancies. ❐

The author is a veteran journalist.

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Our Defence Preparedness

A.K. Chakraborty

The Indian Armed Forces have many outstanding achievements to their credit. However, as war or any external threat requires total mobilisation in a democracy, maximum transparency alone can ensure cooperation on the part of the people in all respects, says the author.

INDEPENDENT India was born in the midst of hostilities in Jammu and Kashmir. The holocaust that followed the partition of the country, the migration of people and the sudden attack by Pakistan in Kashmir valley in October, 1947 created a feeling of insecurity among the people. The armed forces left behind by the Britishers and the infrastructure then available however proved adequate enough to repulse the Pakistani mischief.

Subsequently, the easy manner in which we secured the integration of Junagarh (1947), Hyderabad (1948) and Goa (1961) brought in an element of overconfidence. Truely speaking, we were lost in an attitude of complacency believing in the good intentions of our neighbours, particularly China.

The rude shock delivered by China in Oct, 1962 made the leaders at the helm of affairs realise the need for an all weather Army, Navy and Air Force. Fear and insecurity had then gripped the people and some had even doubted our capability to protect the territorial integrity of the country. People in the North-East, for a moment, felt they were left to fend for themselves. In the background of these developments, one can say that planning for defence preparedness had its beginning after the humiliating Chinese invasion in the North-East.

Thanks to the assistance extended by the then Soviet Union in the development of our Air Force, Navy and Army, besides the help provided by the United Kingdom and France for expansion and modernisation of sea and air elements, we were able to check a renewed Pakistani onslaught in Jammu and Kashmir and Rann of Kutch in Gujarat in 1965. Pakistan was well and truely beaten and the Tashkent Peace Accord held good till 1971.

Gradual Build Up

Meanwhile, all the three defence services were gradually building up their strength in terms of armour, aircraft carrier, submarines and air defence fighters. Thus when in 1971, after Sheikh Mujibur Rehman gave a call for a mass freedom struggle on March, 26 in Dacca, the Indian armed forces were definitely in a position of superiority to take on the challenge to protect millions of refugees as well as the borders.

During the last 25 years, defence preparedness, as linked to Policy Planning, has been on an ad-hoc basis, if not in fits and starts. No doubt, there has been the acquisition of the T-72M tanks and the BMP series covering the Infantry Combat Vehicle and the Bofors 155 MM field howitzers. The Navy has gained in the acquisition of the Kilo class submarines, the aircraft carrier Viraat and the West German Hunter Killer class submarines.

The Air force has been steadily strengthened with the induction of the Jaguars, MIG-21, MIG-25, MIG-23, 27 and 29. The Mirage 2000, the AN-32 and the IL-76 long haul transports have also added punch to the Air Force. But this by no means reflects a long term defence policy planning since all these acquisitions virtually came long after the requirements were made known, resulting in heavy cost escalations.

And some of them were clouded in controversies. As a result of which for nearly a decade all procurements came to a halt despite urgent needs being repeatedly highlighted by the Armed Forces.

The Army

As for the Army, the project plans centred around the 155 mm Bofors guns were completely neutralised for reasons well known. In the process the ambitious programme of manufacturing about 1000 field Howitzers aided by technology transfer from Sweden for manufacture of ammunition got stalled. Worse still the Army's urgent requirements of the self-propelled guns of the same calibre got stuck up.

In Spite of the tumult over its acquisition, the 400 odd Swedish Howitzers played a decisive role in both the north-west as well as the

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Both government and shipyards have to be congratulated for additions, especially in the field of Corvettes, Missile Boats and Submarines, two of which were built at Mazagon Docks, Bombay.

north-east borders. Pakistan's repeated attempts to gain a foothold in the Siachen Glacier were foiled by the Army's timely deployment and effective use of the Bofors guns.

So too, in the eastern sector, the advent of the 155 mm guns and their potential for long range bombardment in the Himalayan heights put the Chinese in check and there were no more intrusions like the one in Arunachal Pradesh in the late 80's.

It would not be out of place to mention that the Indian Army has been involved in the arduous task of neutralising insurgencies in the entire North-East during the last 50 years. Neighbouring countries like China, Burma and the then East Pakistan (Bangaldesh) evinced more than usual interest in provoking various insurgent and ethnic groups in a bid to destabilise the country and bleed our defence forces.

The Indian Army nonetheless tackled the situation with minimum force required and to a large extent has succeeded in winning the sympathy of the people through various aid to civilian population. More than two division of troops had to be deployed and kept on alert to foil underground insurgencies aided and abetted by hostile countries. In fact, this became part of our defence preparedness plans and specialised units and training centres had to be raised.

To relieve the troops from being locked in such insurgency situations and policing roles, the Rashtriya Rifles has been established. Forty Batallions have now taken up positions in such conflict situations. The Army will concentrate on its primary role to keep fit and trained to face any eventuality from across the borders. In addition, the BSF and Assam Rifles are there to assist the armed forces.

The Navy

Although the Navy has been slightly better off with its own naval design Bureau and a home shipping industry, the lack of funds has slowed down the pace of construction of new warships. On this score one cannot fault the Navy for lack of planning. It is more in the sphere of implementation. Yet both government and shipyards have to be congratulated for additions, especially in the field of Corvettes, Missile Boats and Submarine, two of which were built at Mazagon Docks, Bombay. There is an ongoing project for the construction of three destoyers of 6000 tonnes each beginning with the Delhi, Mysore and Mumbai. Three advanced and modified versions of the Godavari class are under construction at the Garden Reach Workshop, Calcutta and the first 'Brahmaputra' has already been launched.

The demand is there for more subs, both of the Kilo and the German Hunter class but government is yet to take a decision. Fortunately the cash crunch has not affected the progressive addition of Sea Harriers with the Navy but they require an additional platform in time, since Vikrant has already been virtually decommissioned. The life of aircraft carrier Viraat is also getting shorter by the years. Fortunately, both the nodel Ministry and the Navy is in the process of acquiring a sea control ship, possibly from Russia. As a long term option, India of course has the potential to build its own Aircraft Carrier at Cochin shipyard.

The Navy with its spreading blue water capability has no doubt created an impact on neighbouring countries, especially in the East and even caused a sense of alarm in far away Australia which has however with the passage of time been convinced that India has no expansionist intentions except to guard its coastline particularly its Exclusive Economic Zone and Oil Installations on the high seas.

The Indian Navy has also raised the 'Marine Commando Force', a specialised unit which can operate in various under water and off-shore areas. India is the second country after the USA to build up this highly mobile and potent naval commando force. During the operations in Sri Lanka, the Marine Commando Force won laurels and proved its worth as a deterrent to the enemy.

The Air Force

The maintsay of the Air Force has been the MIG fleet ranging from MIG-

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21 to MIG-29, supplemented by the Jaguars and the Mirage-2000. It goes to the credit of the Air Force that it showed its capabilities in combined operations first in 1971 and some 20 years later in the Maldives. In 1971, the Air Force was ready to take on the task of dropping a para batallion over Tangail to deliver a deadly psychological blow that hastened the surrender of Pakistani forces in Bangaldesh. Such airborne operations had become imperative due to a threat posed by an American Carrier group heading towards Chittagong. It would not be out of place to mention that the press played the role of a force multiplier. A foreign news agency reported that a para brigade had been dropped on the outskirts of Dacca and that did the trick.

More outstanding was the reflex action response of the Air Force in fulfilling the requirement of the Maldives President Abdul Gayoom in meeting a coup attempt by foreign mercenaries against his democratically elected government. In less than six hours, the Air Force with its giant IL-76 had landed Indian troops in and around Male, the Maldivian Capital and foiled the coup attempt.

But more outstanding was the reflex action response of the Air Force in fulfilling the requirement of the maldives President Abdul Gayoom in meeting a coup attempt by foreign mercenaries against his democratically elected government. In less than six hours, the Air Force with its giant IL-76 had landed Indian troops in and around Male, the Maldivian Capital and foiled the coup attempt. In this operation, the Air Force displayed its combat and communication capabilities across the Indian ocean and this was indeed an eye opener for Western Powers. Not only this, it was a snub for Pakistan as its offer for help was rejected by the Maldivian President.

Fortunately, for the Air Force, it has also a large manufacturing and overhauling base with rich experience in the production and maintenance of almost the entire MIG fleet and Jaguars. It is against this background that these facilities will not only be upgraded but considerably augmented by the project for modernisation of the MIG-21 BIS fleet of 125 fighters. Two prototypes of the upgraded MIG-21 BIS are expected shortly and the HAL will undertake the fabrication of the updated versions. This programme is expected to be completed in less than two years and should amply make up for repeated delays in the LCA project. The air defence of the country would be well secured with the new look MIG-21 BIS fleet, which will be equipped with four times higher fire power against ground targets and would be an even match for F-16 in service with Pak Air Force.

The acquisition of the Sukhoi-30 culminates a long wait by the Air Force, which had spelt out its requirements for this multi-role air superiority fighter far back in 1990. For the first time perhaps India has gone for a new weapon system not merely based on the Pakistan syndrome but with much wider perspective that will cover portions of China, Myanmar and South-East Asia. In addition, the regional security requirements will be amply met by the longer range and sweep of the Sukhois which could neutralise any hostile activity emanating from countries in the neighbourhood like Iran, Afghanistan and even possibly Central Asian States. It will be pertinent to point out in this context that Sukhois will have mid air refuelling capability. India has signed a contract with Russia for 40 Sukhois and significantly this includes the transfer of technology and indigenous manufacture of this multi-role fighter planes. For the first time the Russion agencies have agreed to permit DRDO to participate in R & D and joint development of avionics of the aircraft.

Great Achievements

In talking of operational capability, one must remember with pride, the magnificent contribution by our network of Ordnance Factories which produce almost every weapons system and ammunition used by the three services. What is needed now is a large scale induction of the latest technology from abroad to meet the specific requirements of the latest acquisitions in the three services. Equally in place is the well deserved tribute to the vast Research and Development activities under the umbrella of DRDO. No doubt, the latest INSAS Rifles systems may have its drawbacks, but as has been rightly pointed out by Ordnance experts there is imperative need for acquiring requisite technology from abroad for improving its design since such guns are already in use in USA and Austria.

India can be proud of its IMDP (Integrated Missile Development Programme) which has now after more than two decades produced four missiles with varied applications- Prithvi, Akash, Trishul and Nag. This family meets the requirements of multifaceted attack and defensive modes. But the crowning glory of defence research has been its development of the Intermediate Range Balistic Missile, the Agni with its range upto 2500, depending on the load.

The entire missile programme barring the Agni, is on the threshold of

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the production stage and it is here in this context that the defence sector undertakings such as Bharat Dynamics, the nodal agency, the HAL, Bharat Electronics and Bharat Earth Movers Ltd. are putting in integrated efforts to speed up the final fabrication stage. This missile programme has been well designed to meet the needs of all the three services. The Prithvi and the Nag for the Army and Akash and Trishul for the Air force. Both the Prithvi and Trishul can be modified or optimised for use by the Navy for surface to surface firing and surface skimming offensive power respectively.

The thrust of this presentation is also to focus attention to essential factors if not more on defence preparedness.

We must realise that Policy Planning and Strategy on a macro level are more important than additions to weapons, manpower or support systems.

Need For An Open Approach

It is in this context one must have Perspective Planning over an extended period of anywhere between five to twenty years. In other words our outlook has to undergo radical change as we have been doing in the field of build up of economic infrastructure in our country. We have taken a very bold step, infact a revolutionary one, in striking a balance between public ownership and control to a liberalised economy throwing open vast avenues of business and industry not only to private sector in India but to direct investment from abroad.

Keeping this in mind we have to evolve a policy of an open door approach and access to the defence sector establishments including Ordnance Factories, both in terms of exports, imports and induction of technology. The present day policy of outmoded secrecy for the sake of secrecy is a fallacy because whenever imports are made from abroad the seller invariably comes to know what we are doing or plan to do.

The mention of this factor has become imperative because of abnormally slow rate of progress by the defence sector undertaking at Bolangir in Orissa for manufacture of critical ammunition for medium and light guns. This project has been bogged down in controversy. This is a classic case of where defence preparedness has suffered due to lack of coherent policy planning.

This is only a tip of the iceberg. Having dragged our feet on a full production line for the T-72M tanks, it has now been decided as a matter of policy to acquire off the shelf these tanks of advanced versions and also secure technology for their production in India. Infact, as a matter of wrong policy the manufacture of T-72 was stalled with unwarranted claims of imminent productionisation of Indian Arjun MBT.

Another example of faltering and vacillating policy is the induction of AJT and advanced combat aircraft for the Indian Air Force. No doubt it is very wise proposition to persevere with the LCA project to achieve self-sufficiency but to peg India's defence on a system that is yet to make its appearance is too much of a gamble. Fortunately, the present government has been prudent enough to seek at least an additional aquadron of MIG-29 fighter aircraft and given its approval for the induction of Sukhois-30 to give the IAF required strength to take care of national security requirements.

Estimates Committees Recommendations

It is pertinent here to recall certain observations made by the Lok Sabha Estimates Committee of Parliament in 1992-93. The 19th Report may well be described as a monumental monogram on Defence management and Policy, besides force levels and manpower.

The Committee have felt that the existing statement on defence policy which is, to defend the territorial integrity of the country, is a needless oversimplification. They have also expressed dismay over the fact that suddenly emerging situations like Gulf War of 1990 should have thrown country's defence planning into dissarray or that country should have fought four wars and launched armed operations in and at the request of neighbouring countries without a clearly articulated and integrated defence policy. The Committee has therefore stressed upon the need for a clear and comprehensive defence policy based on a viable national security doctrine. In the same context the Committee have recommended review and rationalisation of the Officials Secret Act to facilitate a more meaningful debate on national security affairs.

The Committee have suggested revival of dormant national security council for holistic direction of national security affairs at the highest level. From this perspective the Committee have desired that the defence policy makers should take a greater note of emerging threat to the country from air and sea.

With a view to stabilising defence plan expenditure the Committee have called for studying the feasibility of making the defence sector allocation for the entire plan unalterable. This the Committee feel will make defence planning exercise more realistic by co-relating allocation of resources to the task entrusted to the defence services. Commenting on the efficiency of decision making process in the Ministry of Defence, the

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Committee have observed that often proposals floated for fulfilling the task entrusted to defence services are subjected to such prolonged process of scrutiny and series of clearance that it assumes the form of a hurdle race and in the bargain the services end up with a relatively larger share of anxiety. To mitigate this situation the Committee have highlighted the need to reform the decision making process in the Ministry of Defence. To this end, they have called for greater powers to be delegated to the three Chiefs of Staff.

Despite the Estimates Committee's emphatic recommendations, the Government has been implementing them in a piecemeal manner with the result that many essential items are still to be cleared for procurement by the defence services. This has its cascading effect on defence preparedness due to a lack of appreciation of perspective planning by the nodal Ministry. Infact, the three services have a Director General for Defence Planning but their recommendations of a long term nature have had little effect on decision makers.

Therefore, the need is to change track in the same manner as government did in the sectors of the economy. Another major imperative is to take out the Defence Budget from the non-plan category and bring it within the overall planning process. This is immensely desirable in order to make the Defence Sector Undertakings enter into diversified manufacture or civilian sector also. The Current year's Defence Budget is of the order of Rs. 27,798 crore as against Rs. 26,879 crore last year. The allocation for present year include a capital outlay of Rs. 8979 crore on all the three services. Often there is a debate on this capital segment. But in the absence of detailed expenditure Budget documents such discussion becomes an exercise in futility. A major part of this outlay is committed expenditure on ongoing projects including procurement and construction but does not provide for any new acquisitions sought by any of the services. This is a lacuna and has to be covered up by a projected allocation of funds as and when required for additions to the defence services arsenal. Otherwise there is general demoralisation in the armed services which feel that they are not getting their deserved priority, although the case may be otherwise.

Interaction With Media

India has a large Army, the fifth biggest in the world. The Navy and Air Force too have their unique position figuring among the top five or six. But strange to say there is a very big communication gap between the Armed Forces and the public and what hits the eye most is the denial of access to the media to the state of defence preparedness.

The Press Council of India has admirably defined the role of the press in coverage of defence related matters in its Report (1994) calling for more openness in defence coverage. The Council said the media has an "adversarial role" to the extent that it questions authority, all authority, to look at the otherside. This must be understood and a relationship of creative tension accepted as a democratic necessity. For the rest, they are partners in trying to build a better society".

One must however congratulate the Army Chief General Shankar Roy Choudhury for his frank and forthright advise to his troops and officers to develop media interaction modes and use it as a "force multiplier and not as a force degrader". Infact, this is among the Ten Commandments prepared by the Army Headquarters as advice to troops engaged in low intensity conflict situations. This thus shows the appreciation of the role of the media in giving a boost to defence preparedness in all its magnitude but sadly it remains to be implemented in letter and spirit.

No doubt a good beginning has been made recently by the Army Training Command (ARTRAC) which has organised a number of inter-media Seminars at a number of locations but the feedback has not been as fruitful as it should be. At least the consolation is that after a long time the three services are coming to realise that the print and electronic media are weighty partners in the process of defence preparedness and policy making.

To conclude, it must be understood that the nature of modern warfare is such that it involves the whole nation. Of course Defence Forces play a key role but since war or any external threat requires total mobilisation in a democracy, maximum transparency alone can assure co-operation on the part of the people in every respect. ❐

The author is Bureau Chief, the Hitawada & a Defence Correspondent.

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Rural Development

B.S. Padmanabhan

The ultimate aim of various rural development programmes is to alleviate poverty. Mere pumping of more funds is not enough. Some structural changes of fundamental nature are needed to achieve better results. Indentification of the eligible beneficiaries is of utmost importance in the whole process.

INDIA lives in its villages and there can be no national development without development of the rural areas. This has been the refrain of social, economic and political leaders even before the country secured its Independence. In fact, one of the planks on which the freedom struggle was fought was the neglect of the rural India during the British rule and Mahatma Gandhi made village self-sufficiency, "Gram Swaraj", the centerpiece of his vision of economic development in free India.

Fifty years have passed by since the country became free and the relevance of Gandhiji's clarion call for rural development has not ceased. Notwithstanding the rapid urbanisation that has been taking place, majority of the country's population are still living in the villages. In terms of percentage the rural population's share might have dropped a bit but in absolute terms the number is still high enough to merit special attention in the overall economic development efforts.

It is not that no progress has been achieved but the pace and the extent of achievement have not been upto expectations or desired levels. Rural development had all along been associated with agricultural development and it was thought that rural prosperity would automatically come about as a result of increased farm output. However, in the 1950s, the first decade after Independence, a conceptual change took place. It was the "Grow More Food" Enquiry Committee that mooted an integrated approach that would take care of not only agriculture and allied activities like animal husbandry but also the education, health and other socio-economic needs of the rural population.

Community Development

The launch of the Community Development (CD) Programme and the National Extension Scheme (NES) was the offshoot of this recommendation. Under this programme, a block of 100-120 villages was made the basic unit of planning and integrated rural development, comprising agriculture and allied activities, education health, social welfare, communications, supplementary employment etc., with special stress on self-help and public participation. The programme implementation was entrusted to a block development officer (BDO), assisted by technical officers in the disciplines covered by the programme, besides village level workers (Gram Sevaks and Sevikas) for each block. A supportive organisational structure at the District and State level was also built into the programme.

The basic objective of the CD programme was to secure the full development of material and human resource potential in rural areas on an area basis and develop local leadership and self-governing institutions, thereby raising the rural community to higher levels of living with the active participation of the people themselves. The programme had a good start. It resulted in the creation of a viable infrastructure base, covering the entire rural areas of the country. As was the case with every other programme, the degree of success of this programme varied from State to State. In 1969, 17 years after it was launched, the Central Government decided to transfer it to the States and with this began its decline and death.

One of the factors responsible for this was found to be the gradual dilution that had taken place in the integrated approach to rural development. All the work relating to rural industries was handed over to the Khadi and Village Industries Commission (KVIC) and the growing need for self-reliance in food led to a shift in emphasis in favour of increasing agricultural production to the exclusion of other activities. This resulted in the launching of the Intensive Agriculture Development Programme (IADP) in 1960 in selected districts, followed by the Intensive Agriculture Areas Programme (IAAP), and the High Yielding Varieties Programme (HYVP) in 1965.

As the G.V.K. Rao Committee Report in 1985 had noted, as a result of

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Many other Asian countries which were far less endowed with growth potential and scientific expertise and far less radical in their social and political philosophy had wiped out in a big way hunger and destitution of the rural masses but these remained a chronic feature in large parts of India.

these new programmes the Community Development programme lost much of its earlier cohesive force and yielded to a conscious disintegration accompanied by falling budgets. Secondly, the Green Revolution was found to have benefited mostly the larger farmers and areas which were better placed to receive the benefits of the HYV technology package. The majority of the rural population who were poor did not benefit much and the basic objectives of rural development remained unfulfilled.

New Schemes

By early 1970s there was sufficient realisation at the Government level that the rural development programme should aim at not merely increasing farm output but also at meeting the other socio-economic needs of the bulk of the rural population. However, instead of reviving the CD programme, new schemes were launched. These included the Applied Nutrition Programme, assisted by UNICEF, aimed at improving the nutritional status of the rural population in selected blocks and ensuring provision of health care, immunisation, potable water, and environmental sanitation; Crash Scheme for Rural Employment (CSRE), Pilot Intensive Rural Employment Scheme (PIREP) and the Food for Work Programme which sought to improve employment opportunities; the Drought Prone Areas Development Programme (DPAP) and the Desert Development Programme (DDP) to take care of the ecologically disadvantaged areas.

Besides these, there were special programmes for tribal areas and hill areas. On top of all these, a "whole village development scheme" was launched in some States on the recommendation of the National Commission on Agriculture whose central theme was to focus the rural development endeavours to achieve the social objective of reducing the income disparities and increasing employment opportunities among the rural communities. Thus, from the CD programme of 1952 to the Whole Village Development Programme of 1975 a full circle had been traversed and it was realised once again that only an integrated approach to rural development would help achieve the desired results.

IRDP

This realisation led to the launching of the Integrated Rural Development Programme (IRDP). It was claimed to be a new concept but close observers of the rural development scene felt that it was conceptually no different from the much maligned CD Programme of the 1950s. However, the IRDP did not displace the plethora of schemes already on the ground. All these continued and a few more were added. The Food for Work programme was redefined and restructured into a National Rural Employment Scheme (NREP) and a Rural Landless Employment Guarantee Programme (RLEGP) was launched to provide at least 100 day of employment to one member of each rural landless household. In addition there was the TRYSEM programme to provide productive skills to rural youth.

On top of all these, rural development was taken away from the Ministry of Agriculture and an independent Ministry of Rural Reconstruction was created in 1979 which brought to the fore the priority which the then Government sought to accord to the development of rural sector. The nomenclature and the broadbasing of the functions of the Ministry underlined once again that a purely agriculture oriented approach was not adequate to ensure a perceptible improvement in the rural economy.

This view was strengthened by a study carried out by the National Council of Applied Economic Research (NCAER) of the house-hold income during 1975-76 which showed that notwithstanding the green revolution the rural sector had remained poorer than the urban sector. This study exploded the myth that the green revolution had led to the emergence of rural rich as it showed that only 4.95 per cent of the rural household had an annual income of Rs. 10,000 and above and around 0.2 per cent had an income of Rs. 30,000 and above, in sharp contrast to 17.6 per cent and 1.5 per cent respectively in the urban sector.

Against this backdrop, the newly created Ministry of Rural Reconstruction sought widening of its activities to include rural industries, rural electrification, rural roads, rural credit etc. But ultimately it secured responsibility for rural water supply, rural roads, village and cottage industries, and town and country planning in so far as it related to rural areas. In regard to rural health, rural electrification etc. it was given nodal responsibility.

Six years later in 1985 the G.V.K. Rao Committee set up to review the administrative arrangement for rural development and poverty alleviation, had noted that the setting up of District

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Rural Development Agencies and the strengthening of the blocks under the IRDP had not resulted in the needed integration or overall coordination at the district or block level and there were a number of instances in which a battery of schemes aimed at the same target group or the same geographical areas were being planned and implemented by independent agencies in a totally uncoordinated manner. Many other Asian countries which were far less endowed with growth potential and scientific expertise and far less radical in their social and political philosophy had wiped out in a big way hunger and destitution of the rural masses but these remained a chronic feature in large parts of India.

There were many reasons ascribed for this by experts. One was the fragmentation of the concept of the community development into several programmes which did not automatically fit into the integrated rural development framework. Another was that a strong administrative set-up was lacking in many States to implement IRDP. It was also felt that by merely giving assets to the rural poor rural poverty could not be eliminated. Yet another view was that the weak planning component was a serious drawback.

The Seventh Five Year Plan document made a specific mention of the multiplicity of programmes and diversity of organisational structures and stressed the need for a re-examination of the entire structure with a view to simplifying, rationalising, reducing duplication and ensuring horizontal coordination at local levels.

Need For A Total View

The G.V.K. Rao Committee also expressed the view that the time had come to take a total view of rural development, encompassing all economic and social development activities handled by different agencies at the field level. In its view, government machinery alone could not deliver the goods and local initiatives should be encouraged. In this context, it recommended activisation of the Panchayati Raj Institutions, besides suggesting that the district should be the basic unit for policy planning and programme implementation. It mooted the concept of a District Budget and a District Plan besides the designation of a senior official in the rank of the Chief Secretary as Development Commissioner at the State Level to oversee rural development. The Report of this Committee did not appear to have received the attention it deserved.

All these endeavours, backed by increased financial outlays, have had their impact in providing employment in rural areas, improving the infrastructure facilities in the form of roads, telecommunications, power etc. besides provision of drinking water supply and sanitation. However, the level of achievement varied from State to State.

However, the strenghtening of the Panchayati Raj Institutions (PRIs) to ensure active participation of the community in the planning and implementation of rural development programmes took place in the early 1990s backed by an amendment of the Constitution to ensure regular election, devolution of funds and increased representation for women etc. with a comprehensive list of developmental activities to be entrusted to the PRIs for implementation through the DRDAs.

All these endeavours, backed by increased financial outlays, have had their impact in providing employment in rural areas, improving the infrastructure facilities in the form of roads, telecommunications, power etc. besides provision of drinking water supply and sanitation in rural areas. However, the level of achievement varied from State to State. The structural adjustment in the wake of the new economic policy with its thrust on liberalisation led to apprehension that the State might reduce its role in social sectors. This apprehension was soon allayed by the Government of India by reiterating in unambiguous terms its commitment to the development of the rural economy and increasing the financial allocations for this.

The Ministry of Rural Reconstruction was renamed as the Ministry of Rural Areas and Employment, with three departments, namely the Department of Rural Employment and Poverty Alleviation, the Department of Rural Development and the Department of Wasteland Development. The first of these departments was entrusted the responsibility of promoting wage employment, infrastructure development, self-employment and entrepreneurship development through a number of programmes besides implementing special area programmes like Drought Prone Areas Programme and Desert Development Programme.

The Department of Rural Development was entrusted the implementation of the National Social Assistance Programme which comprised the National Old Age Pension Scheme, National Family Benefit Scheme and National Maternity Benefit Scheme; rural water supply and sanitation; land reforms; panchayati raj; agricultural marketing; promotion of rural technology. The third department was entrusted the

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responsibility of promoting development of wastelands.

The re-structuring of the Ministry on the above lines clearly brings out the conviction that for the rural development to be all pervasive, the approach should be holistic, and not just agriculture-centred. Though there might be a large number of schemes the effort should be towards convergence of delivery at the grassroots levels to ensure optimum utilisation of available resources—human and financial.

A Useful Workshop

An in-depth review of the implementation of various programmes at a Workshop of Project Directors held in August 1996 has brought out the weak links in the chain of implementation. As Mr. K. Yerrannaidu, Minister for Rural Areas and Employment noted, mere pumping of more funds is not enough for accelerating the pace of development in the rural areas and some-structural changes of fundamental nature are required to being about better results. Identification of the right type of beneficiary is the most important activity in the whole programme. Even though the selection process is entrusted to the Gram Sabha, it has been found that quite often ineligible beneficiaries get into the list. Local officers have been told to be vigilant and not yield to any kind of pressures.

Secondly, it has been felt that as far as possible the selection of the scheme should be left to the beneficiary's choice; tie-up of the marketing facility should be considered before sanction of the scheme and the time lag between the sanction of a scheme and its implementation on the ground should be reduced considerably. The need for greater coordination with the bankers at every level has been felt.

Yet another point that emerged from the Workshop was that people's participation was not forthcoming to the desired extent and the linkage between TRYSEM and other programmes needed to be strengthened. In this context, it was mentioned that only 3.8 per cent of IRDP beneficiaries had undergone TRYSEM training and of them only 47.2 per cent were successful. This means that in effect the TRYSEM'S contribution so far as IRDP is concerned has been less than 2 per cent. The move to set up mini-ITIs in each block for providing training to the poor in various skills deserve to be commended.

The review brought to the fore the deficiencies in the administrative set-up at the block level and village level. The second tier of the PRI, namely the block level institution was not found to be functioning in most of the States. Even the Zila Panchayats were not fully activated in all the States. Since most of the departments had their own village level functionaries, all of them should be pooled into a common cadre and especially trained in PRI, it was felt.

The ultimate aim of all these is to alleviate poverty, which is measured by the number of persons below poverty line (BPL). According to the National Sample Survey Organisation's quinquennial consumer expenditure survey for 1987-88, 201.4 million people, representing 25.49 per cent of the total population in the country were living below poverty line. The share of rural areas in these is 168.2 million or 28.37 per cent of rural population. The existing definition of BPL is Rs.11,000 and there is demand that this should be revised taking into account the level of inflation. If this was done the percentage of people living BPL will be still higher.

Actually, different figures of people below poverty line are being given by different agencies and it is time, as has been urged at the Workshop of Project Directors, that a fresh survey of people below poverty line is undertaken before the commencement of the Ninth Five Year Plan. This will help secure a realistic picture of the magnitude of the problem of poverty and this in turn will help redesign various poverty alleviation programmes in a realistic manner.

This assumes significance because the allocations for rural development programmes are proposed to be doubled in the Ninth Five Year Plan from the Eighth Plan level of Rs. 30,000 crore to Rs. 60,000 crore as the present Government has committed to eradicate poverty by the year 2005. The anti-poverty programmes will have to be redesigned to achieve this goal. In this the need for restructuring the administrative set-up cannot be minimised and the recommendations of the G.V.K. Rao Committee deserve to be considered. The Committee had, inter alia, suggested the creation of a post of District Development Commissioner, who would be of higher status than that of the District Collector, besides designation of an officer of Chief Secretary's rank as Development Commissioner at the State level under whom should be brought all departments which deal in one way or the other with issues of rural concern.

More important than these is creation of awareness among the people about various programmes launched for their benefit so that they can avail of them. In this the voluntary agencies have an important role to play. There are a number role to play. There are a number of success stories in rural development with active involvement of Non-Governmental organisations. These have to be replicated and made widespread instead of remaining scattered in a few pockets. ❐

The author is a senior Delhi-based journalist.

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Ensuring Food Security

Surinder Sud

We have overcome not only occasional food shortages but also attained food self-sufficiency by making food security an integral objective of our economic and social planning. However, the stress in future is likely to be more on nutrition security than mere provision of food, feels the author.

THE way India has transformed itself from a food deficit country into a food surplus nation has few parallels in the world. While many of the countries which witnessed the green revolution almost simultaneously with that of India are still dependent on food imports, India has emerged as a food exporter. It has, moreover, succeeded in evolving its own indigenous system of food management which is being cited by food experts as an example for others to emulate.

This transformation has been possible thanks chiefly to making food security an integral objective of economic and social planning right from Independence. The strategy has essentially been three-pronged: attaining higher levels of food production; constant endeavour to maintain stability of food supply; and ensuring access to food supplies on the part of those in need. The food security system, thus, did not remain confined to mere food self-sufficiency—which had of course been the prime objective—but went beyond it to take care of stocking and distribution as well.

India has historically been vulnerable to occasional food shortages due to its large population and monsoon-dependent agricultural production system. The country has gone through some of the most severe famines in the past. The first recorded famine was perhaps in Kashmir in 918 A.D. when, it is said, that one could scarcely see the water of Vitasta (Jhelum) as it was entirely covered with corpses. The other severe famine in the distant past was in 1770 when about ten million people were believed to have died. The Bengal famine of 1943-44 was perhaps the last major famine. The post-independence era has, however, not witnessed a single typical famine though sporadic incidents of food crises resulting in mass malnutrition have not been too uncommon.

Foodgrain Policy Commission

Though the history of the country's organised public distribution system goes back to the second World War which saw the emergence of the statutory rationing system, the real process of developing of an effective and reliable food security began soon after the Independence. A Foodgrain Policy Commission was set up in 1947 itself under the chairmanship of Sir Purshottam Das Thakur. Its report, submitted in 1948, stated that imports were essential to enable maintenance of central reserves to guard against crop failures. Considering the then size of the country's population, the commission recommended the size of the grain reserve to be around two million tonnes.

However, even while suggesting regular imports to maintain the supply line, the Foodgrain Policy Commission never lost sight of the need for achieving self-reliance in this vital field. It recommend that indigenous foodgrains production be raised by 10 million tonnes a year till self-sufficiency was achieved.

The first policy initiative in tackling the food problem in independent India was taken in December 1947 with lifting of all controls on foodgrains imposed in the wake of the Bengal famine and World War. However, the country soon experienced widespread floods and crop losses, resulting in steep rise in prices of foodgrains and necessitating reimposition of controls. The fact that the country's first experiment with free market economy in foodgrains was unsuccessful perhaps proved a blessing in disguise. It taught a very useful lesson which has continued to influence the country's food policy till today. This is that the State would have to play the major role in ensuring food security and that the provision of an item as vital as food cannot be left entirely to the market forces. The public distribution system (PDS), the mainstay of the food security, is based essentially on this premise.

The Purshottam Das Thakur panel was followed by several committees and commissions which reviewed the food and agricultural polices from time to time. While the Foodgrain Investigation Commission of 1949 reiterated the need for food self-sufficiency, the Foodgrain Procurement Commission of 1950 went a step further and suggested government's monopoly in foodgrains

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trade with procurement at primary markets and levy on the producers. Similar, albeit not exactly identical, views were expressed by the Foodgrain Enquiry Committee (1957), headed by noted economist Ashok Mehta.

Besides reiterating the need for creating grain buffer, it made wide ranging recommendations, including control on foodgrains trade; some regulation of consumption; programmes to increase production; imports pending self-sufficiency; and establishment of price stabilisation board.

The most important recommendation of the Ashok Mehta committee pertained to the setting up of a foodgrains stabilisation organisation to undertake grain purchase and sale operations. It was perhaps this suggestion that led a few years later to the setting up of the Food Corporation of India (FCI) in 1965. It turned out to be the most important measure in ensuring food security. Simultaneously, the Agricultural Prices Commission, which has since been renamed as the Commission for Agricultural Costs and Prices (CACP), was set up to ensure remumerative prices to the growers. This also turned out to be an equally important land mark as it prompted the farmers to take to the cost-intensive, fertiliser-based crop production technology that triggered off the green revolution.

Uptrend In Foodgrains Production

The availability of new technology and creation of necessary supportive infrastructure put the country's agriculture on a fast growth track. The growth in foodgrain output, consequently, started outpacing the population growth, pushing the country surely, though steadily, towards food self-sufficiency and food security. The total annual foodgrain production, which had risen merely from 55 million tonnes to 90 million tonnes between 1950 and 1965, registered a spectacular increase in the subsequent period crossing 191 million tonnes in 1994-95. Though it suffered a set back in 1995-96, dropping to 185 million tonnes, the uptrend is expected to resume once again this year.

It has indeed been the resilience of the Indian agriculture and the existence of the food security system, including the PDS, that enabled the country to face the 1987 drought, one of the worst in this century, without much difficulty and without resorting to panic imports or seeking food aid from abroad.

Buffer Stock

The procurement of foodgrains by the FCI for the public distribution system, too, continued to grow steadily. Annual rice procurement shot up from 5.6 million tonnes in 1980-81 to 13.6 million tonnes in 1994-95. Similarly, wheat procurement for the Central grain pool rose from 6.6 million tonnes to 12.3 million tonnes in the same period. This resulted in the foodgrain stocks with the FCI to swell from 15.5 million tonnes on July 1, 1982 to a mammoth over 35 million tonnes in July 1995.

It has indeed been the resilience of the Indian agriculture and the existence of the food security system, including the PDS, that enabled the country to face the 1987 drought, one of the worst in this century, without much difficulty and without resorting to panic imports or seeking food aid from abroad. The buffer stock of foodgrains came handy not only for meeting the need of food for nutrition but also for launching food-for-work programmes to provide drought-hit people to have economic access to food. The result of diet and nutrition survey during the 1987 drought (contained in the nutrition assessment and analysis (NIN) report of March 1992) clearly showed that widespread hunger and its consequences experienced in the earlier droughts of 1960 and 1970 were not there in 1987.

Public Distribution System

The government-run PDS not only takes care of procurement of basic essential commodities, including rice, wheat, sugar, imported edible oil, kerosene and coal, but also arranges for their supply to the consumers through a network of fair price shops at official prices. The operation of this system is the joint responsibility of the Central and State governments. While the Union government procures, stores and transports the PDS items upto the Central godowns, the State governments are responsible for administering the infrastructure for further distribution of these goods to the consumers. Each state is allocated a prescribed quantity based on past demand, offtake trends, relative need and other related factors besides adhering to the norms of maintaining the minimum buffer stock for meeting food security needs. Stocks are released each month. Some stocks are also released for offloading in the open market to augment supplies and help maintain the price line.

The three important objectives of the PDS are: 1) to provide foodgrains and other essential items to vulnerable sections of society at reasonable (subsidised) prices; 2) to have a moderating influence on the open

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PDS shows that while it has withstood the test of time as an effective food delivery system it still needs further refinements to make it relevant to the emerging new economic order which necessitates reduction in overall food subsidy without jeopardising the interests of the poor.

market prices of cereals, the distribution of which constitutes a fairly big share of the total marketable surplus; and 3) to attempt socialisation in the matter of distribution of essential commodities.

The fair price shops, which are the ultimate outlets for PDS supplies, are envisaged to serve a population of 2000 each. The number of these shops is estimated to have risen from four lakh in March 1992 to over 4.33 lakh in March 1995. In tribal, hilly, arid and remote areas having relatively poor infrastructure, additional items like tea, soap, pulses and iodised salt are being made available under the revamped PDS being operated in 1775 blocks.

The past four decades' experience in operating the PDS shows that while it has withstood the test of time as an effective food delivery system it still needs further refinements to make it relevant to the emerging new economic order which necessitates reduction in overall food subsidy without jeopardising the interests of the poor. Besides, the concept of food security has also tended to change with time, bringing under its scope nutritional, social and economic aspects. The new concept also distinguishes between national and household food security.

The existing PDS has also, at times, been criticised as being urban-biased and cost inefficient. Some economists feel that it has had only a marginal impact as far as income transfer to poor households is concerned. A study based on the National Sample Survey's 42nd round (NSSO 1990) has revealed that while the overall subsidy per family is almost Rs. 12.50 per month, it is hardly Rs. 2.08 for the bottom 20 per cent of the rural population.

Some of the disabilities can perhaps be attributed to the universal nature of the PDS and the lack of purchasing power of a vast section of the population. It has now been realised that economic access to food is as important as the physical availability. The attempts now being made at restructuring and better targeting of the PDS may make a substantial difference.

Thanks to this change in food security concept, the stress in future is likely to be more on nutrition security than mere provision of food. In fact, a national nutrition policy was adopted in 1993. This was followed by initiation of the national plan of action in 1995 for this purpose. This policy recognises the significance of short term measures, such as nutrition interventions for specially vulnerable groups, fortification of food items and control of micro-nutrient and protein energy deficiencies through inter-sectoral programmes. The suggested programmes include universalisation of supplementary feeding for pre-school children and expectant and nursing mothers, mid-day meals for school going children, and child-survival and safe motherhood programme to extend nutritional prophylaxis and universal immunisation. Some of these programmes are already underway.

The 9th plan approach paper has also taken a broader view of food security to include nutrition security as well. It categorically states that food and nutrition security is one of the primary objectives of the 9th plan. It calls for long-term measures for eradication of hunger and starvation by ensuring "availability, accessibility and affordability of balanced food and nutrition for all".

The approach paper suggests additional measures for this purpose. These include augmenting food production and availability of essential food items; affordability through increasing purchasing power of those living below poverty line through employment and income-generation progammes; and accessibility through restructured PDS. Additionally, it calls for provision of basic minimum services like safe drinking water, primary health and supplementary nutrition and generating health and nutrition awareness among the people, especially women, to help them adopt right type of food and dietary practices.

The paper also suggests establishment of a nutrition monitoring and surveilance system to facilitate regular flow of data and information based on the selected nutritional indicators for the purpose of planning and monitoring. This system will be interlinked with requisite mechanisms for undertaking periodic evaluation to assess the health outcome and impact of all nutrition-related programmes. ❐

The author is Agriculture Editor, Business Standard.

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Health Care Scenario

Dr. Prema Ramachandran

The post-Independence era has witnessed the development of a vast health care infrastructure in the country to control major public health problems. However, ever growing population, changing lifestyles and emergence of new diseases have increased the health care burden resulting in a widening gap between what is possible and what is affordable, says the author.

INDIA is one of the pioneers in the health service planning with a focus on primary health care. The Bhore Committee report which laid the foundation of the health care system in Independent India preceded the Alma Ata declaration by three decades. At the time of Independence, the country's health care infrastructure was mainly urban and clinic based. These hospitals and clinics provided curative care to patients who came to them. Outreach of services in the rural areas was very limited; there were very few preventive and rehabilitative services available.

From the First Five Year Plan efforts were made to build up primary, secondary and tertiary care centres and to link them through appropriate referral system. National Programmes for combating major public health problems were evolved and implemented. These efforts have resulted in a discernible impact on mortality with Crude Death Rate (CDR) declining from 27 in 1951 to 9 in 1995 Sample Registration System (SRS 1995 provisional). However the morbidity due to communicable and nutrition related diseases has not shown a parallel decline. In addition, there is now an increasing morbidity due to non-communicable diseases and newly emerging infections such as those with HIV.

Rural Health

Over the last Eight Plan periods the Rural Primary Health Care infrastructure has been built up throughout the country. Adequate number of subcentres and PHCs have been created so that at the national level the norms for these have been met by the end of the Seventh Plan. Efforts are underway to build adequate number of Community Health Centres (CHCs) so that there is effective emergency services available in rural areas. However the staffing of these infrastructure is often inadequate and lack of key personnel have come in the way of effective delivery of health and family welfare service and implementation of the major national programmes. Yet another problem has been in building up of effective referral services between these three tiers of health services.

There is a need to assess the requirement of personnel based not only on population, but also on the basis of workload, distance to be covered, and problem in utilization of health services by the population. Flexible approach to recruitment of staff if necessary on contract basis has to be taken up to ensure that programmes do not suffer due to lack of key personnel.

Urban Health

In 1991 it was estimated that nearly 30 per cent of India's population lived in urban areas. Urban migration over the last two decades had resulted in rapid growth of urban slum population. Though initially the health care services were mainly urban based, the existing services have become inadequate to serve the needs of the growing population. Realising this unmet felt need for health care, several organisations including Municipalities, State Governments, non-governmental organisations and externally aided projects undertook efforts to create necessary infrastructure and provide the manpower there. Unlike the rural health services, there has not been any clear cut and well organised efforts to provide primary secondary and tertiary care services in geographically defined areas in urban health care. As a result, there are substantial under-utilisation of some facilities and over crowded tertiary care centres. Efforts have been initiated to build up appropriate linkages between centres providing primary health care services and those providing secondary and tertiary care in the same areas, so that there is optimal utilisation of the available health care facilities.

Quality Control Of Drugs

Provision of appropriate drugs of good quality at affordable cost is essential for success of disease control programmes. Equally important is to restrict, and if possible, eliminate, the use of irrational drug formulation and fixed dose drug combination. Recognising this, provisions for strengthening the food and drug

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Expansion of Health Services

Sl. No.	Item	1951	1971	1992
1.	Medical Colleges	28	98	146
2.	Hospitals	2694	3862	13692
3.	Dispensaries	6515	12180	27403
4.	Community Health Centres	—	—	2193
5.	Primary Health Centres	725	5112	20719
6.	Sub-Centres	—	28489	131454
7.	Hospital beds (all types)	117178	348655	810548

control organizations in the States and Centre were made in the Eighth Plan. However, implementation of the scheme has been patchy and tardy. This will be taken up on priority basis during the next few years.

Human Resources For Health

Any health programme is as good as the personnel who constitute the health system. Both in the State and in the Central Sector over 75 per cent of the budget goes to meet the salary of the employees. Unlike health service planning, the health manpower planning in India did not receive adequate attention. There is gross inadequacy of the number of para-professionals and over production of doctors and specialists in the country. There are regional disparities both in quantity and quality of the health care professionals. These have come in the way of effective implementation of the health programmes. It is imperative that health manpower appropriate in quality and adequate in quantity is available for catering to the health care needs of the population. In addition to the existing institutional mechanisms, the open university system and the vocational courses will assist the States in production of adequate number of the para-professionals of appropriate categories and ensure that the quality of pre-service training is optimal.

It is essential to establish an institutional mechanism for health manpower planning at district, State and Central level so that the task of health manpower planning, based on the data on availability and needs at the district, State and the national level, and the function of health manpower production proceed in tandem. This will ensure that appropriate mix of the health personnel of requisite quality are produced to meet the existing and changing health care needs of the population in the public, private and voluntary sectors.

In the rapidly changing health care scenario it is essential that all professionals and para-professionals undergo periodic retraining so that their knowledge and skills are updated. Continuing multi-professionals education enables the professionals and para-professionals to function effectively as a team for effective and efficient delivery of health care. In addition to the existing inservice training courses in various institutions, the Open universities will play an increasingly important role in this direction.

Bio-Medical And Health Services Research

The Indian Council of Medical Research has been the nodal agency for bio-medical research in the country. Bio-medical and health systems research is carried out by research institutions, universities, medical colleges and non-governmental organisations and are currently funded by several agencies including ICMR, DST, DBT, CSIR and concerned Ministries. Basic, clinical, applied and operational research studies relevant to major health and population problems in the country have been the focus of research programmes. It is noteworthy that most of the National Health Programmes in the country are based on applied and operational research studies carried out by ICMR.

Efforts are underway to achieve optimal coordination of the research activities by networking and if needed by multi-agency funding of important projects. Development, testing and quality control of drugs in the modern system of medicine and ISM&H, development of immunodiagnostic tests for common communicable diseases which could be used at the primary health care institutions, development and testing of alternative strategies for control of communicable and non-communicable diseases and operational research for efficient implementation of the RCH (reproductive and child health) package through PHC planning are some of the major research areas which have been initiated in the recent years.

Indian Systems Of Medicine And Homoeopathy

There are over 6.5 lakh of practitioners the Indian Systems of Medicine in the country. They largely work in remote rural as well as urban slum areas and thus, could play an important role in improving the quality and outreach of health care. During the Eighth Plan the Deptt. of ISM&H has been formed to provide a new thrust and focus to the ongoing programmes. The focus will be to

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ensure quality and relevance of the undergraduate training, a period of internship with possible multi-professional inter-action and periodic courses to update the knowledge and skills of the practitioners.

Involvement Of Local Self-Government Institutions

Lack of close supervision and monitoring at the peripheral level and the inadequate community awareness and participation have come in the way of efficient and effective implementation of the Health programmes. With the seventy third and seventy fourth Constitutional amendments, the Nagar Palikas and Panchayati Raj Institutions will play increasing role in ensuring planning, implementation and monitoring of health services at the local level. They will also ensure effective coordination of programmes at the local level between related sectors such as sanitation, safe drinking water and women and child development, so that optimal benefit and the vulnerable segments receive the attention that they need.

Control Of Communicable Diseases

At the time of Independance communicable disease had been the major cause of morbidity and mortality in the country. Though health is a state subject, several centrally sponsored programmes for control of communicable diseases were initiated over the last four decades. National Malaria Eradication Programme was the oldest of all these. It was launched in 1953 and had achieved spectacular success in rapidly reducing the morbidity and mortality due to malaria from estimated 75 million cases and 0.8 million deaths at the time of Independance to 0.1 million cases and no death in 1965. Unfortunately since then there has been a resurgence of malaria in several parts of the country. Increasing prevalence of Falciparum malaria, resistance of mosquitoes to insecticides and malarial parasite to commonly used antimalarial drugs have been the source of concern. The Modified Plan of Operation is being implemented; special attention is being paid to the vulnerable North-Eastern States by providing 100 per cent Plan assistance for this programme. Other vector borne diseases also have been receiving due attention. Re-emergence of diseases like Kala Azar has been a cause of concern.

Deteriorating urban and rural sanitation, poor water and solid waste management and ever increasing overcrowding result in communicable diseases which continue to be the major cause of morbidity and mortality in the country. Emergence of new infections like HIV add to the existing disease burden due to communicable diseases. The emergence of drug resistance in many bacteria and resistance to insecticides among vectors have added to the existing problems of disease control.

Other major National Programmes that have received attention of the Eighth Plan aim to combat tuberculosis, leprosy and HIV infection. The performance in many of these national programmes has been suboptimal due to lack of critical manpower at the primary health care level. Efforts are underway to identify the gaps in infrastructure and manpower, and fill them as expeditiously as possible so that the programmes become fully operational. In addition efforts are being made to improve the operational efficiency, the quality of services, make services more responsive to client needs, ensure that health care providers have the necessary skills and support including referral facilities and supplies they need. Simultaneously through health education efforts will have to be made to improve the client and the community awareness of the existing services and how to utilise them optimally, so that available services are effectively utilised and community participation in the programme optimised.

At the time when many of the disease control programmes were initiated sufficient health infrastructure and manpower were not available for management of major health problems; so a vertical programme infrastructure was created to operationalise these programmes in the absence of primary health care infrastructure. By the end of the Eighth Plan the primary health care infrastructure is well estiablished and so efforts are being made to ensure that existing vertical programmes are horizontally integrated at district level so that the primary health care institution truly becomes the nodal agency for channelising comprehensive Health Services to the population.

In order to assist the primary health centre/CHCs officers to carry out horizontal integration, it is envisaged that the middle level public health programme managers who are currently heading the vertical programme at district level will be given the additional task of ensuring coordination and implementation of integrated Health Programme at Primary Health Care institutions in defined blocks.

Disease Surveillance

Given the existing conditions of poor environmental sanitation and the weakness of the public health system it may not be possible to completely prevent out breaks of communicable diseases in the near future.

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Nevertheless, early detection and prompt response could result in rapid containment and control of the outbreak, reduction in morbidity and mortality. The building up of the disease surveillance and response mechanisms have received considerable attention during the Eighth Plan period. It is felt disease surveillance and response must be based at district level to ensure prompt response. This system needs to be given the necessary back up laboratory support and epidemiological expertise so that containment measures are based on sound data and are logical. This back up system should be evolved through strengthening and optimal utilisation of the facilities and expertise available in the National Institutions/ medical colleges.

Hospital Infection Control

Increasing incidence of hospital acquired infections and accidental infection in health care providers and waste disposers renders it imperative that efforts are made to improve infection control and waste management through utilisation of appropriate affordable technology at all levels of health care. Planning Commission and the Ministry of Health and Family Welfare Programme have initiated steps to take up specific pilot projects.

Non-Communicable Diseases

Increasing longevity, demographic transition resulting in rapidly rising numbers of aged population, urbanisation, increasing pollution, a change over from traditional diets, sedentary life style and increase in the stress of day to day living have led to the increase in life style related disorders and noncommunicable diseases. Noncommunicable diseases such as cardio-and cerebro-vascular diseases resulting in heart attacks and strokes, diabetes and common malignancies are emerging as major public health problems in the country. Pilot projects for district based integrated noncommunicable disease control programmes carried out through the existing primary and secondary level facilities, using diabetes as a model, have been initiated in the Eighth Plan. The experience gained will be used to expand such programmes.

Environment And Health

Rapidly growing population, urbanisation, changing agricultural, industrial and water resource management, increasing use of pesticides and fossil fuels have all resulted in perceptible deterioration in the quality of environment and attendant adverse health consequences. Pilot projects exploring the dimensions of the problem and aimed at seeking realistic solutions were initiated during the Eighth Plan period. Efforts are also under way to document extent of the problem of environmental pollution and its impact on health status of the population. Prevention and management of health consequences of environmental deterioration will receive increasing attention.

Occupational Health

Over the last two decades occupational health has received considerable attention. Continuous monitoring of safety of work environment and workers' health status, both in the organised and unorganised sector with emphasis on gender specific and child labour related issues, documenting the magnitude and types of the occupational health problems, initiating appropriate preventive and remedial measures will be developed into a structured health programme are being taken up wherever possible.

Health Impact Assessment

Several major development activities in any field such as Agriculture, Industries, Urban and Rural Development have resulted in environment changes; some of these could have health implications. In order to minimise these it has been suggested that all large development projects should have Health Impact assessment and the necessary provision for health care of people involved in development activities and prevention and management of health consequences of developmental activities on the population living in the vicinity of the project should be incorporated and costed as part of the project. These suggestions are being considered by appropriate implementing agencies.

Conclusion

The past fifty years have witnessed the development of a vast health care infrastructure and manpower aimed at providing health care to the population . National Programmes have been evolved and implemented to control major public health problems. The investment in Public health has shown considerable increase over the plan periods. However there has not been any increase in the proportion of the Plan outlay allocated to health sector. There is an increase in the disease burden due to communicable and non-communicable diseases caused by the growing population, newer diseases and changing life styles. There are evolving technologies for health care and increasing expectations of the population for health care. All these have resulted in the ever widening gap between what is possible and what is affordable. It is imperative that in the coming decades this gap is bridged and at the same time equity and excellence are ensured in health care services. ❐

The author is Adviser (Health), Planning Commission.

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Indian Industry

S. Viswanathan

In a wide spectrum of industry and agriculture and the entire gamut of services, there has been great progress in the country during the post-Independence era. The growth in several sectors have indeed been spectacular and in several others it has been modest while in a few others outright dismal, says the author.

ON Monday, 10 November 1996, the foundation stone for the automobile plant of the Hyundai Motor Company of South Korea, was laid at Irungattukottai, some 40 km from Chennai. The plant involves an outlay of $700 million (around Rs. 2500 crore) in the first phase; and another $400 million (around Rs. 1440 crore) in the second phase. A production capacity of around 100,000 passenger cars in the 1300 cc-1500 cc range is envisaged. The first car is expected to roll out of the assembly line by October 1998. Most importantly, HMC promises a 70 per cent indigenous content from the first car. Which means prospects for dozens of additional collaboration arrangements and investments for the production of components. At full production, the turnover of HMC will be in the region of Rs. 6000 crore.

This is the third mega investment in the automobile sector involving outlays exceeding Rs. 1500 crore each. The other two relate to the Mahindra-Ford India Ltd. project to produce passenger cars of similar capacity and in the same medium segment; and by Ashok Leyland Ltd., planning to invest on facilities to expand capacity to 100,000 commercial vehicles.

In recent months total investments promised in Tamil Nadu exceed Rs. 5000 crore—an outlay that perhaps exceed all investments made on new projects in the first instance all through the past 50 years.

In all these areas, and in a wide spectrum of industry and agriculture and the entire gamut of services, there has been great progress through the years of Independent India. The growth in several sectors have indeed been spectacular and in several others, it had been modest; and in a few others outright dismal. The bench-making has been done both in regard to the potential offered by India and by developments in several other countries which started on industrialisation much later than we did. South Korea offers a ready example.

In looking at growth, over the last five decades, we can segment these into five distinct phases that roughly correspond with decennial slots.

Decade Of Great Spirits-1947-56

At the time of Independence, understandably, there were a few industrial concentrations: the steel complexes at Jamshedpur and Burnpur supporting a good number of steel and heavy engineering units in Bihar and West Bengal. The coal industry, again largely confined to these eastern states, supporting a wide range of allied industries, the railways and roadways. The jute mills of eastern India, plantation industry in Assam and the Nilgiris, textile units around Ahmedabad, Bombay, Coimbatore, Madras, Madurai and Pondicherry, in turn, support allied engineering industries. A few consumer goods industries around Bombay and a few chemical units were scattered all over. Foreign reserves were handsome but entrepreneurship was scarce.

The launch of the First Five Year Plan in 1951 was the first step in deciding priorities and channelling resources towards these. There was understandably the stress on agriculture. The seeds were sown for expanding agricultural production through handsome investments on massive irrigation-cum-hydroelectric projects. The construction of massive irrigation dams like the Bhakra Nangal, Hirakud, Koyna, Nagarjuna Sagar... was envisaged during these years. The foresight of the planners could be appreciated much later when several lakhs of acres were brought under irrigation and cheap hydroelectric power flowed from these.

Decade Of Heavy Industries—1957-66

In the early fifties, capacity for steel production was less than 1.5 million tonnes, through the two steel works of Tata Steel and Indian Iron and Steel Company. Jawaharlal Nehru, T.T. Krishnamachari and visionary bureaucrats like S. Boothalingam believed in steel triggering a lot of activity in downstream capital goods and consumer industries. When the Russians, the Germans and the British offered handsome credit and technology for building a million tonne integrated steel plant each, these visionaries boldly opted to accept all the three offers! It was thus that in just five years, the three integrated steel plants at Bhilai, Durgapur and Rourkela, built on green field sites,

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started delivering a rich mix of basic steel. Mother factories like the Heavy Electricals India (which later merged with BHEL) and the Heavy Engineering Corporation took shape during this period.

Several of these were long gestation projects that involved large investments. Unlike in most countries of the West, the public sector was not the result of nationalisation: S. Swayambu, Chairman of Heavy Electricals in the late Sixties, graphically pointed to the compulsions of the government to enter industry: "the private sector at that time could not think beyond producing fraction horse power motors or electric bulbs. They neither had the resources nor the holding power to invest in large, long gestation projects," he pointed out.

Unfortunately, several of these investments like those in HEC, did not yield the returns envisaged; the inability to make sustained investments in the user industries, of steel making and mining also led to poor levels of capacity utilisation. In contrast, with the full complement of staff recruited, there was heavy over-manning related to output; thus the twin evils of a very high incremental capital output ratio (ICOR) and low productivity plagued the Indian industry. Three decades later, these continued to affect competitiveness despite the tremendous advantage of building capacity at modest costs.

Decade Of Turmoil—1967-76

In the mid-Sixties, India suffered two successive droughts that led to a precipitous fall in foodgrains production. The shortfall zoomed to around 10 million tonnes per year. The impact was so severe that the very concept of planning over five year span had to be given a holiday. But, this adversity had its beneficial fallout: in triggering the green revolution. Within five years, the coordinated work of policymakers, scientists and farmers ensured self-sufficiency in foodgrains.

The technology spread to a range of commercial crops, notably cotton and sugarcane, that triggered spectacular expansion of the textile and sugar industries.

The Coming Of Age Of Public Sector

The decade also witnessed the coming of age of the public sector. Several large industrial units came out of gestation and started earning handsome profits. The Bharat Heavy Electricals showed remarkable enterprise and growth during this period. BHEL undertook manufacture of the entire gamut of power equipment that supported the massive additions to capacity witnessed over the last three decades.

Equally spectacular was the success of the Oil and Natural Gas Commission in exploring and producing oil and gas wells at Bombay offshore and in Gujarat onshore. The western region, through mostly offshore wells, accounted for production rising to a level of 20 million tonnes in just about a decade. ONGC became one of the large, globally renowned enterprises in just around two decades.

The public sector thus was reaching commanding heights in several areas, notably oil, power, steel, coal, state trading... With the nationalisation of 14 major banks and with industrial development catalysed and funded massively by the public financial institutions of IDBI, ICICI, IFCI and dozens of state financial and industrial development corporations, almost the entire financial sector was under the public sector.

Yet, the third decade of independence was one marked by serious industrial strife. While the beginning of this decade was marked by the precipitous fall in food production, the country's involvement in the liberation struggle of Bangladesh in 1971 proved costly. The economy went through two years of massive inflation (1973-75).

Decade Of Consolidation—1977-1986

For the first time since Independence, a non-Congress party, the Janata Party, came to power at the Centre in 1977. There was so much comfort on the agricultural front that efforts were made even to export some wheat. The government attempted large transfer of resources to rural India. But the insistence that MNCs should offer equity in their Indian ventures, led to IBM and Coca opting to quit India. The spree of nationalisation of the foreign oil companies, the coal companies and the 103 textile mills further accentuated by the tightening of FERA, led to a slowdown of direct foreign investment.

The corrections that came in the early eighties proved beneficial and set the pattern for opening up later. The advent of Maruti Udyog and four other Japanese manufacturers to produce light commercial vehicles, and the several technology and financial collaborations for two-wheelers helped Indian industry catch up with technology. In just three years 1984-87, Maruti Udyog zoomed to a production level of 100,000 vehicles and set new standards for productivity and work ethics. Foreign trade was given a lot of importance during these ten years. The Minerals and Metals Trading Corporation too scaled new heights. The seeds for building Indian multinationals were truly sown during these eventful years.

The Asiad '82, the Non-Aligned

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Meet 1983, the Commonwealth Heads of Government Meet 1984 and, more importantly, the expansion of the television network, contributed a lot to expanding awareness on the severe shortcomings of Indian economy. Comparison of notes became more frequent. Apart from Japan, the emergence of the Asian Tigers and the first attempts of China to open up shook off the complacency and smug satisfaction over modest achievements. The emergence of a middle class whose numbers expanded rapidly, also triggered demand for a vast range of consumer goods and new products like time share resorts.

The Decade Of Opening Up — 1987-1996

This decade marked a major break with the past in regard to trade, industry and investment policies. And this was largely due to the near collapse of the economy during 1990-91 when foreign exchange reserves nose-dived to just two weeks' import requirements and with no one willing to bail us out. The debt burden was increasing beyond prudential levels of servicing; inflation was soaring; budget deficits were at unconscionably high levels, further stoking inflation and interest rates. The near impossible situation required drastic remedies. Sweeping changes were made.

Over four decades of licensing, controls and permits were abolished for all but a handful of strategic industries. The MRTP Act was almost totally scrapped excepting retaining control over restrictive practices. Tariffs were being comprehensively reduced. Subsidies were sought to be contained. A beginning was made in broad-basing the ownership of public sector undertakings. Financial sector reforms were initiated. Foreign direct investment and investment by foreign financial institutions were sought as never before. The results were encouraging. There was considerable success in containing inflation, which was brought down to around 5 per cent last year; in stepping up growth rate to over 6.6 per cent; in building foreign reserves of around $ 20 billion; in stepping up export growth to over 20 per cent per annum over the last two years; and in attracting investments over vast areas.

However, unlike in China, there is no clarity and unanimity with regard to industrial policy, especially in attracting foreign investments and privatisation. In an employment scarce economy, understandably, there is the concern to protect employment in the organised sector. Unfortunately, this has been carried to a bizarre extent: of keeping alive dozens of public sector undertakings with little or no productive activity but only for the purpose of protecting employment of a few. In the Ministry of Heavy Industry alone, some 34 of the 48 undertakings have been kept running on this basis. The National Textile Corporation provides an even more depressing example: with no prospects of viability, the mills are run largely for keeping a few thousands in employment despite pumping in massive resources that also became unproductive. Productivity levels at the public sector banks are low.

Looking Ahead

The fifth decade of Independence has triggered investment interest in India as never before. Policymakers should now bring in a lot more clarity on their objectives.

The rules of international trade have changed. With trade barriers getting dismantled by the day, there is need to infuse a very high degree of competitiveness. A major development is the evolution of regional trade groupings like the European Community (EC), the North American Free Trade Association (NAFTA), ASEAN, APEC etc.

Though the south Asian countries have formed the SAARC, progress achieved in free trade among these has been slow. Apart from mere trade flows, potential benefits in terms of the phasing out of political animosities and more cohesive regional developments are immense... The EC experience proves this. Over the last 50 years Britain, France and Germany, who have been bitter adversaries for centuries, have been bonded together on the strength of mutuality of economic interests. The SAARC union could grow to include China, the Central Asian Republics and the Indian Ocean rim countries, including South Africa, and forge close links with ASEAN and APEC in course of time. The comparable levels of economic development of most of the countries in this region would help in co-ordinated growth.

There is a huge market for such equipment: there are capabilities in these countries to produce entire range of such equipment—generators, turbines, boilers, transformers, switchgears, motors et al.

The Korean automobile manufacturers—Daewoo Motors and Hyundai—indicate plans for developing India as a major centre for their global operations. Like we did in regard to Maruti, in the assimilation of mass production technology, India should attempt absorption of the high productivity levels of the Koreans, Americans and others; combine this with the strength of the massive availability of skilled manpower to win global markets. ❐

The author is Editor, Industrial Economist, Chennai.

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Industrial Development

Mahesh Prasad

As a result of sound policies pursued over the years, tremendous development has taken place in Indian industry, which stands today on a sound footing. However, there are certain infrastructural weaknesses which need to be tackled to ensure further growth, says the author.

INDIAN industry has undergone a sea change since Independence. From a situation, where even a pin had to be imported, India has reached a stage when it is going to manufacture 50-seater and 100-seater passenger aircraft. What is more, the Indian consumer today has a wide variety of goods to choose from. The Indian market place is today loaded with a range of goods. Whether it is newer models of cars, scooters or mobikes, washing machines, cooking range or mixies there is large variety to choose from. Gone are the days when choices were limited and one had to wait almost a year to get delivery of a new car or a scooter. One can today walk into a show room and drive out. With a choice available to the consumer the quality of goods have also shown distinct improvement.

Indian industry at the time of Independence was at a rudimentary stage. It was confined to cotton and jute textiles, which accounted for 56.8 per cent of value-added in manufacturing, sugar (6.6 per cent), engineering (8.4 per cent), steel (7.6 per cent), chemicals (4.1 per cent) and cement (2.1 per cent). Modern industry formed only six to eight per cent of national income in Independent India in 1950, with small scale enterprises and mining contributing 12 to 14 per cent. A feature of India's industrial sector soon after Independence was the virtual absence of capital or producers goods industry. Indian industries had to rely almost wholly on imported machinery and machine tools. In 1950, India met 89.8 per cent of its need for machine tools through imports, producing internally only Rs. 30 lakh worth of machine tools and portable tools.

Foundation Laid

The foundations of modern India's industrial economy was laid by Jawaharlal Nehru, who led the country to freedom and thereafter as Prime Minister for nearly 17 years, built the country's economy from a scratch. This was done through the public sector, whose foundations were laid by Nehru, as the private sector did not have the resources to undertake huge infrastructure projects, like Bhakra hydro-electric power project, or steel plants like Bhilai, whom the great visionary described as the temples of modern India. Nehru realised that without the basic infrastructure industries, the foundations of a modern industrial economy could not be laid. If this was true in 1950, it is equally true today as infrastructural bottlenecks are constraining growth.

Two Policy Resolutions

Industrial growth after Independence was facilitated by the Industrial Policy Resolution of 1948, followed by the Industrial Policy Resolution of 1956, which had as its objective, the acceleration of the rate of economic growth and the speeding up of industrialisation as a means of achieving a socialist pattern of Society. In 1956 capital was scarce and the base of entrepreneurship was not strong enough. Hence the 1956 Industrial Policy Resolution, gave primacy to the role of the state to assume predominant and direct responsibility for industrial development. Special importance was given in the two resolutions of 1948 and 1956 to the development of steel, heavy engineering, machine tools and heavy chemicals industry.

The industrial policy resolution of 1948 had a small number of industries to be reserved for production by the public sector. These included the production of arms and ammunition, production and control of atomic energy and ownership and management of railways. However, coal, iron and steel, aircraft manufacturing, shipbuilding, manufacture of telegraph and wireless equipment (except radios) and minerals were reserved for production by Central or State government undertakings. The 1956 Industrial Policy Resolution added some more industries to the list. The original thinking was that as far as the public sector was concerned, it should enter fields where private sector would find it difficult to invest. By 1956, this had changed to an absolute preference for state ownership of industries and the public sector was supposed to capture the commanding heights of the economy.

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There was better appreciation in the First Plan of the need for coordination of industrial planning with the formulation of other economic policies, such as customs and excise tariff structure, import and export policy, investment and technology policy and monetary and financial policy. The Second Plan and later plans have been increasingly concerned with the allocation of public resources and much less with indications and policies to direct the whole economy in desired directions.

Thrust For Industrial Development

In accordance with the prevailing thinking, the First Five Year Plan stated that the objective of industrial planning was to make good the deficiencies in production of key industrial items and to initiate development, which would enable cumulative expansion of such basic production. There was better appreciation in the First Plan of the need for coordination of industrial planning with the formulation of other economic policies, such as customs and excise tariff structure, import and export policy, investment and technology policy and monetary and financial policy. The Second Plan and later plans have been increasingly concerned with the allocation of public resources and much less with indications and policies to direct the whole economy in desired directions.

The Industrial Policy Statement of 1973, *inter alia*, identified high-priority industries where investment from large industrial houses and foreign companies would be permitted. The Industrial Policy Statement of 1980 focussed attention on the need for promoting competition in domestic market, technological upgradation and modernisation. The policy laid the foundation for an increasingly competitive export base and for encouraging foreign investment in high priority technology areas. This found expression in the Sixth Five Year Plan, which emphasised the need for productivity to be the central concern in all economic and production activities.

Nevertheless the sector continued to provide the thrust for the development of heavy industries. In critical areas such as power, railways, coal, petroleum, steel and fertilisers, the public sector has been intensely involved in setting the pace of development. Apart from public investments in basic industry and infrastructure, the expansion of the private sector in line with Plan objectives and priorities were greatly facilitated by financial institutions. An elaborate network of specialised development banking institutions with the Industrial Development Bank of India at the apex was established to help finance industrial investment in the private sector. These institutions, numbering over 50, have become the major source of long-term finance for the corporate sector.

Development In Sixth And Seventh Plans

As the statement on Industrial Policy, 1991 says, "These policies created a climate for rapid industrial growth in the country. Thus on the eve of the Seventh Five Year Plan, a broad-based infrastructure had been built up. Basic industries had been established. A high degree of self-reliance in a large number of items—raw materials, intermediates, finished goods—had been achieved. New growth centres of industrial activity had emerged, as had a new generation of entrepreneurs. A large number of engineers, technicians and skilled workers had been trained."

The Sixth Plan had achieved augmentation of new capacity more or less in consonance with the targets in a large number of industries including, among others, aluminium, zinc, lead, thermoplastics, yarn, petrochemical intermediates, electrical equipment, cement and consumer durables. However shortfall in production had taken place in some basic industries, such as steel, cement, non-ferrous metals, fertilisers and certain other industries, including textiles, jute manufactures, sugar, drugs and pharmaceuticals, commercial vehicles and railway wagons. Production targets were exceeded in a few industries like machine tools, passenger cars, motor cycles and scooters, consumer electronics and communication equipment. Domestic imbalances resulting from shortfalls in production had to be corrected through imports of essential commodities, like steel, cement, fertilisers and sugar.

A technological thrust was given during the Plan period in certain industries in the engineering sector. The first 500 MW thermal generating unit was commissioned and the manufacture of 500 MW turbo generators and boilers had commenced. There has been a systematic upgradation of production technology for other equipment, needed by the power sector. The manufacture of equipment for 1350 tonnes per day fertiliser units and blast furnaces of 3200 cubic metres capacity for steel plants was being undertaken in the country. A strong base had been laid for the rapid development of the electronics sector.

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The Seventh Plan recognised the need to consolidate on these strengths and to take initiatives to prepare Indian industry to respond effectively to the emerging challenges. A number of policy and procedural changes which were introduced in 1985-86 aimed at increasing productivity, reducing costs and improving quality. Production capacity restrictions on the industries were gradually reduced and broadbanding, which enabled a manufacturer to choose and produce any product mix which suited him in the context of the prevailing market conditions was introduced. In 1986, as against a policy of re-endorsement of existing capacity, the scheme of minimum economic scale of production was introduced with Letters of Intent prescribing a minimum economic size for a single unit. The accent was on opening the domestic market to increased competition and readying the industry to stand on its own in the face of international competition. The public sector was freed from a number of constraints and given a large measure of autonomy. The technological and managerial modernisation of industry was pursued as the key instrument for increasing productivity and improving competitiveness in the world.

As a result of the policies pursued since Independence, the long term trend of industrial growth for over forty years since 1950 is a trend annual growth of just over 6 per cent. This, says Rakesh Mohan in an essay in Bimal Jalan's book on Indian Economy, "is quite an achievement, given the magnitude of distortions built into the system." He divides the growth record into three distinct periods: 7.7 per cent annual growth over the first three plan periods (1950-1965), four per cent annual growth over the holiday (1966-69) and the Fourth and Fifth Plan periods (1969-79), and finally the recovery to about 7.7 per cent growth over the Sixth and Seventh periods.

Dark Period

The period 1966-1980, says Mohan is effectively the dark period for Indian economy. This period encompassed a number of exogenous shocks: the devastating three-year drought of 1965-68, the aftermath of increased defence expenditures resulting from 1962 war with China and two wars with Pakistan, the oil price shocks of 1973 and 1979, and the downturn in the availability of foreign resources. During this period, the Indian economy was constantly struggling to adjust.

As a result of policy changes, the composition of Indian industry had undergone great transformation. At Independence, the consumer goods industry accounted for almost half of all industrial production. In 1991 such industries accounted for only about 20 per cent. In contrast, capital goods production was less than 4 per cent of total industrial production. In 1991, it had gone up to 24 per cent. Similarly basic goods share had increased from 20 per cent to 40 per cent.

New Industrial Policy

Nevertheless, over the years it was becoming increasingly apparent that the industrial licensing system as it had evolved specially after the mid-1960s had, wittingly or otherwise, promoted inefficiency and resulted in a high cost economy. Major policy changes were, therefore, introduced in July 1991 to provide competitive stimulous for accelerated economic growth. The thrust of the new policy has been to inject new sources of competition in order to induce greater industrial efficiency by delicensing industries and by liberalising policy related to foreign direct investment. On July 24, 1991, a Statement on New Industrial Policy (NIP) was presented to Parliament abolishing industrial licensing, except for a list of 18 industries "related to security and strategic concerns, social reasons, hazardous chemicals, over-riding environmental reasons and items of elitist consumption." The number of industries reserved for the public sector were reduced to eight, where in government's view security and strategic concerns predominate. The two lists have gradually been reduced further. The NIP is designed to enable entrepreneurs to take investment decisions based on commercial judgement with reduced regulatory role of the government.

Simultaneously, trade related reforms, including the removal of

Major policy changes were introduced in July 1991 to provide competitive stimulus for accelerated economic growth. The thrust of the new policy has been to inject new sources of competition in order to induce greater industrial efficiency by delicensing industries and by liberalising policy related to foreign direct investment. On July 24, 1991, a Statement on New Industrial Policy (NIP) was presented to Parliament abolihing industrial licensing, except for a list of 18 industries "related to security and strategic concerns, social reasons, hazardous chemicals, over-riding environmental reasons and items of elitist consumption.

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quantitative restrictions and substantial reduction in tariffs, have increased international competition. Trade liberalisation has reduced effective protection to capital intensive activities and encouraged export oriented labour intensive manufacturing.

As a result of the NIP, the period after 1991, which registered a poor industrial growth of 0.6 per cent has seen acceleration in growth rate to 2.3 per cent in 1992-93 and 6.01 per cent in 1993-94. The recovery has been fast thereafter, with 1994-95 recording a growth of 8.6 per cent and 1995-96 going up to 12 per cent. Further, whereas during 1993-94, industrial growth was led by consumer durable sector, the growth has been led by capital goods sector, which recorded a growth of 25 per cent during the year.

As per the Budget for 1996-97, an Infrastructure Development Finance Corporation with an authorised capital of Rs. 5,000 crore is being set up to act as a direct lender, refinancing agency and provider of financial guarantees. Income of any fund dedicated to infrastructure has been freed from Tax.

Current Scenario

The new industrial policy and other economic reforms have catalysed foreign investment. Approvals of foreign direct investment in the post-policy period upto September 30, 1996 amounted to Rs. 8,63,290.05 crore (US $ 24,318 million). However, the actual inflow upto September 1996 has been only Rs. 1,81,50.49 crore (US$ 5,112 million) according to figures available with the Secretariat for Industrial Assistance. Further, except in the field of telecommunications, not much foreign investment has come in other vital infrastructure areas, such as power, roads and ports.

The country is currently experiencing a slowdown in industrial growth. According to industry sources, this is because adequate fresh capacity has not come up yet. Whatever growth the country has experienced so far has been through the full utilisation of existing capacity. Further growth is also constrained by lack of improvements in infrastructure and a high cost economy as a result of high interest rate structure. The industry has also been facing cash crunch from time to time. Further, the domestic industry has from time to time been calling for a level playing field compared to the multinationals, who are entering the market increasingly with the opening up of the economy. Of all these, further growth in infrastructure is vital for the growth of the economy as a whole.

There are clear signs of industrial deceleration. During the current financial year (1996-97), although the overall growth in industrial production for the April-August period was 8.6, there has been a decline from 10.6 per cent in the month of May to 9.6 in June and further to 8.29 per cent in July. The growth in August was a mere 6.4 per cent. This compares adversely to 13.2 per cent growth in August last year and 12.6 per cent growth in April-August. The growth in manufacturing at 7.8 per cent in August this year compares poorly to 14.5 per cent last year.

Rapid industrialisation of the country following the liberalisation of the economy and inadequate growth of infrastructure has created a mismatch that is hindering further growth. After attaining a growth in GDP of 6.6 per cent during 1995-96, according to latest estimates of the Central Statistical Organisation, the growth projected for 196-97 is 6.4 per cent.

Adequate attention to infrastructure is essential as it has been India's experience that the rate of growth in infrastructure industries has been consistently lower than in manufacturing industries. In 1995-96, for instance, infrastructure industries grew at half the rate of manufacturing industries. This means that the mismatch between the availability of infrastructure and the requirements of the rest of the industry is widening. What is emerging is a potentially unmanageable infrastructural constraint. More important is the balanced growth of different components of infrastructure sector.

An example given in this regard is that of the high growth of 13 per cent in cement industry, which would increase the demand for coal to 500 million tonnes in 15 years, while its supply is likely to be only half. Thus, recognising the interdependence of different segments of infrastructuring industries and their relationship with other industries, a policy of balanced growth needs to be prusued, otherwise it would be difficult to sustain high growth rates.

Describing the provision of adequate and reliable infrastructure services at reasonable cost and with sustainable financing and pricing policies as a "demanding challenge" to India's economic development, "An Update" of the pre-Budget Economic Survey emphasised that "unless there are major improvements in this area, the momentum of growth in inudstry, agriculture and exports can be lost."

Further, the Update says "It is no

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exaggeration to say that the prospects of India's social and economic development depend crucially on the performance of infrastructure sectors, such as power, roads, railways, ports, irrigation and telecommunications." Bringing about the necessary improvements will entail a paradigm shift from the old public monopoly approach to one in which the providers of infrastructure services are also actively encouraged.

Need To Boost Infrastructure

The situation in different segments of the infrastructure sector has been dismal. In the case of power the installed capacity was 81, 164 MW as on March 31, 1995. The capacity addition in the first three years of the Eighth Plan, i.e. upto 1994-95 was 12,675 MW as against the Eigth Plan target of 30,858 MW.

In the oil sector, the position has been somewhat better till the last financial year. Crude oil production went up to 32.28 million metric tonnes (MMT) in 1994-95 from 27.03 MMT in 193-94. The progress was maintained in 1995-96, with a production of 35.193 MMT, which shows a growth of 9.02 per cent over the corresponding period of the previous year. In the current year, i.e. 1996-97, however, production is likely to go down by 4.8 million metric tonnes compared to the earlier estimates for the year—from 35.65 MMT forecast earlier to 30.85 MMT.

The production of natural gas in 1994-95 at 19.4 billion cubic metres (BCM) was higher by 6.0 per cent than 18.3 BCM in 1993-94. The growth was even higher in 1995-96 (16.4 per cent) with a production of 22.6 BSM. However, the gap between demand and supply is huge. Natural gas, which caters to only 8 per cent of the demand for commercial energy in India, is likely to play a major role in bridging the gap, between demand and supply of hydrocarbons in future.

In the telecom sector, whereas India has one line per 100 persons, Thailand has 11 and all developing countries taken together 6. So far as railways are concerned, there is an acute shortage of wagons. As for roads, while 55 per cent of internal transport of goods is handled by trucks, there is not a single super highway. The total length of dual carriageways is not more than 1,000 km in a national highway network of 34,000 km.

The situation is equally grim in ports. Delays range from 20 to 25 days in the unloading of bulk cargo at most of the ports and a maximum of 35 days. A World Bank study has estimated that the cost of container delays in Indian ports is US$ 70 million per annum.

Coal production at 253 million tonnes in 1994-95 represented a growth of 3.2 per cent over 1993-94. Non-coking coal production, contributing about 83 per cent to total coal output, increased by 4.3 per cent, whereas coking coal production declined by 1.8 per cent.

Special Policy Package

The government has announced a special policy package for the development of infrastructure. These include a five year tax holiday for enterprises engaged in developing, maintaining and operating infrastructure facilities, such as roads, highways, bridges, new airports, ports and rail systems. The Union Budget for 1996-97 has extended the facility also to irrigation, water supply, sanitation and sewerage systems. For backward areas a deduction of 25 per cent of income (30 per cent for companies) would be allowed for another five years. Such companies have also been exempted from Minimum alternate tax. Any dividend, interest or long term capital gains of Infrastructure Funds of companies established to mobilise resources for infrastructural facilities would be exempt form Income-tax.

As per the Budget for 1996-97, an Infrastructure Development Finance Corporation with an authorised capital of Rs. 5,000 crore is being set up to act as a direct lender, refinancing agency and provider of financial guarantees. Income of any fund dedicated to infrastructure has been freed from Tax. Plan outlay for infrastructure sector has been increased. To step up investment in infrastructure, a levy of two per cent as special customs duty on all imports, except those that carry a nil rate of duty or are imported at nil rates of customs duty for export production has also been proposed.

Clearly, India needs a more specific policy on infrastructure development and the role of foreign investment in it, some experts have suggested. There is need for better coordination between the Centre and the States in formulating policies in regard to infrastructure development. Further, besides foreign investment, innovative measures are needed to raise resources, required for the sector. One such source is the capital market, which is being looked at keenly by investment bankers. Another source is the debt market, which could provide additional support. Financial experts have stressed the need for the development of the capital market, which is reportedly in the process of gearing up for financing large infrastructural projects. About the debt market, these experts have suggested that the tenure of debt instruments be increased from 5-10 years (with redemption from the 5th to the 10th year) to 20 years or more for infrastructural projects. Besides, other constraints being faced by the industry also needs to be looked into and remedies provided. Of these the resources crunch is vital. ❐

The author is a veteran economic writer.

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Trade Scenario In Post-Independence Era

S. Sethuraman

By virtue of the radical shift from a highly-regulated to an outward-oriented economy, India has generated immense interest abroad, but it has a long way to go before emerging as a strong global player, opines the author.

INDIA'S development strategy launched in the 1950s, soon after Independence, aimed mainly at strengthening the industrial base of the country, especially in basic goods and heavy machine-building, and adopted the import-substitution model to achieve self-reliance. Exports were not viewed as an integral part of overall economic development, and such imports as became unavoidable were financed by drawing down foreign exchange reserves that had accrued to India at the time of Independence, in the form of sterling balances held in its favour for goods and services provided by this country during the Second World War.

Export pessimism dominated the mood of the early planners as it was rightly assumed then that until India's manufactures began to be diversified, there was little possibility of exporting manufactures while primary products and traditional manufactured goods faced poor demand prospects in the world market. It was during the latter half of the fifties, when the Second Five Year Plan was under way with its emphasis on heavy industry, largely in the public sector, that it began to be realised that India needed to export to be able to finance at least part of the maintenance and developmental imports.

The foreign exchange crisis that was looming by mid-1957 reinforced the importance of export growth as part of planned development. *The pessimistic view about the potential for export earnings gave way to a more positive approach in the Third Plan (1961-66) with the introduction of export promotion measures without deflecting from the thrust of import substitution and industrialisation.* It was clear by mid-sixties that the planners had under-estimated the import content of the inward-looking path of development opted by India. Pressures on balance of payments had already brought into existence the Aid-India-Consortium comprising the World Bank and developed countries interested in providing assistance to India. Renewed emphasis on exports was laid in the Fourth Plan (1969-74) which envisaged progressive elimination of dependence on foreign aid while the Fifth Plan (1974-79) identified certain sectors such as engineering goods, garments, leather manufactures and marine products for achieving increases in exports.

Thus, as against virtual stagnation in the 1950s, export performance improved to an average growth of 3 to 4 per cent in the 1960s, and was more impressive in 1970s with an average growth of 6.3 per cent in volume and 15.9 per cent in value terms.

But in the three decades, India's share in world exports had declined throughout from about 2 per cent in 1950 to 0.65 per cent in 1970 and dropped further to 0.42 per cent in 1980. This was the period when there was impressive growth in world trade and the opportunities were seized by many smaller Asian developing countries as well as the industrialising economies in Latin America to great advantage.

Paradoxically, even as India's export growth was being maintained or marginally improved upon, her share of world exports was declining. Over the three decades ending the Seventies, the share of exports in Gross Domestic Product (GDP) ranged from 4 to 6 per cent. *In a continental economy of India's size, the role of external sector in the development process was under-played so much that it took a succession of droughts, oil price shocks and balance of payments difficulties in the first two and a half decades of planning before the country could begin to see import substitution and export promotion as two sides of the same coin.* But heavy reliance on quantitative restrictions on trade through import and export controls and detailed industrial licensing kept India a closed economy.

As pre-requisites for export promotion, the Cash Compensatory Support (CCS) Scheme, the Duty

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Drawback and Import Entitlement Schemes were introduced in the late 1960s and this was followed by the formulation, for the first time, of an Export Policy Resolution (1970) which sought sustained export growth through productive efficiency and cost effectiveness to qualify for international competitiveness. The Decade also saw the appointment of a number of Committees relating to import liberalisation (headed by Dr. P.C. Alexander-1978), Controls and Subsidies (headed by the late Mr. Vadilal Dagli-1979) and Export Promotion (headed by Mr. Prakash Tandon-1980). These committees came up with suggestions for rationalisation in the structure of subsidies, promoting export of services and investments in export sectors with dynamic comparative advantages. Aided by a slow process of liberalisation, the share of manufactured exports went up from 45 per cent in 1970-71 to about 63 per cent in 1980-81.

At the beginning of the eighties, as India embarked on the Sixth Five Year Plan (1980-85), which coincided with the second oil price hike, there was far greater recognition of the weaknesses bred by the inward-looking industrialisation of the earlier decades. Heavy protection to domestic industry fostered a high-cost structure which was clinging to obsolete technology with the severe restrictions on imports of capital goods and technology. To tide over the balance of payments problems, India had to seek an IMF Extended Fund Facility of over five billion dollars in 1981 in the wake of the international oil price increase.

Foreign trade policy issues came to the fore in the early eighties and the view gained ground that India must avail of benefits of international division of labour by greater reliance on tariffs than import restrictions and liberalisation of imports of capital goods and technology. The pursuit of import substitution at a much higher domestic resource cost than would have been involved in acquiring equivalent foreign exchange through exports was discouraged in the Sixth and Seventh Plan documents.

The trade deficits galloped in the 1980s and were reflected in large current account deficits in the balance of payments. While large inward remittances and other invisible receipts helped, India also had to step up its external borrowings along with the steep rise in domestic borrowings to sustain the average GDP growth rate of 5.5 per cent and overcome the strains in BOP. With external environment becoming increasingly important for India's steady progress, the Government decided in mid-1980s to appoint a Committee on Trade Policies headed by Dr. Abid Hussain, the then Commerce Secretary and subsequently Member of the Planning Commission, and a Committee headed by Mr. M. Narasimham to examine issues related to a "possible shift from fiscal to financial controls".

The Abid Hussain Committee report was a path-breaking exercise and emphasised that trade cannot be separated from the national economy as exports are a means of transforming

Table I

(US $ Million)

Profile of Exports, Imports & Trade Balance

Year	Exports (Including re-exports)	Imports	Trade Balance	(Per cent) 'A' Five Year Average Growth	
				Export	Import
1950-51	1269	1273	-4	—	—
1955-56	1275	1620	-345	5.2	4.8
1960-61	1346	2353	-1007	1.9	9.3
1965-66	1693	2944	-1251	5.0	7.1
1970-71	2031	2162	-131	2.0	-5.7
1975-76	4665	6084	-1420	17.8	24.6*
1980-81	8486	15869	-7383	13.8	15.8
1985-86	8904	16067	-7162	4.5	6.1
1990-91	18143	24075	-5932	11.6	8.2
Post-NEP					
1991-92	17865	19411	-1546	-1.5	-19.4
1992-93	18537	21882	-3345	3.8	12.7
1993-94	22238	23306	-1068	20	6.5
1994-95	26331	28654	-2324	18.4	22.9
1995-96	31831	36370	-4539	20.9	26.9
1995-96 (April-Sept.)	12302	14278	-1976	26.37	32.79
1996-97 (April-Sept.)	16140	17953	-1813	9.91	5.20

Note: 'A'—Average of the previous five years.
*—Reflecting Impact of Oil price hikes of mid-seventies. (1973-74 & 1974-75 and 1979-80 & 1980-81)

Source: Compiled from Economic Survey 1995-96, Min. of Finance and RBI Annual Report 1995-96.

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domestic resources into foreign resources, which are necessary to finance the process of development. It focussed exports as an engine of growth though it did not recommend an export-led growth strategy and said export production must constitute an integral part of production in the domestic economy. While it would be desirable to conserve scarce foreign exchange resources by increasing the domestic production of importables, exports absorb a significant proportion of domestic production in a few sectors and can perform a catalytic role in other sectors by creating employment, developing skills and improving competitiveness.

Table II

1. India's Share in World Exports (Percent)

1950	—	1.91
1960	—	1.04
1965	—	0.90
1970	—	0.65
1975	—	0.50
1980	—	0.42
1985	—	0.50
1990	—	0.60
1992	—	0.52
1995-96*	—	0.57

2. India's Exports & Imports as percentage of GDP

Year		Exports	Imports
1950s		6	N.A.
1960s	(a)	4	"
1970s		6	"
1980s		6	"
1990-91		6.2	9.4
1991-92		7.3	8.3
1992-93		7.8	9.8
1993-94		8.9	9.4
1994-95		8.9	10.4
1995-96*		10.0	N.A.

* Estimates (Planning Commission)
(a) Average percentage for the Decade
Source: Economic Survey—Ministry of Finance, 1995/96 & RBI Annual Report-1995/96.

Significantly, the Committee went on to suggest the need for concomitant changes in industrial and other economic policies along with trade policies to increase the degree of competition in the economy, through a reduction in the degree of monopoly and removal of barriers to entry by new firms. Incentives in taxation for the export sector, replacement of quotas by tariffs over time and de-escalation of the high tariff structure were among its several recommendations.

The 1980s were marked by a strengthening of the export promotion strategy which comprised direct incentives such as CCS, DDS etc. as well as budgetary concessions and provision of imported inputs through liberal import licensing policy. From 1985, the Import-Export Policies were made durable for three years instead of annual revisions in order to provide a measure of stability to the trade policy. The efforts during the eighties were to give a fresh thrust to exports through a complex of incentives, which included exemption of profits in export proceeds from taxation, in order to enable the country to finance a larger proportion of imports and, secondly, to make the import policy liberal enough to provide the necessary inputs for export production and to help modernisation of industries and technological upgradation.

Thus, in the fourth decade of planned development (1980s), India was moving rather cautiously towards a regime of more open trade with the realisation that while import substitution had served the objective of building up domestic capabilities in a wide range of manufactures, the country could not for long shut itself off to the technological change and winds of liberalisation sweeping across several developing regions of the world.

And the fiscal and balance of payments crisis that erupted in 1991, in the wake of the third oil price shock triggered by the Gulf War (1990), required drastic remedies undreamt of in the Indian context of planning on a socialistic pattern of development which relied on a command economy.

Table I gives a broad picture in dollar terms of exports and imports and trade balance in the period 1950-91 as well as in the five-year period 1991-96, commonly accepted as the "era of liberalisation" (which is dealt with in the following paragraphs). The growth rates are based on value terms with dollar as the bench-mark and relate to five-year periods till 1990-91. Table II brings out India's share in world exports and imports as percentages of the national economy (GDP).

Era Of Reforms

The year 1991 marks a watershed in the economic history of India, as the country went through a paradigm shift- from one of the most highly regulated economies of the world which was essentially inward-looking to a market-oriented system, reducing the role of Government in making economic decisions, as the means to achieve higher growth of the economy and its rapid integration with the rest of the world.

An economic stabilisation programme and structural reforms covering trade, industry, taxation, financial sector and capital market were put through turning the worst economic crisis that confronted India since Independence into an opportunity to usher in a quiet revolution which would enable the country to attain a trajectory of higher growth and, along with it, social equity.

Developments in the Gulf region in 1990 exerted pressures on India's balance of payments and with outflow

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of capital, mainly NRI deposits, the foreign exchange reserves declined to about one billion dollars (barely two weeks of imports) in June 1991. The country was for the first time on the verge of defaulting on its external debt. There was no choice but to have recourse to a structural adjustment programme with the International Monetary Fund providing a standby credit for a stabilisation programme coupled with wide-ranging reforms.

The first steps were in the area of Trade Policy by devaluing the rupee by 22 per cent in dollar terms, eliminating export subsidy and reducing import licensing restrictions. A dual exchange rate system was ushered in but by March 1993, it was unified and a fully floating exchange rate regime in which the exchange rate is determined by market forces of demand and supply came into being. The foreign exchange market was widened and deepened, and in August 1994, the rupee was made fully convertible on current account, trade and non-trade. The downward adjustment of the rupee was designed to improve the country's international competitiveness and correct the imbalances in trade and current accounts.

Beginning with the 1991-92 Budget, Government also launched a phased reduction of import tariff bringing down the maximum from 300 per cent in 1990 to 50 per cent by March 1995. The changes resulted in lowering the import-weighted average tariff from 87 per cent in 1991 to 27 per cent in March 1995. The dispersion of tariffs was also significantly reduced and quantitiative restrictions were substantially eased. The trade reforms undertaken from 1991 helped to reduce the anti-export bias of Indian industry which was being exposed to both domestic and international competition.

The thrust of the Export-Import Policy (1992-97), made co-terminus with the Eighth Five Year Plan, is export promotion which is crucial for balance of payments management and at the same time the Policy facilitates the import of production inputs required for sustaining increased industrial growth and exports.

Exports have responded impressively to the policy reforms and after the slowdown in the first two years under the impact of macro-stabilisation measures, grew by an average of 18-19 per cent in the subsequent

Table III

Composition of Exports & Imports—1990s

(Percentage)*

	Commodity Group	1991-92	1992-93	1993-94	1994-95	1995-96
	Exports					
1.	Agriculture & Allied products (Tea, Cotton etc.)	17.9	16.4	18.0	16.1	19.1
2.	Ores & Minerals	5.2	4.0	4.0	3.8	3.7
3.	Manufactured goods	74.6	76.3	74.9	77.5	74.4
	(a) Leather items	7.1	6.8	8.0	8.2	6.0
	(b) Gem & Jwellery	15.3	16.5	18.0	17.1	16.6
	(c) Cotton yarn, fabrics made-ups etc.	N.A.	N.A.	6.9	8.5	8.1
	(d) Readymade Garments	12.3	12.9	11.6	12.5	11.6
	(e) Handicrafts	4.7	4.6	3.4	3.1	2.6
	Imports					
A)	**Bulk Imports**	44.6	44.1	39.2	39.5	39.1
	1. P.O.L.	27.4	27.0	24.7	20.7	20.8
	2. Fertilisers, Metals and other bulk items	16.7	14.7	13.1	14.8	15.8
B)	**Non-bulk Imports**	55.4	55.9	60.8	60.5	60.9
	1) Capital Goods	21.8	20.7	26.8	26.7	28.0
	2) Export related items like precious stones chemicals, Textile Yarn etc.	18.4	19.0	18.8	15.1	14.4
	3) Others	15.2	16.2	15.2	18.8	18.5

'*' Worked out in Dollar terms.

Source: RBI Annual Reports 1993-94 & 1995-96.

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Table IV

(Percentage shares)

Direction of India's Trade In 1990s

Destination		Exports (Percentage share)					
		1960-61	1970-71	1980-81	1985-86	1990-91	1994-95
I	OECD of which	66.1	50.1	46.6	50.8	53.5	58.7
	(a) EU	36.2	18.4	21.6	17.7	27.5	26.7
	(i) Germany	3.1	2.1	5.7	4.7	7.8	6.6
	(ii) UK	26.9	11.1	5.9	4.8	6.5	6.4
	(b) USA	16.0	13.5	11.1	18.1	14.7	19.1
	(c) Japan	5.5	13.3	8.9	10.7	9.3	7.7
II	OPEC	4.1	6.4	11.1	7.7	5.6	9.2
III	E. Europe	7.0	21.0	22.1	21.1	17.9	3.6
IV	Asia	6.9	10.8	13.4	10.6	14.3	20.1
V	Africa	6.3	8.4	5.2	2.7	2.1	2.5
VI	Latin America	1.6	0.7	0.5	0.2	0.4	1.3
Imports (percentage share)							
I	OECD of which	78.0	63.8	45.7	53.6	54.0	51.4
	a) EU	37.1	19.6	21.0	26.6	29.4	24.8
	Germaeny	10.9	6.6	5.5	7.9	8.0	7.6
	UK	19.4	7.8	5.8	6.4	6.7	5.4
	b) USA	29.2	27.7	12.9	10.5	12.1	10.1
	c) Japan	5.4	5.1	6.0	9.0	7.5	7.1
II	OPEC	4.6	7.7	27.8	17.4	16.3	21.1
III	E. Europe	3.4	13.5	10.3	11.0	7.6	2.4
IV	Asia	5.7	3.3	11.4	11.9	14.0	14.2
V	Africa	5.6	10.4	1.6	3.0	2.2	2.9
VI	Latin America	0.4	1.0	2.5	2.7	2.3	2.7

Source: Economic Survey—Ministry of Finance 1995-96.

three years (1993-94 to 1995-96) in dollar terms. Exports have now diversified both commoditywise and countrywise with an increasing share going to the rest of Asia, particularly East and South East Asia with which India is trying to evolve increased trade and investment cooperation, given the rapid growth and the dynamism of these econmies.

India's exports have undoubtedly gained from the expansion in world trade-as will be seen from the fact that a slowdown in global exports in 1996 has also affected India's exports to some extent in the current year—but the Government is confident that the export target of 38 billion dollars in 1996-97 would be achieved as against the 31.8 billion in 1995-96. A target of 75 billion dollars of exports by 2,000 A.D. has been set and this would mean maintaining an annual export growth of around 20 percent in dollar terms over the next four years. This would facilitate a steady rise in the ratio of exports and imports in GDP and take India closer to one per cent as its share of world trade by the year 2001. Table III provides growth trends in exports and imports of major commodity groups in the post-liberalisation period. Changes in the direction of India's trade from 1960-61 are brought out in Table IV.

In recent years, a larger percentage of imports are covered by exports—88 per cent in 1995-96. Imports have also increased with industry staging a strong recovery from 1993-94 onwards to record double digit rates of growth. The higher import bill also reflects the demand for mass consumption items like pulses and edible oils apart from the growing dependence on imports of petroleum crude and products to keep pace with the rapid growth in energy use in the country.

The basic requirements of sustained export growth are competitive price of the product, quality, assured delivery at the destination, exchange rate stability with firm hold on inflation, cheaper credit and other incentives for export activity as it gets diversified benefiting labour-intensive items and rural areas, and adequate infrastructural facilities such as ports, power, communication and transport. In all these areas, both the Central and State Governments have to be actively involved in promoting and facilitating exports.

While there is correlation between India's export growth and the growth of world trade—and the Uruguay Round Agreements should over the years, enlarge opportunities for developing countries to increase their exports—the composition of India's export basket has remained largely the same for several years. It has been suggested that in selecting 'extreme focus' products for exports, more attention should be given to foreign exchange earnings per unit of domestic resources used instead of basing selection on the growth rates of exports in past years. At the same time, it is

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necessary to concentrate on identifying new products and locating new markets and improving the competitiveness of Indian exports through latest technology and efficient organisation of production and other facilities.

On the import side, despite successive reductions in tariffs until the 1995-96 budget, the World Bank and IMF contend that protection levels in India are still high and that trade liberalisation lags behind East Asia and many other developing countries. They refer to restrictions on imports of consumer goods and the quantitative restrictions on agricultural imports. Replacing the ban on import of consumer goods with appropriate tariffs it is pointed out, would promote competition and also raise revenue while lifting of restrictions on agricultural goods would allow this sector greater opportunity to compete in world market. These remaining curbs are cited as a factor which affects the flow of foreign direct investment into India.

India has to assume many obligations implicit in the Uruguay Round Agreements such as conforming to the Trade-Related Intellectual Property Rights (TRIPS) and Investment measures. Although a ten-year time-frame is available for revision of India's Patents Law which does not at present provide for product patents, under the Uruguay Round Agreements, it has to establish a mechanism for filing of product patents from January 1, 1995. USA has referred the matter to the Dispute Settlements Body of the World Trade Organisation (WTO). India is also under pressure to lift import restrictions which are maintained for balance of payments reasons in view of its relatively improved BOP position. This matter is under discussion in the WTO Committee on Balance of Payment Restrictions which is likely to lay down time schedule for elimination of restrictive measures when the consultations are resumed in January 1997.

Table V

India & Select Asian Economies—A Comparison

(1994) Billion US Dollars and percentage

		Exports $ bn.	% Share in world	Imports $ bn.	% Share in world	Rank in Exports
1.	China	121	2.9	116	2.7	11
2.	Singapore*	96.8	2.3	102.7	2.4	12
3.	South Korea	96	2.3	102.3	2.4	13
4.	Taiwan	92.9	2.2	85.5	2.0	14
5.	Malaysia	58.8	1.4	59.6	1.4	19
6.	Thailand	45.3	1.1	54.5	1.3	22
7.	Indonesia	40.1	1.0	32.0	0.7	26
8.	India	25.1	0.6	26.8	0.6	32

* Includes Re-exports of 38.5 bn. dollars.

Source: Trends and Statistics, International Trade-1995-WTO.

The foreign trade sector performance in the Eighth Five Year Plan has broadly conformed to the plan assumption of exports growing by 13.6 per cent per annum in volume terms. In the first four years, the average annual rate works out to 12.8 per cent. India's share in world exports increased from 0.52 per cent in 1992 to 0.57 per cent in 1995-96. Export to GDP ratio has improved from 8.2 per cent in 1992-93 to around 10 per cent in 1995-96. But in the case of imports, as against the 8.4 per cent per annum postulated in the Plan, imports increased by an average of 34.1 per cent in the first three years. The trade deficit and the current account deficit, however, will be well within the targets envisaged in the Plan and would be 1.7 per cent and 1.5 per cent of GDP respectively.

The Ministry of Commerce has set up a Committee to formulate a Long-Term Export and Import Policy for the period 1997 to 2002, co-terminus with the Ninth Plan. An India Brand Equity Fund has been set up to develop a brand building export promotion strategy in order to achieve a quantum export jump in comparatively shorter time framework, according to the Commerce Ministry. The Fund will work towards promotion of Indian brands and products in overseas markets.

India is committed to further liberalisation of its import regime, notwithstanding the dismantling of licensing controls over a wide area. At the same time, there are concerns whether developed nations of the world are implementing in letter and spirit their part of the obligations under the Uruguay Round Agreements. Many countries are resorting to protectionist devices in the guise of environmental hazards and exploitation of labour such as child labour. The obligations of providing access to imports of developing countries, especially textiles and garments, are being circumvented under one pretext or the other, even under the back-loaded integration of Textiles and Clothing into the World Trading System. Such

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restrictions are designed to keep out cheaper imports.

By virtue of the radical shift from a highly-regulated to an outward-oriented economy, India has attracted immense interest abroad, at both Governmental and private investor levels. India is one of the largest emerging markets, second only to China's, and the country has been experiencing inflows of foreign portfolio and direct investments—though not as large as in China and a few other countries—which were unthinkable in the world of even 1980s. Economic strength has become the principal determinant of a nation's standing in the international community, and even the most powerful country, the United States of America, looks for market opportunities all over, more especially in the dynamic Asia-Pacific region, as the best shield of security.

With the end of the Cold War, the East-West barriers have broken down. The rapid spread of liberalisation and globalisation is a historic development which has blurred both East-West and North-South divisions. Developing countries have been compelled to adapt themselves to conditions of global interdependence although in the process they run grave risks in the medium-term and are not assured of international safety nets.

In the rapidly changing world environment, each developing country must certainly concentrate on building its inherent strength and developing areas of comparative advantage and forge alliances with neighbours and, where promising, enter regional blocs which offer greater opportunities of trade and other exchanges to enhance national development. In the international arena, disadvantaged nations must make common cause and unite to advance their pressing needs more effectively than what has been witnessed over the last fifty years in the post-decolonisation era. This is the only way of securing a post-cold war order which is just and equitable.

India has a long way to go before it could emerge as a strong global player, as currently it occupies the 32nd place as a leading exporter of merchandise, well below several countries in East and South-East Asia (Table V). It has to make up for the time lost in its inward-looking route to development which left the country far behind in the international league, despite building a strong industrial base and possessing highly technical manpower, the third largest in the world. Indian planning did not take sufficient note of the gathering pace of global integration with the growth of merchandise trade exceeding the growth of output in virtually every year of the post-war period.

In recent years, India has begun to look East, is now a full dialogue partner in ASEAN (the 7-member Association of South East Nations) and expects to find a place in the Asia Pacific Economic Forum (APEC) by 1999. These should promote greater intra-Asian trade and investment flows even as India strives to gain an increasing share of exports into developed economies of the West such as the European Union and North America. Trade with Russia and Eastern Europe as well as Central Asian States holds prospects of considerable expansion over present levels and a more promising development is the initiative taken by 14 states of the Indian Ocean Rim for an economic cooperation grouping with a Charter expected to be signed in March 1997.

The bilateral and pluralistic approaches cannot, and should not, in any way dilute India's firm commitment to multilateralism which is the best safeguard against domination of the global economy by a few powerful nations. India's immediate responsibility is to solidify South Asian cooperation through SAPTA and ensure its early graduation to become SAFTA (South Asian Free Trade Area) to make it a region of good neighbourliness less prone to conflicts than at present. With 16 per cent of the world's population, India's weight in the international economy remains negligible, and the building up of internal strength with determination through higher saving, and investments and greater efficiency in the use of resources is a pre-requisite for the country to claim its due share in the global market-place. ❐

The author is a veteran economic writer.

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The North-East Forges Ahead

P.B. Barthakur

The vast North-east is now under seven orderly modern governments engaged in the task of social, economic and educational development of its 2.77 crore population belonging to as many as 40 distinct ethnic communities. The seven States are inter-dependent sub-systems with their ethnic pride. Development plans for the region should have an integrated approach, says the author.

FOR most of our countrymen today, the very mention of the North-east conjures up a picture of terrorism, insurgency, violence, bundhs, hartals and flood-havocs. It is because most of our newspapers still believe in the oft-repeated cliche—"bad news is good news".

We have to view events in the North-east in a broader perspective rather than with particular temporary events like terrorism, insurgency and the like. Here is an area—vast and varied—with pockets of people still thousand years behind civilization when India attained her Independence in 1947. The vast forested areas were broadly divided by the British as "administered", "partially administered", "unadministered", "excluded", "partially excluded", "independent", etc.

To usher in a whiff of sunshine of modern governance and to a systematic development process to these people together with social cohesion is a task of Himalayan proportion. This meant skipping over centuries. And the indomitable Indian genius just achieved that.

This vast area is now under seven orderly modern governments engaged in the task of social, economic, educational and other developments of its 2.77 crore population belonging to as many as 40 distinct ethnic communities.

Even today, there is imbalance in development, while expectations of the people has risen. This has led to some kind of frustration among some educated youngmen, which has taken the shape of armed insurgency and occasional terrorism.

Undue emphasis on cursory, though eventful, period is merely missing the wood for the tree.

As we are now on the threshold of the next century, it will be in order to examine how the north-eastern States figure in India's new scheme of things, both economically as well as politically.

The North-east consists of seven States. But it is one distinct economic region. Apart from its geographical isolation, there are some other factors too which stand in contrast to the rest of the country. It is mostly a hilly region and its population is highly biased in favour of the scheduled tribes and castes. These people are 29 per cent in Manipur, 93 per cent in Mizoram. The other problem is that all these States account for a higher rate of population growth. Five out of seven States in the region have literacy figure higher than the all-India percentage of literacy.

Nagaland, Mizoram and Arunachal Pradesh account for high level of per capita income. But they are behind the rest of the country in administrative, social and economic infrastructure.

In spite of all this, the north-eastern States have travelled a long way from a primitive economy to a rupee economy. From the old barter system of exchange in many hilly areas to the banking economy may be a far cry, but for nooks and corners in the north-eastern hills today the primitive economy is a thing of the past—long forgotten.

This area, which was till 1971 was one Assam State was politically reorganised into seven States with their individual democratic polity, at par with other Indian States. This gave a fillip to the development process, although demands from several ethnic States have been raised for boundary readjustments.

Although the region is one economic zone, its dissimilarities are many. There is dissimilarity in the population pattern, size of the population , level of development, urbanisation, literacy rates beside ethnic composition.

The state of economic development and parameters in these States do not reflect the general development pattern of the country as a whole.

Assam is in the centre of all these States and events in Assam find an echo in other States too. This State is much developed and has vast resources waiting for exploitation. Oil and tea

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Table-1

Demographic Profiles of North-Eastern States and India

Sl.	State	Percentage Increase in Population		Total Population (Million)	Density of Population per sq. km.	
		1971-81	1981-91	1991	1981	1991
1.	India	24.7	23.5	846.2	216	267
2.	Arunachal Pradesh	35.2	35.9	0.9	8	10
3.	Assam(*)	23.4	23.6	24.6	230	284
4.	Manipur	32.5	28.6	1.8	64	82
5.	Meghalaya	32.0	31.8	1.8	60	78
6.	Mizoram	48.6	39.0	0.7	23	33
7.	Nagaland	50.1	56.9	1.2	47	73
8.	Tripura	31.9	33.7	2.7	196	262

* : Based on the 1971 Census and the 1991 Census provisional results the population of Assam for 1981 has been interpolated.

Table-2

Real Per Capita Net State Domestic Product at 1980-81 Prices

(Rupees)

Sl. No.	Year	All India (PC NDP)	Arunachal Pradesh	Assam	Manipur	Megha-laya	Mizoram (*)	Nagaland (*)	Tripura
1.	1980-81	1625	1557	1200	1449	1361	1289	1383	1323
2.	1981-82	1687	1744	1307	1508	1379	1383	1666	1312
3.	1982-83	1697	1745	1367	1505	1361	1471	1941	1443
4.	1983-84	1801	1808	1375	1600	1354	1724	2251	1361
5.	1984-85	1827	1913	1457	1629	1385	2139	2579	1363
6.	1985-86	1858	2218	1483	1984	1427	2486	2800	1356
7.	1986-87	1889	2365	1474	1684	1415	3165	3034	1385
8.	1987-88	1933	2317	1521	1766	1483	—	3363	—
9.	1988-89	2105	2429	1558	1775	—	—	3463	—

(*) :As NSDP at constant prices are not available for Mizoram and Nagaland, so NSDP at current prices are taken.

are the major industries in Assam and together they used to earn about half of the country's total foreign exchange until a few years ago. There is scope for development of industries based on fruit products, wood, gas and petro-chemicals. There are four large oil refineries working there. There is also possibilities for industries based on rubber, coal and non-metallic mineral products.

Events have overtaken Assam during the past few decades. Assam started planning with an initial advantage of having a per capita income higher by Rs. 50.4 in 1950-51 in relation to the all-India average. It is sad that during four and a half decades of planning, Assam's initial advantage got completly washed out. Assam since then is lagging behind steadily and by 1984-85, the State's projected per capita income became lower by Rs. 212.9 compared to the all-India average.

The industrial base of Manipur in 1980-81 consisted of food products, wood and wood products, paper and paper products and repair services. After 1987 an industry of food products started with insignificant results.

Meghalaya has wood and wood products as the main industry together with a mini-cement plant. Tripura has six factory-level industries like beverages, tobacco, wood and wood products, non-metallic mineral products and supply and repair services. By 1987-88, jute textiles and other manufacturing products emerged.

Thus, taking examples of these States in the north-eastern region, one can surmise that the industrial base of the region is indeed narrow. Again, the industrial sector there mainly consists of first-stage processing only like grain mills, wood mills, etc.

Even in Assam, the major industrial activities are essentially resource-based in both oil and plantations. The backward linkages of these industries are rather limited while their forward linkages are with industries located in metropolitan cities elsewhere. "This is only an enclave-type economy, that is a few modern industries in the midst of traditional industries having very little or no interaction between the two", says one eminent economist from the State.

If we analyse the reasons for this gradual slide down in the case of Assam, we will find that successive five year plans have allocated lower and lower per capita expenditure (outlay) in the case of Assam, compared to the all-India average of Plan allocation. Except for the second and the third Plans, the per capita Plan outlay for Assam has always been lower than such expenditure taken for the nation as a whole. Even in these two Plans, the figures are only marginally higher.

Without going into statistics, if we consider the overall progress made by

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Table-3

Indicators of the Level of Economic Infrastructure

	Length of Highways Per Sq. Km				Distance from the All India Average Length of Highways Per Sq. Km. (Percent)				Credit Deposit Ratios of Commercial Banks including R R Bs Last Friday of June (Percent)	
	Total		Surfaced		Total		Surfaced			
	1980-81	1983-84	1980-81	1983-84	1980-81	1983-84	1980-81	1983-84	1981	1989
1. India	0.4	0.4	0.2	0.2	0.0	0.0	0.0	0.0	66.6	65.5
2. Arunachal Pradesh	0.1	0.1	0.0	0.0	60.3	67.1	86.4	88.8	12.7	19.8
3. Assam	0.7	0.7	0.1	0.1	-82.9	-54.6	50.9	69.2	45.4	58.6
4. Manipur	0.2	0.2	0.1	0.1	34.2	43.1	53.1	54.6	37.9	61.7
5. Meghalaya	0.2	0.2	0.1	0.1	45.5	48.3	35.9	64.8	17.8	24.1
6. Mizoram	0.1	0.1	0.0	0.1	85.3	70.6	93.4	74.6	5.4	26.6
7. Nagaland	0.3	0.4	0.0	0.1	11.0	7.0	76.9	66.8	27.9	42.6
8. Tripura	0.6	0.8	0.1	0.1	-78.1	-90.7	40.1	50.9	53.4	66.9

the North-eastern States during the past decades is simply phenomenal. Partition of the country in the East in 1947 isolated the entire North-east from the rest of the country both by rail as well as by road. The nation came to her help and swiftly opened up through communications through difficult sub-mountain regions of Bihar and West Bengal.

Until 1948 there was only one institution for higher studies—the Cotton College at Guwahati—imparting education up to the degree level under the Calcutta University. Today there are in the region as many as seven universities including one I.I.T. There are four engineering colleges and five medical colleges, besides hundreds of degree colleges. There are four oil refineries. Other large industries and agro-based industries too proliferated. But one must agree there is further scope for improvement in the educational and industrial field, because the number of swelling educated unemployed youngmen have started feeling frustrated.

Lack of opportunities led to frustration among the youth, some of whom have taken to the gun-culture.

In planning development of the North-eastern region, one must recognise certain peculiarities of the area and the people's psychological mind-set. The seven States in the region are essentially inter-dependent sub-systems with their ethnic pride. Development plans should, therefore, have an integrated approach.

A unique feature of the region is its geographical isolation. This is a disadvantage. There is also the peculiar hill economies at work but all the units are highly dependent upon the rest of the country for their daily needs of final goods.

While planning development in the region, the experiences in the rest of the country might not be of much use to the planners. Therefore while planning any development, care should be taken to respect the socio-cultural background of the people.

The region is exotic with varied attractions like hill resorts, wild life, pollution-free environment. So there is ample possibilities for the development of a flourishing tourist industry, which should benefit local entrepreneurs and ensure employment to the local youth. The transport infra-structure—very weak at the moment—needs to improve before any worthwhile development plan can take root. There are also ample possibilities for the development of hydro power, as the region is full of swift-flowing rivers and water-falls.

In the present craze for economic liberalisation we should go rather slow in the region while planning foreign investments. The people of the region are not yet ready to absorb such massive foreign investment in the industrial sector. This might not benefit the local people at all while on the other hand such massive projects might only help increase local alienation. As the economy and the region's social structure is positioned today, the public sector should continue to play a major role in the North-eastern region's economic development. In this too the national role-model might not work. ❐

The author is a veteran journalist.

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Sports Scenario In Post-Independence Era

M.K. Dharma Raja

Though our sporting achievements are not commensurate with the country's vast human resource potential, there have been many truly outstanding performances by the Indian sportspersons who stole the limelight at the international level, says the author.

IN the fifty formative years of Independence India has registered success in quite a few sports disciplines though it is known that our endeavours in the overall international context are not commensurate with the country's vast human resource potential. The comparatively smaller segment of India's population actively involved in various competitive sports has been rather belatedly equipped to meet the challenges of the constantly improving standards of the modern international contests. The long years of alien domination and unsettled conditions during this period had snuffed out the age-old Indian traditions in this sphere.

Looking back over the years, however, we can definitely see some significant milestones redounding to the credit of Indian sportsmen and women who claimed the limelight in the international arean. It may be relevant here to cite the findings of the parliamentary Committee that examined India's performance in International Sports. Its report says, *"There have been glorious patches of sunlight in the generally cloudy landscape of Indian sports. India has reigned supreme in hockey for decades together. Besides we were world champions in Billiards and Snooker and our Cricket team has gladdened our hearts many a time. In other sports also, there have been occasional flashes in the pan, like K. Malleshwari and Kunjurani becoming world champions in weightlifting and Jaspal Rana dominating the shooting ranges"*. Months after this report was presented came the tennis triumph of Leander Paes at the Atlanta Olympics when he won a bronze medal for India by trouncing players much above him in world rankings.

An event of great significance in post-Independence India was the staging of the First Asian Games in New Delhi in 1951. It was the vision of sports promoters Prof. G.D. Sondhi translated into reality with inspiring support and encouragement by Prime Minister Jawaharlal Nehru. Over the years Indian sports persons have enjoyed their share of laurels in the Asian Games, the Commonwealth Games and in a few other international contests. But participation in the Inaugural Asiad continues to evoke nostalgic memories. Indian then fielded a 49-member athletic squad and bagged ten gold medals-one short of the top performers—Japan. At least one medal for each discipline came India's way.

India's total haul was 10 gold, 10 silver and 7 bronze medals. Indian women though hitherto unexposed to international contests won two silver and five bronze medals.

Quite a few performance by Indian participants enlivened the scene at the first Asiad. Foremost among these was the sprint double by Lavy Pinto who won the 100 and the 200 metres sprint and thus became the "fastest man in Asia". Of the other gold medalists, Madanlal in shot put and Parimal Roy who had won the "Mr. Asia 1951" best physique contest contributed to India's encouraging record at the meet.

Besides the fine showing in athletics, India gained the distinction of defeating the formidable Iran in the Football final. This feat was repeated eleven years later when India recaptured the Football gold at the Jakarta Asiad. In aquatics, India secured a rich bag of four golds swelling the games total to 15 gold, 16 silver and 21 bronze medals.

In the next three decades a number of Indian athletes inscribed their names in the scroll of honour at successive Asian and Commonwealth Games as well as at other international meets. Sriram Singh in the 800 metres, the double gold winner Hari Chand in the 5,000 and 10,000 metres, Gurbachan Singh and V.S. Chauhan in the decathlon, T.C. Yohanan and Suresh Babu in the log jump, Joginder Singh in the spot put and Mohinder Singh Gill in the triple Jump accounted for India's fair share of gold medals at these competitions.

But the most outstanding among

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them all was the "Flying Sikh" Milkha Singh who blazed the athletics firmament as a performer extraordinary. Emerging as a champion runner at the Third Asian Games in Tokyo winning the gold in the 200 and 400 metres races and breaking the records in both, he went on to make waves in a wider horizon. After his rousing feat at the 1958 Commonwealth Games at Cardiff where he won the gold in the 400 yards race, Milkha was awarded the Helmes Trophy for the best runner in the event. Within two years came the magic moment at the 1960 Rome Olympiad that witnessed the "race of the century" with Milkha returning his career-best time of 45.6 seconds in the 400 metres. He was restricted to the fourth place in the race in which the American Otis Davis clocked 44.9 seconds though Milkha with three others had broken the previous Olympic record. Milkha Singh failed to mount the victory stand but had gained the distinction of having his name inscribed in the Olympic roll of honour.

The return of the Asian Games to New Delhi will on all accounts remain emblazoned in memory as the foremost event in the sports chronicle of the era. It saw the largest representation and the highest number of disciplines in the Asiad calender until then with 33 nations competing for honours in 21 disciplines. More remarkable was the manner and the momentum in which an array of sophisticated sports edifices took shape with less than twenty months before the countdown to the Games. "India can do it" was the clarion call that galvanised an entire squad of sports enthusiasts. There was a total mobilisation of sports-effort. It was as if a magic wand was wafted and at least half-a-dozen ultra-modern sports stadia came up in record time. Among these was the magnificent Jawaharlal Nehru Stadium and the splendid Indraprastha Indoor Stadium, the largest in Asia and the third largest in the world.

The outstanding success in the organisation of the Asiad in India's capital was followed by the award to Mrs. Indira Gandhi of the blue riband of International Sports the Olympic Gold Order. It was in recognition of the Indian Prime Minister's contribution to the promotion of sports in the country.

At the New Delhi Games, India ran up a total medal tally of 57—a shade behind the two Asian sports superpowers—China and Japan. Charles Borromeo who set up a new record in the 800 metres, Bahadur Singh in the shotput, Chand Ram in the 20 k.m. and M.D. Valsamma in the women's 400 m hurdles walk were the notable gold medal winners in athletics.

The emergence of P.T. Usha as the Asian sprint Queen was a conspicuous sequence of the past decade. She narrowly missed the bronze in the 1984 Los Angeles Olympics. But since then for another few years Usha harvested a rich crop of gold medals with feats of clinching the first place in individual track events—the 100 metres, the 200 metres and the 400 metres hurdles. The Track Queen achieved the rare feat of winning five gold medals and a bronze at the 1985 Asian Track and Field Championships in Jakarta, setting a new record in each of her individual events.

The finest moment for this Athletics Queen was at the 1986 Seoul Asiad where she notched up four gold medals and a silver. Usha's resounding win in two events, the 400 metres hurdles and the 400 metres flat were record-breaking efforts. The only woman among the handful of Asian athletes reckoned to be in world class, P.T. Usha, was presented the (Best Athlete) award of the Asian Track and Field Coaches Association.

Shiny Abraham (now Shiny Wilson) is another woman athlete who had been shaping very well. She established a new meet mark at the 1985 Jakarta Championship—an event in which she also had won a place in the semi-finals at the 1984 Los Angeles Olympiad. For Shiny and India it was a moment of ecstasy followed by agony when she outran the rest at the 800 metres race in Seoul only to be found disqualified for changing the track.

While Usha claimed four of the five gold medals won by India at the Seoul Asiad, the distinction of wresting the fifth was of Kartar Singh in the 100 k.g. free-style wrestling. Kartar, who had won the silver in the New Delhi Games, was a gold medalist at the Bangkok Asiad in 1978.

After the 1986 Seoul Asiad Indian athletes failed to register any notable success at international meets, except for a few gold medals secured in individual events all at the Asian Track and Field Championships. These were limited to the golds fetched by Shiny in the 400 metres flat in 1991, Bahadur Prasad in the 5000 metres race and Jyotirmoy Sikdar in the women's 800 metres race in 1995.

The "golden touch" for Indian hockey continued at three successive Olympic Games following Independence. The Olympic hockey crown was retained by India in London in 1948, Helsinki in 1952 and in Melbourne in 1956. This winning spree came to a halt at the Rome Olympics in 1960 when Pakistan put it across India by a solitary goal, thus terminating the country's 32-year long hockey supremacy. Other nations had meanwhile improved their prowess and skill in the game by leaps and bounds. But Indian had no difficulty in regaining the Olympic title at the 1964 Tokyo Olympics. The crown again slipped away from India's hands until

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it was regained by a youthful Indian team at the 1980 Moscow Olympiad. We lost the Olympic title again at Los Angeles four years later. Despite the sustained coaching and promotion efforts our hockey contingents have failed short of the superiority attained elsewhere abroad. Hockey supremacy has, in fact, shifted away from the Indian sub-continent.

In Badminton, India had done well enough in the early years of Independence through internationally ranked performers like Davinder Mohan and Amrit Dewan, Nandu Natekar, T.N. Seth and Suresh Goel then held the stage as players of distinction in international class until the mid-fifties. Natekar who at one time was ranked the world's No. 4 won the singles at the Selangor International Tournament in 1956. Six years later he and Meena Shaw won the Mixed Doubles title in the Bangkok King's Cup International Tournament. Natekar proceeded to annex the men's singles title at this tournament the following year. Another Indian who made his presence felt in the courts was Dinesh Khanna. He won the Asian title at the ABC Championships staged in Lucknow in 1965.

It was Parkash Padukone who in the late seventies and the early eighties strode the international courts as a champion par excellence and was ranked among the world's best. Prakash marked his appearance on the international circuit by hustling some front-ranking players. He overthrew Derek Talbot of England at the 1978 Commonwealth Games at Edmonton to annex the gold for India.

Prakash Padukone heralded a series of breath-taking triumphs winning the first ever prize-money Masters Tournament at the Royal Albert Hall, London, in September 1979 defeating formidable opponents like the former All-England champion Svend Pri and Frost Hansen. Riding the crest of victory, he won both the Danish and Swedish Opens, thus annexing all the titles on the European Circuit. And then came the supreme test, the All-England at Wembley. Prakash again trounced a host of titans in the game and cruised to the final to encounter the reigning champion Liem Swie King of Indonesia who had won the title two years in a row. The Indian ace succeeded in pulvarising the mighty champion 15-3,15-10. Padukone had done it, and he became the first Indian to win the All-England crown. It was a victory that deserved to be enshrined in letters of gold in the pages of Indian Badminton. Prakash troubled by a series of physical stress and strain was later unable to remain in superlative form. But he has in recent years been imparting the game's expertise to our aspiring players who somehow have not advanced beyond the middle level on the international stage. India today occupies a place of honour in international tennis by virtue of often holding a place in the elite World Group of the prestigious Davis Cup Championships. For years India has been occupying the foremost slot in Asian Tennis. Scores of stalwarts have helped the nation attain this eminence. *The trio of Ramanathan Krishnan, Vijay Amritraj and Ramesh Krishnan stood out as beacons inspiring younger players to emulate them. The mantle has now fallen on the shoulders of the valiant Leander Paes who has managed to vanquish some of the world's top performers in the Davis cup arena.* Paes had heralded his advent by winning the Wimbledon Junior Singles Championship in 1990.

Ramanathan Krishnan who won the Junior Wimbledon title in 1953 went on to annex the Asian Championships three times. This immaculate touch-artist who was ranked the world's No. 3 in 1960 reached the Wimbledon semi-finals twice. He was awarded the U.S. Helmes Trophy as the foremost amateur sportsman of Asia. After, Krishnan senior, it was Vijay Amritraj who at one time or the other had defeated all the superstars of international tennis. The game's honours came to Vijay in quick succession including a series of Grand Prix titles staged in India. At the most-remembered 1973 Wimbledon semi-finals, he was leading the ultimate champion Jan Kodes of Czechoslovakia and poised to wrap up the match but missed the crucial point and that through a net-cord volley. Vijay had the distinction of being bracketed with champions Borg and Connors as the ABC (Amritraj, Borg and Connors) of world tennis.

Like father like son, Ramesh Krishnan who also won the junior Wimbledon title for long held aloft the Indian flag on the international circuit. Also like his father Ramesh was a touch-volley artist and had at one time or the other trounced most of the renowned players in the world arena. He made it to the Wimbledon quarter-finals in 1986 and remained India's main prop in the Davis cup matches in the course of the eighties. A number of international titles stood against his name. Among those whom he humbled by dint of his steady game were the redoubtable Jimmy Connors, Pat Cash and other superstars on the world circuit.

Earlier, Ramanathan Krishnan with Premjit Lal and Jaideep Mukherjea was the main architect of India's success in the Davis Cup rounds during the sixties. In the six years between 1962 and 1968 India figured in four inter-zonal finals. Meanwhile, the Amritraj brothers—Vijay and Anand—had entered the scene to resume this ascendancy when in 1974 on winning the semi-final India declined to meet South Africa in the

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final because of its then White-dominated policy of racial discrimination.

Subsequently, the Ramesh Krishnan-Leander Paes combination scored stunning triumphs against the formidable squads from Switzerland, France and others who had some top-ranking players. This winning spree continued after Ramesh made way for younger players like Gaurav Natekar and Mahesh Bhupathy to team up with Leander. India's dominance in Asian Tennis was confirmed with our contingent winning both the team and the doubles gold medals at the 1994 Hiroshima Asiad. And at the 1996 Atlanta Olympics Leander Paes distinguished himself by claiming the men's signals bronze medal after decimating some world-ranking opponents.

In the game of cricket the Indian duo of Sunil Gavaskar and Kapil Dev have been in the limelight by virtue of their impressive individual records in the two departments of batting and bowling. Gavaskar holds the world record of thirty four Test centuries. He totalled an aggregate of 10,122 runs in Test Cricket. All-rounder Kapil Dev has the highest tally of 434 wickets in Tests. Both have thus inscribed their names indelibly in the annals of the willow game. And within a few years India's youthful Test captain Sachin Tendulkar has been hailed as among the currently best batsmen in the game.

Over the years, especially since 1971 when Indian scored twin victories against the West Indies and England on their soil, our national teams had registered triumphs over each and every Test-playing country. The golden period of Indian cricket was the decade-and-a-half starting with the seventies when India's spin quartet E. Prasanna, S. Venkataraghavan, B.S. Chandrashekar and Bishen Singh Bedi made it a routine of sending the opponents hurtling down to defeat through their beguiling bowling magic. And earlier for about a decade after Independence, the incomparable Vinoo Mankad shone in the cricket arena as one of the finest all-rounders. It was a proud moment for Indian cricket when our national team mounted the victory stand at Lord's in England in 1983 winning the World Cup after beating the hitherto invincible West Indies squad. It was a victory that turned the cricket world upside down. That India's emergence as the one-day cricket champions was not just a flash in the pan was proved by more wins in the limited overs international like the Rothman's, the Asia and the Sharjah Cups. The most notable among these was the victory in the World Cricket Championship in Australia in 1985 at which Ravi Shastri was declared the "Champion of Champions". India's outstanding success in this type of competition came recently when our team under Sachin Tendulkar turned the game's form records upside down by beating the all-conquering South Africans most convincingly in the Titan Triangular series in which Austrialia was the other participant. South Africa who were on a winning streak of thirty out of thirty three matches in the past two years met their first defeat—this time at India is hands.

Notable success also came to India in the top-of-the-table game—billiards, in which India retained the world crown for a number of years. Wilson Jones was the first Indian to lift the billiards crown at Calcutta in 1953. He regained the title at Auckland in 1964. Michael Ferreira regained the crown for India in 1977. He completed a unique "double" by winning the Open in New Zealand, capturing both the World Amateur and Professional titles. Ferreira retained the title and remained the World's billiards Champion four times. Geet Sethi took over from Ferreira at the New Delhi Championships in 1985. Sethi also became the first Indian Professional World Championship in the game in 1991. He regained the title for the third time in four years and remained at the top until 1995.

In the twin-game of snooker, Om Agarwal won the World Amateur title in 1985. Two-Indian women, Malleshwari and Kunjurani covered themselves with glory at the Asian and World Weightlifting Championships in the course of the past few years. Malleshwari struck gold in her weight class both at the 1994 Istanbul World Championships and the 1995 Pusan Asian Championships. Kunjurani who also performed excellently in her class topped the table at Pusan where the Indian women's team emerged as the continental champions.

Shooting is another discipline at which Indians have acquitted themselves creditably though success at the ranges has been achieved only to a limited extent. It was Dr. Karni Singh who first put India on the world's shooting map by claiming a silver medal at the 1962 World Championships. He went on to win a silver and a bronze at the Teheran Asiad in 1974. Randhir Singh won a gold medal at the 1978 Asiad. Mansher Singh bagged the silver at the Asian Trap Shooting Championships in Manila in 1993. A year later the teenager Jaspal Rana burst on the scene winning the gold at the Junior world Shooting Championships at Milan in 1994, Rana then proceeded to win the gold in the centre fire pistol event at the Hiroshima Asiad in the same year. And he followed it up by annexing the gold in his event at the Asian Shooting Championships in Manila in 1995 where the Indian team also won a silver and two bronze medals.

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Gender Justice: The Changing Scenario

Promilla Kalhan

Though the contribution of Indian women to the country's development process is creditable, gender justice is called for in various situations. Equality between men and women is of course there on paper, but the reality is often somewhat different.

THE contribution of Indian women to the country's development process since Independence and during the freedom struggle has been creditable. It has been a source of unique strength for reaching national goals. As housewives women have kept the home fires burning so that their menfolk can go out to work and their children attend school and college. The unpaid job of bringing up the family, a labour of love, has never been evaluated in terms of money. A wholly dedicated lot, working silently most of them have been too busy to think of their own rights

With rising prices and the spread of education, the pattern of life has changed in some measure in towns and cities where both husbands and wives go out to work. The concept of shared housework is catching on. In rural areas where seventy percent of the population lives, women have always shared their part of farming activities. They do most of the labour—intensive work like sowing, transplanting, weeding, threshing and post-harvest operations like shelling, grading and processing. Agriculture is the one field where women participate in decision making. This they do with regard to seed management, biomass-utilization, marketing and other post-harvest processes besides livestock management.

Rural women

For long years before Independence, Indian farmers, both men and women, continued to use age-old local tools and implements which were slow in operation and caused considerable fatigue and drudgery. Many of these tools are still in operation. But since Independence many new farm technologies have been developed which reduce the drudgery and increase work efficiency, particularly in relation to the work handled by women. Another advantage of the new tools is reduction in the cost of production. According to Dr. M.S. Swaminathan the well-known agriculturist scientist: "It is a happy augury that the Government as well as International Agencies have been paying more attention lately to agricultural and rural development sectors for eradicating hunger and poverty. *While rural women have been equal partners in agricultural development, their role and participation have been more pronounced in the lower socio-economic strata of the rural society. Since the 1970s global concern for the emancipation of women in general and farm-rural women in particular has grown.* National and international interactions in the area have been helpful in sensitising politicians, scientists, planners, administrators, extention workers and farmers including farm women. Scientific and technological empowerment of rural women alone can usher in prosperity to them as well as the rural society. In the past the research and development institutions have unwittingly ignored this angle. The contributions of farm women have not been quantified, recorded and recognised with the result they have been neglected from the main stream of development, may it be research, education or extention".

This is what Dr. Swaminathan wrote in a preface to a book entitled "Women in Agriculture—Technological Perspective" published in 1990. A few years earlier the International Fededration for Women in Agriculture was formed to give the much-needed push to women's role in agriculture. Since then new technologies to benefit women in their particular operations have been evolved. But perhaps they have still to reach women farmers in a greater measure, Dr. Swaminathan adds: "In many hill and remote areas of developing countries, such as the Himalayan region, agriculture is largely in the hands of women, since men tend to go to towns and cities in search of salaried jobs which can

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augment family income. Therefore, without the total intellectual and physical participation of women, it will not be possible to popularise alternative systems of land management to shifting cultivation, arrest gene and soil erosion and promote the care of the soil and the health of economic plants and farm animals".

Today there are more than thirty million women in India working in the rural sector—twenty million as agricultural labourers and approximately ten million who are employed in animal husbandry, handicrafts and related activities. In the hill regions of North-Eastern India, female labourers outnumber male labourers. This is also true of many parts of Tamil Nadu and Andhra Pradesh.

Women's Rights

Do women, particularly in the rural areas and those in towns and cities who are practically illiterate know their rights? This is doubtful. But women's rights have been strengthened from time to time since Independence. The following enactments were principally responsible for this particularly in respect of Hindu women. The enactments introduced in the 1950s included: The Special Marriage Act (1954), Hindu Marriage Act (1955), Hindu Succession Act (1956), Hindu Adoptions and the Maintenance Act (1956).

Gender Justice And Media

Gender Justice is called for in various situations but the subject requires further debate. Equality between men and women by and large is there on paper but the reality is often somewhat different. The feminisation of poverty is a fact of life. According to one estimate, one out of five of the world's 5.6 billion people who live in absolute poverty in respect of adequate food, safe drinking water, health care and education are women. Most of the world's single parent families are headed by women. *Unhelpful customs, of which there are many in India, SATI, for instance, have to be fought. The media can certainly bring some of these to light. Perhaps this is a cause that women journalists must take up and tactfully reveal so that their efforts are not frustrated by being dubbed as propaganda.* The Indian Constitution makes it mandatory to give equal protection to every citizen. But law alone is not enough. It must be effectively used.

For this a reform movement is necessary as is a sympathetic media and judiciary. It is first of all necessary to expose violence against women and cases of sex discrimination. Until recently women who were sinned against preferred to leave their jobs or opt out of a marriage rather than have their miseries publicised. The media could not come to their help.

The custody of children is an important consideration when women seek separation from their husbands. Some times the courts prefer men with a sound financial backing to take over the responsibility of children rather than their working wives. Here the emotional needs of women and their children are overlooked. When women are given maintenance, the position is not always satisfactory in actual practice. Recovery of the maintenance money is often a tortuous process. A divorced woman's crying need is for a shelter which cannot be fulfilled with the limited amount given to her by way of maintenance. Gender equality is largely a neglected subject in the media. Womens welfare organisations must press the point harder so that it becomes generally known. As things stand women find it difficult to obtain the right jobs as well as proper promotion. They still do not have a share in joint family property except in a few states. There is ample violence against women. The police needs to be sensitised to women's problems. This can be done through special educational courses at the time candidates enter the service. A word of praise for the judiciary is deserved. The Supreme Court has passed some helpful judgements concerning women.

Role of Women's Commission

The Women's Commission has been holding Mahila Adalats (a counterpart of Lok Adalats) to resolve cases of domestic dispute which result in speedy justice. The Commission has called for strengthening laws to protect women in various ways. For instance it is pressing for the passing of a law making rape a non-bailable offence. The bill has been pending for two years. The problem of child prostitutes aged between eight and sixteen years is a pressing one. According to Ms. Mohini Girl, Chairperson of the Women's Commission there are as many as 40,000 child prostitutes in Mumbai alone. Every district of India has 2,500 child prostitutes. Quite a few of them are from Nepal, Bangaldesh and Sri Lanka. Their entry into India through pimps and sale to brothels must be stopped. The condition of women prisoners in some of the larger cities is deplorable. The Women's Commission emphasises the findings by UNDP and published in its Human Development Report for 1995 concerning gender equality. It says: "Women's work is greatly undervalued in economic terms. The value of household and community work transcends market value". Various other studies concerning women are throwing up interesting facts. One of them concerns the decline of the female ratio as against men.

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One study points out that "the decline appears to have been significantly more pronounced among disadvantaged castes. In 1991, the female-male ratio among some scheduled castes was 922 women per thousand males compared to 927 women for the population as a whole. The Women's Commission is pressing the need for women's participation in political processes at all levels, to enlarge their access to education, health care, employment opportunities and to impart legal awareness of their rights to them. In relation to media the Commission regret that "the growing privatisation and commercialisation in particular of television, causes grave concern". A cheap portrayal of women is often there. Women in distress are a continuing factor for various reasons. The media does give exposure to such cases but to my mind not sufficiently.

A New Tribe

The print media in India until a few decades ago was male dominated. A few women trickled into newspaper offices in junior positions to facilitate the production of sections devoted to matters of interest to women—fashion, housekeeping and child rearing. Contributions by women scribes were mostly limited to these subjects. Since women were basically seen performing a decorative function, their most valuable asset being physical beauty, their energies were meant to be directed by and large towards domestic matters. Most of the advertisements in newspapers and magazines emphasised these aspects. *With the spread of education involving girls, a changing ethos facilitated by a modern life-style engulfing youth, a new tribe of young women emerged. They asserted their right to an identity different to their mothers; who had grown up after the accepted image of submissive, docile womanhood dependent on man, whether their fathers or husbands.* With rising prices it became a fact of life that both husband and wife must go out to work in order to keep the home fires burning. This was bound to be reflected in the print media and newspaper offices began to be flooded with women job seekers. It used to be said until a few years ago that newspaper work was unsuitable for women on account of irregular working hours, night shifts on the desk and the hazardous nature of assignments which might take a reporter anywhere like riot-torn areas.

However, as the modern working women came into her own and as she stormed into men's preserve, proving that she could handle any job that a man did with equal efficiency and perhaps greater seriousness, newspapers doors were pushed open and women strode in. Middle class working women were viewed with certain amount of disapproval to begin with and that in a country where a very large percentage of its agricultural work force consists of women. In cities mansions are built with the help of women construction workers. But the middle class was a thing apart. Women journalists, therefore, must bear the responsibility of working to raise the status of women and changing society's attitude towards them.

Reality

Though the Indian Constitution gives equal rights to men and women, Indian woman has not achieved absolute equality in actual practice. There is the rule of equal pay for equal work which none can challenge but in actual practice women are sought to be kept down in other ways. As is clear, they find it difficult to achieve access to high-level jobs where men reach more easily than them. This is one way of discriminating against women. However, women government servants are better off in this matter. Women in decision-making positions can be seen in various fields supported by the government. Women in the services-the IAS, IPS and the Foreign Service have been doing a commendable job. The sphere of women's income earning activity is no longer limited to teaching, nursing and medicine. Whether it is advertising or the arts, architecture or any other man-sized profession like law, they are a factor to reckon with.

Women in India abound in the unorganised sector. In the past they suffered because of inexperience of trade union activity. But perhaps they are well on the path of equality with men in this respect. Women have tended to lag behind in politics. As in many other countries it is men who dominate the scenario in Parliament. So far fighting an election meant big money. But with the recent election reforms and talk of reservations for women, matters may improve considerably for women candidates in the near future. Public work, whether it is connected with panchayats, State assemblies or Parliament requires a certain amount of training. Short courses for those keen to offer themselves as candidates would be useful.

In some ways Indian women have been better off than their western counterparts since they achieved the right to vote much ealier than some Western women. They played an active part during the fight for Independence, going to jail and suffering hardships. They earned their right to be the equals of men. The law has not been entirely kind to Indian women. Though protective legislation has made some headway there are still some shortcomings either in the law itself but mostly in the non-implementation

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of protective measures the government has initiated over the years since Independence. In the matter of property for instance, action needs to be taken to ensure a woman's right to part of her ancestral property. Though the amended Hindu law has given the Indian woman many new rights, she cannot be a member of the coparcenary and cannot ask for a partition. What she and her husband acquire during their marriage including a house if it stands in his name, she cannot be a claimant legally. But judicial activism particularly at the higher levels, has been of help. The need for a shelter for the estranged wife has been recognised in some of their pronouncements. Violence against women whether it is rape or harassment for dowry has been a serious matter. The Dowry Prohibition Act 1961, was amended in 1986 to make the law effective The period of filing a complaint was then left open. The Court now has powers to act on its own knowledge or on a complaint by a recognised welfare organisation. The offence has been made cognisable for the purpose of investigation. A new section on dowry murder has been introduced in the Indian Penal Code.

The sex-ratio between males and females in the population : 1000 males to 927 females is a matter of concern since child deaths among girls are higher than among boys. Also the drop-out rate of girls from school is higher and their admission to schools is lower compared to boys. However, there are hopeful signs for improvement in women's situation. The number of women job seekers through employment exchanges has gone up sharply, the average age of women at marriage has gone up and their expectation of life at birth has improved.

The Five Year Plans have been paying special attention to women's welfare. To spearhead welfare measures, the Central Social Welfare Board was set up in 1953. Later Plans pinpointed female education as a major welfare strategy and recognised women's lack of access to resources as a critical factor impeding their development. The emphasis currently has shifted from the welfare of women to women's development, so that they are a source of strength for reaching further national goals. ❐

The author is a veteran journalist.

CONTD. FROM PAGE 74

In the realm of adventure, two Indians, a veteran and a teenager, found their names inscribed in the Guinness Book of World Records. Mihir Sen at the age of 30 won encomiums as the world's greatest long distance swimmer when he set the record of swimming the seven seas in 1966. This record was bettered by the school boy celebrity Kutraleeshwaran who at the age of twelve crossed the English Channel and a year later completed crossing the other international seaways across the continents.

In Chess Grandmaster Viswanathan Anand, described as the "speed god" form India by many experts, brought immense glory to the country by his stunning exploits in the super-category international chess tournaments. He is not only India's first Grandmaster, but also brought about a chess revolution in the country inspiring a whole generation of youngsters. The first result of this was recently visible, when the child prodigy from Andhra Pradesh P. Harikrishna won the under-10 world title at Menorca, Spain.

However, it must be acknowledged that in many sports our performance have been below par, particularly in soccer, basketball, squash etc.

The saga of sports regeneration in Indian began taking shape after suitable infrastructure was laid and conducive promotion schemes were initiated in the wake of the 1982 New Delhi Asiad. Sports renaissance in the post-Independence era is in the process of unfolding itself through continuing endeavours to attain greater heights of international excellence. ❐

The author is a veteran sports writer.

Dear Reader

With a view to broadbasing the contents of Yojana, write-ups are invited on current socio-economic topics. Various economic issues, economic liberalisation and its impact, women's uplift, child and bonded labour and real life stories based on attempts to overcome hurdles, are welcome. Students are also invited to contribute pieces in about 1000 words for the column earmarked for them. The articles for the general category should be betweenh 2000-2500 words. The articles, in duplicate, should be written on one side of the sheet, in double space, with sufficient margin. An undertaking about the authenticity of the articles should also be attached.

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The Indian Railways

Atul Cowshish

As a carrier of 12 million passengers and over one million tonnes of freight everyday, the Indian Railways have played a vital role in the socio-economic development of the country. However, not every effort to improve its performance has been successful, feels the author.

THE Indian Railways travel in one day a distance that is three and a half times the distance between the earth and the moon. In other words, the Indian Railways traverse in less than seven hours a distance that a satellite takes six days to cover. But as the world's single largest railway system under single management, which carries 12 million passengers and over one million tonnes of freight everyday, these statistics do not come as a surprise.

Improving Passenger Amenities

At the time of Independence the first task was to integrate all 42 different lines owned by Rajas and Maharajas and British companies into one system, to give shape to the Indian Railways. Even more important was to make up as fast as possible for the manpower and other losses suffered on account of the partition on the country. A major consequence of this was that the rail link with Assam and the North-East was virtually cut off and had to be restored at top-most speed. Once that was achieved, attention was turned to improving passenger amenities, building indigenous manufacture facilities for infrastructure and modernizing the system.

Among the first step in that direction was to replace wooden coaches with steel-cum-aluminium coaches which were more durable and sturdy, were better suited to higher speed, and were less prone to catch fire. But a more significant decision was to introduce diesel engines which ran faster than the steam engines. Not everyone was happy when the first high speed diesel engine was imported from Canada but looking back it could be described as an important landmark in pushing the speed of the Indian Railways.

Self-Reliance

The country having firmly embarked on the path of planning with its accent on building a more or less self-reliant economy, almost all import by the Indian Railways was generally accompanied by agreement to transfer technology. Before long, the country was meeting several needs of the Railways indigenously with the setting up of big facilities like the Integral Coach Factory at Perambur (Chennai), Diesel Locomotive Workshop at Varanasi and Chittaranjan Locomotive Works. The Indian Railways had embarked on the path of self-relaince in the early years of the young nation.

The manufacture of diesel and electric locomotives within the country was a signal that the days of the steam locomotives were going to end. It was only in the 1970s that a decision was taken not to manufacture any steam locomotives in the country. Economic considerations and the competition from the diesel and electric locomotives led to the decision to end the magnificent era of steam locos. It was a sad news for the lovers of those "black beauties" which, however, could neither match the speed nor the capacity and performance of the diesel and electric locomotives. Ecological considerations, though not in vogue then, would have also been cited as a reason for saying good-bye to the steam engine.

Incidentally, the steam locos will not disappear totally from the map of the Indian Railways. The "toy' trains of Darjeeling and Ooty will continue their run into the next century. Another narrow gauge train, on the Kalka-Shimla route, however, was "converted" to diesel some time back.

Only Two Classes

With egalitarian considerations coming to dominate in the country, the first Janata Government had decided that Indian Railways should have only two classes, first and second. But to make the journey for the long distance traveller at least reasonably comfortable, cushioned seats were introduced in the second class coaches.

Soon, it was also decided that non-air-conditioned first class coaches will also go and their manufacture was stopped. The new second air-conditioned class came to replace the non-AC first class. The old type of first class coaches carried a maximum of 16 passengers in a compartment that resembled a drawing room with long sofa sets along the walls. It was a luxurious way of travelling, if one did not mind the heat and the dust of summers.

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The new AC II generally carries 46 passengers. Obviously, the rise in passenger traffic was forcing the Indian Railways to increase capacity. An attempt was made to popularize double-decker coaches. The idea could not catch on as the double-decker coaches were not considered safe enough in Indian conditions.

The Indian Railways, however, succeeded in their attempts to run faster trains, running at speeds of more than 100 km per hour. The first attempt in this direction was the introduction of Rajdhani Express between New Delhi and Howrah capable of running at 130 km per hour. The train proved to be an instant hit with the passengers and demand for similar trains on other trunk routes began to be made forcefully.

Calcutta Metro

Though its implementation took an inordinately long time for reasons not seen initially, a landmark event in the history of post-Independence Indian Railways was the decision to build an underground railway system: the Calcutta Metro. Indian Railways has at least developed an expertise to execute such a project anywhere in India or abroad.

Rajdhani Express

However, the country's priorities continued to be to start more surface and long-distance trains like the Rajdhani Express and the next in the Rajdhani series was introduced on the New Delhi-Bombay route. Today Rajdhani trains link Delhi and almost all State capitals, except those in the North-East. Jaipur and Ahmedabad are also not on the Rajdhani map but will be included soon when the Delhi-Ahmedabad route is converted to broad gauge. It may be added here that for safety reasons the Rajdhani trains are not run at their maximum permissible speed.

Table 1

Rolling Stock

Year	Number of Locomotives				Tractive effort per loco (in Kg.)	
	Stream	Diesel	Electric	Total	BG	MG
1950-51	8120	17	72	8209	12801	7497
1960-61	10312	181	131	10624	14733	8201
1970-71	9387	1169	602	11158	17303	9607
1980-81	7469	2403	1036	10908	19848	10429
1990-91	2915	3759	1743	8417	24088	12438
1991-92	2492	3905	1871	8268	24778	12593
1992-93	1725	4069	2012	7806	26090	13393
1993-94	911	4192	2117	7220	26366	14500
1994-95	347	4259	2302	6908	26960	22627

Passenger Coaches

Year	EMU coaches		Conventional coaches		Other coaches
	number	capacity	number	capacity	number
1950-51	460	87986	13109	854678	6059
1960-61	846	150854	20178	1280797	7415
1970-71	1750	340541	24676	1505047	8719
1980-81	2625	500607	27478	1695127	8230
1990-91	3142	609042	28701	1864136	6668
1991-92	3366	651944	29493	1910381	6491
1992-93	3444	667583	30322	1989339	6158
1993-94	3537	684927	30561	2028657	5955
1994-95	3618	699855	30060	1973499	5536

Shatabdi

A faster train, the Shatabdi series, has also been introduced from Delhi in recent years and has proved to be very popular with tourists and inter-city travellers. *The travelling schedule of the Rajdhani trains enables the traveller to spend the night on the train and reach his or her destination next morning well in time for a full day business. On the other hand, the Passengers travelling by Shatabdi, which is capable of a speed of 160 km per hour, can even return to Delhi in the evening.* The all air-conditioned Shatabdi trains is said to be providing a competition to the airlines flying from Delhi to destinations like Agra, Jaipur, Chandigarh and Bhopal. Of course, like the Rajdhani trains, the Shatabdi trains also do not run at their maximum permissible speed.

It is possible to introduce a still faster train or accelerate the speed of the existing trains with the induction of the state-of-the-art 6000 horse power three-phase AC electric locomotives, imported from Switzerland. But the present track, signalling and other conditions will not allow faster trains. For the time being the advantage of the new locomotives would be in boosting the hauling capacity of both the passenger and goods train. For instance, the new imported engine can haul 26 coaches or even more, against 18 or 19 in the present trains.

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Table 2

Key Statistics

		unit	1994-95
Plant & Equipment:			
Capital-at-Charge		Rs. in crore	*24,924.80
Total investment		"	35.618.15
Route length		Km	62,660
Locomotives		Nos.	6,908
Passenger service vehicles		"	33,678
Other coaching vehicles		"	5,536
Wagons		"	291,360
Railway Stations		"	7,056
Operations:			
Passenger:	Train Km.	Millions	394.8
	Vehicle Km.	"	9,666
Freight:	Trains Km.	"	241
	Wagon Km.	"	22,001
Volume of Traffic:			
Passengers originating		Millions	3,915
Passenger Km.		"	319,365
Tonnes Originating		"	381.55
Tonne km.		"	252,967
Employment And Wages:			
Regular employees		Thousands	1,602.0
Wage bill of regular employees.		Rs. in crore	8,076.9
Average annual wage per regular employee		Rupees	50,777
* Includes investment (Rs. 3,161.88 crore) from Capital fund			
Financial Results:			
Revenues		Rs. in crore	20,100.99
Expenses		"	16,590.12
Misc. transactions		"	297.24
Net revenue (before dividend)		"	3,808.11
Rate of return on capital		Percent	15.28
Dividend on capital		Rs. in crore	1,361.71
Shortfall/excess (+)		"	+2,446.40

It is not that only faster passenger trains are envisaged. There is an equal interest in upgrading the technology and with it the hauling capacity of the more efficient wagons are also being introduced to increase the capacity of the goods trains. After all, the goods trains are the real bread winners of the Indian Railways.

Though there is no hurry to allow trains to run at speeds well in excess of 160 km per hour, some preparations seem to have already been made to plunge India into the realm of really fast trains with the recent decision to import from Germany 21 high speed passenger coaches which can be used in trains of 300 km per hour speed. The agreement to import them includes transfer of technology.

The electrification of tracks, which so far has covered 20.8 per cent of route kilometres, will also be helpful in introducing still faster trains for both passenger and goods traffic.

But it is not possible to introduce really fast trains without improving tracks and the signalling system to bring them to specified standards. A "Bullet" like train would also require a dedicated track, exclusively for such a train. It is doubtful if the present shape of Indian economy would allow such a luxury. The effort at the moment is to improve tracks and upgrade their maintenance to make them safer and comfortable for the present generation of high-speed trains. The welding of tracks will eliminate the common hazard of saboteurs removing fishplates. About 70 per cent of welding job has so far been completed.

Concrete Sleepers

There has been an interesting by-product in this exercise. Ecologists must be quite pleased to see the wooden sleepers being replaced with concrete ones thus drastically cutting the need for consumption of wood. The amount of saving of wood can be judged from the fact that in the last 10 years or so, about 65 million concrete sleepers have been manufactured to meet the requirement and still a lot of wooden sleepers have to be replaced. It is estimated that the task would be completed only towards the end of the century.

One of the travails of journey on the Indian Railways usually begins at the very initial stage: the booking of ticket for the journey. The introduction of computerized reservation, beginning with Delhi in mid-1980s, has made that task comparatively less cumbersome. But the introduction of computerisation has been a bigger boon in the field of freight traffic. Today, for instance, it is possible in Delhi to trace the progress of a goods wagon almost at the drop of an eyelid; before computerisation the process would have taken several days.

The job of modernisation and speeding up the railways would not be complete without introducing a

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unigauge system in the country. But it is a big task, involving huge expenditure. Of the 62,800-km of route length in the Indian Railways, metre gauge accounts for 24,000 km and narrow gauge account of another 4,000 km.

The areas not served by the broad gauge often complained that their economic advancement suffered because of this. Goods and passengers travelling long distances across the country required transhipment for want of a single gauge link. But in the early 1990s, the Government decided that the country has no option but to adopt a policy of unigauge. The alarming decline in freight traffic—lost to road transport—could have also forced the decision.

Tourism Promotion

In recent years, the Indian Railways have shown an interest in assisting and promoting the country's rich tourism industry. A beginning in this direction was made with the introduction of the Palace on Wheels trains on the Rajasthan sector. Now special trains are run to centres of both tourism and pilgrimage. Lately, the private sector has also been invited to aid the tourism efforts of the Indian Railways.

With the Government deciding to open up the economy in a big way, the private sector has been invited to assist the Indian Railways. Two major schemes are "own your wagon" and "build, operate, lease and transfer (BOLT)" schemes.

Not every effort of the Indian Railways in improving its performance has been successful. For instance, there continues to be concern over the failure to lure back sufficient goods traffic from the road transport sector. Despite all the measures, *the safety record of Indian Railways is not examplary.* The woes of ordinary passengers have not declined to any considerable extent. Despite its excellent work, the research and development activity also needs to do better to meet newer challanges. On its own part, the Ministry of Railways continues to pine for higher budgetary support which has dropped to 15 per cent from a high of 75 per cent in the Third Plan, while some of its actions are seen as reckless by economists.

The Indian Railways, however, feel confident of meeting the needs of the 21st century. Its Corporate Plan, for the year 1985-2000 A.D., has outlined seven broad strategies: Optimise investment and improve productivity of assets; upgrade technology; bring down costs by reducing fuel consumption, material costs etc.; adopt cost-based tarrif policy; rehabilitate and maintain assets, particularly track and rolling stock; develop human resource and divest auxiliary activities. Perhaps a pursuit of this strategy might ensure a better ride for the Indian Railways in the next century. ❐

The author is a senior journalist.

Analysis of Plan Expenditure

(Percentage)

Year	Rolling Stock	New lines & Capacity Works	Other Works Including Inventories	Tracks & Bridges	Electrification
1950-80	41.61	22.99	17.02	13.97	4.41
1980-85	36.80	17.43	19.97	19.09	6.71
1985-90	20.46	19.73	24.45	28.27	7.09
1990-92	19.69	22.96	21.81	29.19	6.35
1992-95	28.32	31.74	10.51	23.03	6.40

Indices of Growth of Traffic Output and Input

(1950-51 = 100)

Year	Traffic Output indices		Investment Input Indices				
	Freight traffic (NT Km)	Passenger traffic Non-suburban passenger Km)	Wagon Capacity	Passenger coaches	Route Km	Running track Km	Tractive Effort & Locos
1950-51	100	100	100	100	100	100	100
1960-61	199	110	152	154	105	107	144
1970-71	289	159	226	188	112	121	178
1980-81	359	279	269	210	114	128	201
1990-91	550	394	278	219	116	133	192
1991-92	582	419	286	225	117	133	194
1992-93	585	400	285	231	117	134	194
1993-94	583	389	273	233	117	134	188
1994-95	575	419	260	229	117	134	198

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Oil And Natural Gas Sector

S.C. Anantharaman

As India is one of the lowest cost refiners in the world, experts believe that it might become a net exporter of petroleum products in the coming century and a "swing producer" to stabilise global product markets, points out the author.

THOUGH the first oil well in India was completed late in the last century—drilling for the oil well at Digboi in Assam was begun in September 1889 and completed in November 1890—the search for oil in a big way started only after the country gained Independence. The first well at Digboi was drilled by the Assam Railway and Trading Company. Later the Assam Oil Company (AOC) came into existence, which sold its rights to the Burmah Oil Company.

These were the beginnings of Oil India Limited, which became a fully-owned Government company in the early eighties. Thus at the time of Independence, indigenous production of crude oil was confined to Assam.

Since this was hardly enough to meet the country's needs for petroleum products, the Government of India took a conscious decision to develop the country's oil resources, both onshore and offshore.

Creating a Petroleum Division within the Geological Survey of India in October 1955, exclusively for country-wide oil exploration, was the first step. It did not take much time for GSI's Petroleum Division to grow into the Directorate of Oil and Natural Gas, and subsequently into an autonomous Oil & Natural Gas Commission through an act of Parliament in October 1959. Now, of course, the Commission is known as Oil & Natural Gas Corporation Limited.

Real Fillip

The real fillip to the development of the indigenous petroleum industry was given by the late Keshav Deo Malaviya, who gave ONGC the necessary push and was also responsible for the creation of Indian Oil Corporation, India's first national refining and marketing corporation.

Later, of course, the refineries and marketing companies owned by Burmah-Shell, Esso and Caltex (not to talk of the small Digboi refinery owned by Burmah Oil Company) were nationalised giving birth to two more national oil companies, i.e. Bharat Petroleum and Hindustan Petroleum. Today there are 14 refineries (including the two mentioned above)—13 in the public sector and one in the joint sector. The Gas Authority of India Limited (GAIL) was set up in 1984 for planned utilisation of gas reserves and was given the responsibility to set up the HBJ pipeline.

These are briefly the main operators in the oil and natural gas sector, which is basically a public sector monopoly now. While Oil India's operations, in the initial stages, were confined to the north-eastern region, ONGC's initial successes came in the western region. The first discovery of oil and gas made by ONGC was in 1958 in the Cambay onshore basin in Gujarat. Also in Gujarat, the first giant oilfield was discovered at Ankleshwar in 1960.

Offshore Production

In what was termed as "Samudra Manthan" in the early sixties, ONGC decided to step up its offshore exploration activity in earnest. Seismic surveys helped in the discovery of the Aliabet structure at the mouth of the Narmada and later in "Bombay High". A big debate raged in the late sixties whether we should develop "Bombay High" on our own or entrust the job to foreign companies. The first option was chosen and ONGC acquired its first jack-up type rig "Sagar Samrat" (built for the Commission in Japan) in 1973. "Sagar Samrat" started drilling in "Bombay High" in January 1974 and about a month later oil was discovered at the very first well it drilled in this oilfield, which has met part of the country's crude needs for the past 15 years or so.

This writer was fortunate enough to be among the group of reporters who were on board the "Sagar Samrat" in early 1974 to witness the drilling for the first well. By the time we returned to shore and about to report this first experiment in offshore drilling, news arrived that oil has been found. February 1974 will thus be a landmark in the development of offshore oil production in India.

Consumption Outweighs Production

ONGC has travelled quite far in the 22 years since oil was established in "Bombay High". Crude oil production from offshore areas (which is solely

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from ONGC) has risen from five million tonnes in 1980-81 to a high of 21.2 million tonnes in 1990-91. It was around 20.2 million tonnes in 1994-95. Total crude production both from onshore and offshore areas (i.e. the total output of OIL and ONGC) was around 35.2 million tonnes in 1995-96.

But the country's requirements of petroleum products have grown at a rapid rate, from 30 million tonnes in 1980-81 to almost 75 million tonnes in 1995-96. Current estimates indicate that it would reach a level of about 113 million tonnes by 2001-02.

Looked at from a different perspective, *India's domestic oil production vis-a-vis petroleum product consumption indicate that the percentage of self-sufficiency has declined from 55.6 per cent in 1990-91 to 43.7 per cent in 1995-96 and is estimated to decline further to 23.5 per cent by 2006-7.* In other words, the percentage of self-sufficiency in another 10 years (which is not far away) will be half of what it was in 1990-91.

Gigantic Task Ahead

This emphasises the immense task ahead for all the institutions involved in meeting the country's petroleum product requirements. According to the report of the Strategic Planning Group on Restructuring of Oil Industries (referred to as the R group), mobilisation of Rs. 180,000 crore is required as venture capital for investment in the exploration and production sector alone in the next few years.

Several policy initiatives are required to tackle the gigantic task ahead. Delivering the Third Lovraj Kumar Memorial lecture on India's oil policy in the coming century, Dr. Vijay Kelkar, Secretary, Ministry of Petroleum and Natural Gas, visualises that in the coming century, India will be one of the great industrial powers and obviously oil policy will have to subserve this goal.

Talking about India's oil policy not only from a long-term perspective but also in the international context, Dr. Kelkar is of the view that if the 20th century was the century of oil, the 21st century would be the century of natural gas.

Not only natural gas is more abundant in terms of reserves but also it is more evenly spread in terms of geographical distribution of these reserves and thus offering greater security of supplies. At the present rate of depletion, Dr. Kelkar points out, the global reserves of crude oil will last 43 years and natural gas 66 years.

Pointing out that India's current consumption of petroleum products is around 78 million tonnes and will be growing at the rate of about 10 per cent or so per annum over the next decades and exceed 270 million tonnes by 2020, Dr. Kelkar says that even by early part of the next century itself India would have already become one of the top five consumers of petroleum products, ahead of a number of major OECD countries such as France, U.K. and just behind China and Russia. In other words, India's import requirements would be growing faster with total demand exceeding total supply resulting in increased import dependence for oil and also for natural gas.

Comparing India's situation with other countries which have very little domestic hydrocarbon resources, Dr. Kelkar has pointed out the first element of policy thrust has to be accelerated exploration programme within the country. In this India is fortunately placed because over the last several decades, the country has created a great institutional base in exploration, production and refining. But Indian institutions have to become more efficient, internationally competitive and try to maximise India's share in global equity oil (like some of the other countries have done who have very little hydrocarbon resources).

Pricing Mechanism

Another policy element is to review the present administered pricing mechanism (APM) under which a number of petroleum products are heavily subsidised. This aspect has been gone into at length by the R Group, which has suggested a phased withdrawal of the present administrative pricing mechanism, under which the main operators in the petroleum sector have little inducement to become more efficient as the return is based on a cost-plus formula.

Even from the point of view of generating more resources for re-investment in the industry to meet future demands of the country, a review of APM should form an integral part of future oil policy.

Addressing the economic editors conference in Delhi in November, Mr. T. Baalu, Minister of State for Petroleum and Natural Gas, highlighted that the cumulative outstanding claims of oil companies from the oil pool account are likely to touch Rs. 15,500 crore by March 31, 1997.

One of the reasons he cited for this mounting outstanding claims is the non-adjustment of selling prices of petroleum products in the context of increased imports and rise in international prices of crude oil.

Gross imports of crude oil and petroleum products at 47.68 million tonnes in 1995-96 were 15.4 per cent higher than in the previous year. If the value of these imports was Rs. 17,838 crore in 1994-95, the bill rose to Rs. 24,095 crore in 1995-96.

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According to the R Group report, the contribution to the exchequer (both Centre and States) from the oil and gas industry by way of royalty on crude oil and gas, oil development cess, excise and customs duties, corporate taxes and dividends worked out to Rs. 24,493 crore in 1994-95. *If one excludes the share of the States out of some of these levies, the Centre is already spending more on imports of oil and petroleum products than the contribution being made by oil and gas industry to the exchequer.*

Here, it must also be noted that the Central Government mopped up 47 per cent of oil revenue in 1993-94 by way of taxes, royalties, etc. Oil and gas industry is thus a large source of revenue for the Centre.

Need For Reforms In Hydrocarbon Sector

While of course it is true that it is the Centre's responsibility to find adequate funds to develop the oil and gas industry, the above figures only highlight the need to let the oil and gas industry generate more internal resources to finance its future development. It is an open secret that the Government of India's finances are none too rosy and there are too many competing claims on the limited kitty available with the Centre.

All the more reason for immediate reforms in the hydrocarbons sector. Though it is difficult to quantify in monetary terms the benefits of reforms, the R Group has estimated that the net present value of the reforms it has suggested would amount to around Rs. 100,000 crore. And that is a lot of money.

The controversy that is raging at the moment over raising the prices of some of the heavily subsidised petroleum products only serve to highlight the problems that arise in opening up the oil and gas sector in line with the changes that are taking place in other sectors of the economy.

For instance, it is widely admitted (even in official publicity material) that a level playing field should be given to national oil companies "particularly by paying them international market price of oil". This will help them to raise more revenue, but this good intention still remains on paper only.

"If discovered fields are offered in future for improving economic viability, the national oil companies, who have discovered the fields, should be reimbursed the past costs incurred by them", says an official note explaining the short-term measures to be taken for development of the oil sector. This is another contentious issue on which there is more noise than action.

The Government has allowed entry of private sector in a major way into the oil refining sector (proposals, including export-oriented refineries, adding up to 70 million tonnes per annum have been cleared so far).

Similarly, parallel marketing in gas has been allowed (though this has yet to pick up) and with the approval in principle for the Southern Gas Grid, several policy decisions with regard to the natural gas sector have also to be taken. For instance, natural gas is underpriced and there is a recommendation that it should be raised.

Development of the natural gas sector (which will, as per present indications, will be largely based on imported gas) means heavy investment in pipelines, port and storage facilities, etc. It takes years to set up these. Here again, to facilitate and encourage investment, a rational pricing policy must be in place, the sooner the better.

Since the country has mastered the art and science of setting up refineries as well as running them, experts believe that India might become a net exporter of petroleum products in the coming century and a "swing producer" to stabilise global product markets. This expectation is based on the fact that India is one of the lowest cost refiners in the world.

But, to quote Dr. Kelkar again, "our present administered prices regime is non-transparent and certainly not efficiency compatible. Further, our current tariffs provide negative rate of protection for the refining sector and as such it discourages private investors to bring in new investments". Hence, what is required is comprehensive reforms of pricing and tariff policy as that alone can promote adequate infusion of capital and efficient use of these resources, he argues.

Now, that prescription applies not only to the refining sector, but to the entire oil and natural gas sector. This is not the place to go into specific details, but a visionary approach is needed similar to the one shown by many of those who have helped laying the foundation for the oil and gas industry.

The great institutional base built up within the country over the past several decades in exploration, production and refining should be strengthened further, along with the entry of a range of new actors. Major investments are taking place in sectors like automobiles, but these can become infructuous if the main engine of growth (here one means both industrial and agricultural growth) i.e. the oil and gas sector, is not properly taken care of. It is time we put this sector on a faster track. ❐

The author is a veteran economic journalist.

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Tourism In India

Rabindra Seth

Tourism has come into its own in India. The Asia-Pacific region has been forecast by the international agencies as the centrepiece of tomorrow's tourism and India is part of it, says the author.

TOURISM as a general economic service and social phenomenon is a post-Independence development. It is a trend that is evident worldwide as tourism has become the largest export industry. It is recognised so by the World Bank and the World Tourism Organisation. India has been striving to get a major slice of this industry though for various reasons it has had to be content with a marginal share of 0.4 percent of the global traffic. But, the efforts will continue and the prospects of India becoming a favourite destination are ever stronger than before. Last year, close to 2.12 million visitors from abroad arrived in India which, of course, has a massive domestic movement of people of over a hundred million.

Tourism has been recognised as the largest single source of foreign exchange with very little outgo. Because of its multiplier effect it generates faster and at lesser cost more jobs than any other industry, which is a national priority. The economic reforms which have given rise to foreign investment opportunities, coupled with the development of tourist facilities including operations by international air carriers, are facilitating factors. Still, the extent of expansion of the tourism sector could be assessed from the fact that until 1947 it was not an organised activity with government support. Some foreigners were coming on holiday or to see the Taj. There were no packages, no big league hotels or a domestic air network that could take the visitor to the vacation spot. The travellers of those days were either on official business or scholarly pursuits going to some university. Domestic travel was essentially for pilgrimage or for family reasons. The concept of holiday outing had not struck roots nor were there any facilities.

During the colonial rule the administration used to move to the hill stations in summer time in almost all the then provinces. Even then the movement was essentially compulsive to these areas for obvious reasons for the bulk of the staff. Even in respect of big hotels only the metro cities had some such properties mostly for the use of visiting Englishmen, or, during wartime, Allied army officers. Conditions changed overnight soon after Independence, helped by the vision of Jawaharlal Nehru with his commitment to international understanding. His oft quoted observation "welcome a visitor and send back a friend" underpinned this commitment. It was in 1949 that a tourism cell was first created in the Department of transport. This was the beginning of a process that climaxed in the formation of a separate Ministry of Tourism under the charge of a full cabinet minister in the 60s. The first Cabinet Minister was Dr. Karan Singh. It was the time when tourism had developed into an organised industry in the principal originating markets of Europe ad north America and Air India had begun its operations. The potential of the tourism sector was foreseen by some far sighted persons like Somnath Chib, Romesh Thapar and M.S. Oberoi. As the contours of national economic development came to be outlined, tourism came to be recognised as a potential tool. Obviously, it could not get priority in the face of other national imperatives like agriculture, health and education. Even so, private entrepreneurs established travel related services heightening the need for tourism infra-structure.

Thus was born the Indian Tourism Development Corporation (ITDC) in

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the role of a catalytic agent to develop tourism. And, India's first hotel of international standards, the Ashok, came up, again at the behest of Jawaharlal Nehru who took personal interest in all its stages from concept to commissioning. As already mentioned there were hotels which were western oriented but Ashok was the first hotel of its class to have a complete Indian orientation not only in its architecture and decor but also in its cuisine, culture and entertainment and other facilities.

By that time tourism had acquired several dimensions, one of which was convention tourism. It was noticed that international confrences and even conventions of corporate and commercial bodies attract a sizeable number of delegates who outside their business hours would engage themselves in leisure time pursuits. They patronise hotels, souvenir shops and tourist destinations. In fact, it was primarily for the UNESCO which was meeting for the first time outside Paris that the Vigyan Bhawan and Ashok Hotel were built. Both have since proved as great national assets and monuments to the vision of Jawaharlal Nehru on tourism's potential. Ashok Hotel was a pace setter. Not only it introduced Indianness in its ambience, it also turned a vehicle for India's cultural renaissance. Most of the celebrities in the world of art today had their debut in the convention hall of Ashok Hotel where the guests could experience the richness of India's performing and fine arts. Once Ashok provided the lead others were quick to follow. The Ashok's success also triggered the emergence of such classy hotels in not only metro cities but elsewhere too.

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In a parallel development, the government sponsored India Tourism Development Corporation went to areas which the private sector was shying away from for want of a ready market. In almost all the tourism destinations, ITDC put up hotels, motels and resorts. Simultaneously it created a separate division to produce promotional literature of world class which had been lacking. It may sound strange today when we recall that until Independence any information on even the Taj Mahal and other great monuments and temples was in books written and published abroad or by occasional scholar writers on their infrequent visits. Now, for the first time a would-be visitor could be provided with all the relevant data including history and available facilities on the destination.

Meanwhile, global tourism had been taking strides and this had necessarily had its impact on the Indian scene. New enterprises engaged in ticketing, accommodation and other facilitations were launched. Travel agencies primarily engaged in this task and tour operators who were exclusively servicing overseas visitors opened shop. Some of them started their offices overseas for promoting India and worked in collaboration with Air India and also the overseas offices of the Tourism Department which had come into being. These offices were located in the originating markets like the USA, UK, Europe and Japan and later on the West Asia.

India also started taking part in international tourism events like annual meetings of Pacific Asia Travel Association, the American Society of Travel Agents, the International Tourism Exchange in Berlin and trade marts. Besides, Indian delegations participating in international conferences on a wide range of disciplines invited these bodies to hold their future meetings in India thereby giving an exposure to the manifold facets of the Indian tourism product.

Until the 70s the accent had been on cultural tourism. It still remains a major draw. At the same time, the need was felt to respond to global trends in tourist preferences by diversifing the product. The preferences varied according to age groups, origin of the market and the economic opportunities available at different places. Thus new attractions like beach holidays, wild life viewing, adventure travel and special interest tours were developed. Northern Europe shivering in winter sees a great exodus of holiday makers in search of sun and sand. Most of

In the wake of economic reforms, yet another market segment has been enlarged. This is corporate travel. Investment and other business opportunities presented by the opening up of the Indian economy have set thousands of travellers in industrialised countries on their journey to India.

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them used to go to the Mediterranean coast or islands off northern Africa or the Caribbean. For the first time, the Indian beaches at Kovalam, Goa, Mammalapuram, and Puri were marketed. These places used to receive only an occasional visitor from abroad until new facilitations were introduced and publicised. A measure of the progress of beach tourism is that charter flights by the dozen are operating every week to Goa and Kovalam (Kerala). New beaches have also been developed at Bekal, also in Kerala, Diu and Ahmed Mandvi on the Gujarat coast and quite a few resorts in Orissa in the Konark-Puri area.

For the more adventurous, trekking in the mountains as well as river rafting, kayaking and canoeing, skiing and hang gliding are being popularised and these find ever increasing stream of annual visitors. So much so, a section of the travel trade today finds it a profitable business to concentrate on this segment only. In promoting mountains and beaches a new accent is being laid on preservation of environment. And tourists are encouraged only to the limits of carrying capacity of these places. Still, happily the country is so extensively endowed with natural assets that it could welcome many more thousands of nature lovers. Eco-tourism sought by nature lovers is another thrust area fast being promoted in hills, islands and other remote areas.

In the wake of economic reforms yet another market segment has been enlarged. This is corporate travel. Investment and other business opportunities presented by the opening up of the Indian economy have set thousands of travellers in industrialised countries on their journey to India. A visible evidence of the spurt in business travel is the high occupancy rate in the classy hotels of metro cities—Delhi, Mumbai, Calcutta, Chennai and Bangalore. There has been an acute shortage of rooms in these places where in the last fifty years since Independence the accommodation sector has grown five hundred times. The position today is that the country is short of 65,000 rooms to reach a goal of 125,000 rooms just four years away when the number of international arrivals is targeted to reach a still modest figure of five million—a far cry from the officially listed 17,000 at the time of Independence.

Arrivals are going up gradually while there is a phenomenal expansion in domestic travel. With increase in numbers of people having disposable income, change in life style, holiday outing is becoming a part of life. Destinations for the domestic visitor are no longer limited to pilgrim centres and hill stations. They go to other vacation spots with their families as far away as the Andamans and the Lakshadweep. The introduction of leave travel allowance for millions of employees of the Central and State governments as well as public sector undertakings and also holiday schemes in the private sector have added incentives for leisure time journeys.

To meet the demands of this vast movement of people a series of steps have been taken by the Union Ministry of Tourism as well as State governments. *Incidentally, tourism remains a State subject. To encourage investment by entrepreneurs at least 22 States have declared tourism an industry entitling promoters to various tax concessions and other incentives.* These are Andra Pradesh, Assam, Bihar, Haryana, Himachal Pradesh, Jammu & Kashmir, Kerala, Madhya Pradesh, Tamil Nadu, Tripura, Karnataka, Uttar Pradesh, Pondicherry, Maharashtra, Mizoram, Arunachal Pradesh, Andaman & Nicobar Islands, Rajasthan, Lakshadwep, Orissa, Chandigarh and West Bengal. The other states too are offering a range of incentives. New destinations are being developed as in Himachal to take the pressure off from places like Shimla and Manali. New products are also being developed like house boats in Kerala backwaters which have become an instant hit with both domestic and foreign tourists.

A National Action Plan for tourism was unfolded in 1992 to cover the development of infra-structure projects as well as promotion. In a follow up, a strategy paper has also been formulated calling for investment in different segments of infrastructure from approach roads to airport development. The private sector will be the major player in this exercise involving an estimated outlay of Rs. 31,000 crore. To promote international tourism new marketing strategies are being studied and enforced as also more international airlines are allowed to operate through India. Most of these carriers see a great future in the Indian market and for that reason want more frequencies and landing rights.

Thus, tourism has come into its own in India. International agencies forecast the Asia-Pacific region as the centerpiece of tomorrow's tourism and India is part of it. It opens up new challenges and opportunities. As part of the ongoing economic liberalisation, foreign investment from 51 to 100 percent has been allowed in tourism related projects. Nonetheless, for such expanding multidimensional activity new directions and fresh initiatives are constantly called for particularly for upgradation of the product. A central tourism authority with powers to coordinate policy decisions by a multiplicity of agencies at the centre and in the States is called for. Strong political will and commitment is also an imperative for the tourism sector to fulfil the expectations from it. ❐

The author is a veteran Tourism Consultant.

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Aviation Has A Future In Liberal India

Brij Bhardwaj

With our large pool of skilled technical manpower, relatively low manpower costs and extensive manufacturing base, we should be in a position to have a much larger share of aerospace market from the West, says the author.

AVIATION in India started with a special flight by the grand old man of Indian aviation Mr. J.R.D. Tata and since then, aviation has never looked back though this vital means of transport has not been without its periods of glory and setbacks.

Standing as it does now at the threshold of the 21st century, India can boast of new planes like the spanking new 747—400s, but it has to accept the blot of unfortunate crash of the Saudia plane and Kazakh Airlines aircraft, which is a pointer towards what needs to be done.

Aviation is one of the most significant technological advances of our time. Apart from its strategic importance, it has a major role in economic development.

Our country has been fortunate in having started aeronautics related activities as early as the 1940s when Hindustan Aircraft Ltd., forerunner of today's Hindustan Aeronautics Ltd. was established in Bangalore. Over the years, a number of academic and R&D institutions have also been set up which have created an extensive range of skills and capabilities. The strong domestic base contributes to the capacity of our aerospace industry to generate significant economic activity.

India's industry is reaching out to forge new partnerships as our economy is opening up. This applies to the aerospace industry as well. With all our experience and skills, India's share is only 0.1 percent in the world aerospace market which is valued at US $ 300 billion per annum.

Bright Prospects

With out large pool of skilled technical manpower, relatively low manpower costs and extensive manufacturing base, we should be in a position to have a much larger share of the market from the West. The strengths of our academic and R&D institutions and the extensive capacity of our industry in both the public and private sectors have to be put together to meet our nation's requirements as also to develop an international presence.

By the year 2010, it is projected that passenger traffic will more than double, Asia-Pacific being the fastest growing region. Airport infrastructure requirements upto the year 2010 are expected to be of the order of US $ 350 billion. Large investments will also be required in air traffic management, communication, navigation and surveillance systems and upgrading of other systems at airports.

Within the country, over the next 10 to 15 years, a number of new aircraft may have to be inducted for a variety of uses. Airport systems will have to be upgraded and manpower will have to be trained on a large scale.

We have had notable success in a number of areas such as making training and combat aircraft, as also space vehicles and satellites. New knowledge and skills have been acquired in the course of design and development of launch vehicles, the Light Combat Aircraft and the Advanced Light Helicopter. Using these skills, we can provide internationally competitive products and services.

To our friends from other countries we can say that there are ample opportunities for cooperation in the growing Indian economy and in the aviation sector. India would welcome mutually beneficial partnership in which we share knowledge, skills and

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resources. The cooperation can be in a manner in which the strengths of two sides are drawn on and commercial benefits shared equitably.

During the year 1995-96 the domestic air transport operations in the country witnessed appreciable growth in traffic as the total traffic carried by Indian Airlines and private operators reached the 12.8 million mark. Seven private operators were granted status of scheduled operators and 18 companies are holding air taxi operators' permit.

Better Performance

During the said period scheduled airlines operated 67,908 flights carrying 49,71,064 passengers and air taxi operators have operated 8,609 flights carrying 1,16,153 passengers. Tourist charter flights had brought in 84,811 tourists by 844 flights during the year.

Air India introduced four new destinations during 1995-96—Manchester, Amsterdam, Entebbe and Tel Aviv. Also the airline operated 182 flights from different points in India carrying 18,513 Haj pilgrims.

Indian Airlines improved its operating profits from Rs. 36.24 crore in 1994-95 to Rs. 114.35 crore in 1995-96.

Pawan Hans Limited increased its net profit to Rs. 51.58 crore during the last year. The company started helicopter services to Arunachal Pradesh in the North-east in December thereby meeting a long standing demand for airlinks from the State. It has also finalised the purchase of two Bell helicopters and part of its fleet expansion programme.

Alliance Air (Airline Allied Services Ltd. a wholly owned subsidiary of Indian Airlines) started its airline operations from 15 April '96 after the transfer of one Boeing 737 aircraft from Indian Airlines.

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The second aircraft was transferred by Indian Airlines on 25 April, followed by two more planes in July and August this year. The route network was further expanded when Alliance Air took over services of the fifth and sixth planes in the first week of September. It has taken all its senior personnel from Indian Airlines adding upto 183 employees.

The on-time performance of Indian Airlines has significantly improved with the passenger load factor going up from 68 per cent in 1994 to 72.3 per cent in 1995. The average number of passengers carried by Indian Airlines has also increased by about 5 per cent during 1995.

Special marketing efforts have been initiated, which include setting up of special counters, Computer Based Automatic Information System, KERB squads to inform passengers of delays and cancellations, introduction of J class in all A 320s and improvement in inflight service and improved safety. The airline also added Kaula Lumpur and Yangon (Rangoon) to its international network. The year ended with Indian Airlines getting the best airline award against the stronger contenders in the private sector.

Last year saw the process of stablisation and substantial presence of the private airline operators in the domestic transport industry.

Twenty-four aircraft were sanctioned to the private airlines, including 13 Boeing aircraft. The total seats carried by both Indian Airlines and private operators add up to 50,000 seats a day.

While Indian Airlines has a capacity of 28,000 seats, the private operators have 21,000. The total passengers carried per day has been around 36,000 representing an overall load factor of 73.6 percent. Private operators carry 40 percent of the traffic with their fleet. The domestic airline traffic has increased dramatically from 7.5 million in 1990 to about 12 million by 1995.

Air India

As far as international airlines are concerned, more than 2 million additional seats have been offered to international passengers and Air India entered into unique code sharing agreements with four airlines.

Air India has seen a great deal of transition and consolidation. The main thrust areas of the airlines were expansion of routs, introduction of new destinations, better product, more productive utilisation of resources and improvement of image. After a gap of a decade or so, Air India expanded its fleet by inducting four B747-400 aircraft, orders were placed for two more and were delivered in November this year.

New destinations like Perth, Johannesburg, Durban, Manchester and Amsterdam were opened, as have Madrid, Entebbe and Tel Aviv. More international operations were introduced from Chennai, Thiruvananthapuram and Bangalore

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and the number of direct point to point services increased.

An ambitious programme of fleet renewal is being taken up to achieve growth of operation. Though Air India's profits had dwindled this year because of increased interest and depreciation burden due to acquisition of new aircraft and increase in cost of operations, the health of the airline is improving.

Determination and dedication to regain its lost place of pride amongst the international carriers is making the airline forge ahead. The passenger load factor has increased from 59 percent to 68 percent. The number of passengers carried showed an upward trend too.

Several measures have been taken by Air India to upgrade its product and services. These include introduction and use of Malayalam language for the Gulf sector, upgraded inflight services in long-haul sectors and setting up of special counters and multiple check-in facility at Delhi and Bombay airports. Airport lounges at major centres like Hong Kong, Bangkok, New York and London have been upgraded.

Air India has entered into code sharing arrangement with Scandinavian Air Services, United Airlines, Finnair and Kuwait Airways. It has also entered into joint venture agreements with Gulf Air, Malaysian Airways and Air Mauritius.

In 1995 the profits of Air India declined considerably due to reduction in overall yield, increase in expenditure and hiring of aircraft, higher material consumption and outside repairs due to aging fleet, world-wide increase in insurance rates and increased depreciation and interest due to acquisition of new aircraft.

The process of acquiring the Medium Capacity Long Range aircraft is in an advanced stage. The year ended with the hope that Air India will expand its network dramatically, once it inducts new aircraft by phasing out the aging aircraft.

Airports Authority Of India

Another major development was the merger of National Airports Authority of India and International Airports Authority of India into a single entity called Airports Authority of India to give a unified direction. During the year 1995, tremendous work has been done in the construction of terminal buildings, providing navigational aids and installation of sophisticated radars at Thiruvananthapuram and Hyderabad. Special thrust has been given to the North-Eastern region, Jammu & Kashmir and smaller airfields in Uttar Pradesh.

New Terminal buildings have been completed at Jaipur, Lucknow, Vadodara and Calicut airports. Sophisticated communication facilities were provided at many airports—Agartala, Belgaum, Jorhat, Tezpur, Tirupati, Jammu, Varanasi, Bangalore and Calicut. Over Rs. 440 crore are planned to be spent in the coming year for the development of airport infrastructure.

Lucknow and Jaipur model airports have already been inaugurated and work on the other ten airports is in an advanced stage of completion. Work has also been undertaken for construction of new airports at Kargil in Jammu & Kashmir, Taru in Meghalaya, Lengpuri in Mizoram and Androth in Lakshdweep.

A big boost was given to private investment in airport construction with a Cabinet clearance on the proposal for Calicut airport. A memorandum of understanding was signed between the Government of Karnataka and private consortium for construction of an international airport in Balgalore in December last year. It is hoped that all 12 model airports would be ready by the end of the financial year 1996-97, providing better and safe services to the discerning traveller.

Pawan Hans Limited has completed 10 years of its service to the nation. The organisation has earned a profit of Rs. 40 crore during 1994-95. The company has started helicopter services in Arunachal Pradesh from December 1995 by deploying on Dauphin helicopter having a capacity for 8 passengers. Next year, it will substitute Dauphin helicopter by a large 25 seater helicopter.

The company is planning expansion of its fleet to meet the demand of ONGC and other customers. It is purchasing 2 Bell 206 L4 helicopters to meet requirements of Customs Department and 2 MI-172 helicopters to meet ONGC requirements. The company proposes to add upto 10 more helicopters to its existing fleet by March '97. ❐

The author is a veteran journalist.

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Surface Transport

S. Dharmarajan

Looking back it is noticed that a lot has been done in the post-Independence era for the development of surface transport, the linchpin of the country's prosperity, however much more still needs to be done in this vital sector, says the author.

SURFACE transport is a key component of the infrastructure of sustained economic growth. A well-knit and co-ordinated system facilitates its better utilisation necessary for sharpening the country's competitive edge. Through eight five-year plans progress in developing the system of transport by land and sea has designed it to operate at peak efficiency. Admittedly, much more needs to be done to attain this goal for a country of continental size like India.

But looking back at the last 50 years one finds the achievements to be in no way in a small measure. With a network of two million kilometres India has now the third largest road network in the world. Similarly, the shipping fleet has increased manifold to attain a strength of 480 ships with a gross registered tonnage of 7.02 million. The post-independence period has seen the country grow as a ship-building nation with four major and three medium size shipyards in the public sector. The total capacity of Indian major ports numbering 11 is estimated at 174 million tonnes, but these handled 215 million tonnes in 1995-96.

Impact of Liberalisation

The growth of the national economy during this period has of course made a quantum leap imperative in all these areas. Since the ushering in the economic reforms there has been a re-orientation of shipping policy, liberalisation in acquisition of ships, record handling of cargo and containers by major ports, incentives and facilities to encourage private sector participation in modernisation and development of ports and national highways, promotion of inland waterways and mass rapid transit systems.

Then And Now

All these are within the charge of the Ministry of Surface Transport which is responsible for the formulation and implementation of related policies and programmes. Easy and speedy movement of commodities for domestic consumption and exports has a direct co-relation to its efficient functioning. A measure of the magnitude of the task is evident on a comparison between the situation at the beginning of the first plan and at present in respect of freight carried by the roads. In 1950-51 roads carried nearly six billion tonne kilometers (btk) of freight and 23 billiion passenger kilometers (bpk) of passenger traffic. The current level of estimated freight and passenger traffic are 650 btk and 1500 bpk respectively. Roads have emerged as the preferred mode of transport and the situation is likely to continue for years to come.

Another aspect of the network is that national highways built up to 34,058 km, much of it in the last fifty years carries nearly 40 per cent of the total road traffic. If this is an indicator of the high growth in road transport, it also suggests the colossal nature of the needs of the future as the national highways constitute less than two percent of the road network. Since the First Plan, the problems of growth in demand for road transport have been addressed to. These cover improvements in the area of road design, construction, maintenance and materials, quantum change in the quality of rural roads, modernisation of construction equipment and transport vehicles, traffic transport management, traffic regulation, multimodel transport, choking urban roads and solutions to the problems of urban transport. *Still, 46 years later, on the threshold of the Ninth Plan it has been noticed that development of roads and road transport has still to keep pace with the demands of economic growth.*

With the set objective of the removal of those deficiencies, reforms have been initiated and more are contemplated. The Economic Survey for 1995-96 lists among the measures already taken: declaration of the road sector as an industry to facilitate borrowing on easy terms and to permit floatation of bonds; relaxation of MRTP provisions to enable large firms

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to enter the highway sector; amendment of the national highways Act to enable the levy of a fee on national highways, bridges and tunnels and lowering of customs duties on construction equipment and streamlining of the related procedures. The contemplated reforms are: private sector participation including foreign investors in the development of stretches of national highways and construction of expressways on BOT basis for a period of thirty years, the traffic will be normally regulated by entrepreneurs but to ensure free and uninterrupted flow of traffic, sales tax and barriers will not be established on the expressways and the checks by the authorities will be conducted at the entry and exit points only; the land acquisition and removal of utilities to be done by the government. These reforms underpin the need for expansion of the road network which since the beginning of national planning is up 500 percent from 0.4 million kilometres. Road transport has increassed by 60 to 65 times. *It is estimated that road traffic now accounts for 80 per cent of passenger traffic and 60 per cen of goods traffic. By 2000 AD, just four years away, passenger and goods traffic will go up to 87 and 65 per cent respectively.*

The number of vehicles has gone up to 27.5 million, an increase of 90 times in the past 50 years. Cars sporting all famed international brand manufactured under Indian licence threaten to clog the roads.

National highways constitute the primary network of the road system. A recent study by the Asian Development Bank has noted that the country needs the construction of another 10,000 km of the national expressway network. Obviously, capacity has to go up; payment has to be sufficient; riding quality should be better and bridges should be strengthened, there should be more rail level crossings and more wayside amenities and measures for a safety are to be strengthened. Projections place the cost of attaining these desired objectives at Rs. 52,000 core. *The money is worth spending as otherwise the country loses an estimated Rs. 15,000 crore every year because of the bad condition of roads resulting in avoidable excessive use of fuel and an increase in vehicle operating costs. This is again a problem of growth resulting in development driven increase in traffic because of economic activity.* A national highway authority of India has since been constituted with a full-time chairman and three members aided by senior and technical officials having expertise in various fields. In view of the massive demand for the road network cooperation of the private sector is being mobilised.

Economy's demand on ports has also gone very high. The annual growth in cargo handling has been ranging between 7.6 per cent to ten per cent. Containerised cargo which has come into vogue in recent years recorded the maximum percentage increase in 1994-95 and 1995-96. Calcutta, Cochin and Mumbai have contributed to this phenomenal growth. All the major ports handled around 1.4 million containers during the financial year 1995-96. The 11 major ports are Calcutta, Paradip, Vishakhapatnam, Chennai and Tuticorin on the east coast, and Cochin, New Mangalore, Mormagao, Mumbai and Kandla on the west coast. Development of major ports is constitutionally the responsibility of the Union government. In recent years major investments in port construction have centred on container as well as bulk facilities.

In the wake of the economic reforms the government has allowed private participation in facilities including building operation and maintenance of container terminals, setting up of storage and warehouse facilities; pilot services, dredging operation and maintenance of port craft and other equipment. Two dry docks at Calcutta have been privatised. Leasing out of two berths is under consideration of the government. Also, under consideration are proposals for privatisation at other ports. Ports and highways, besides power, constitute core areas where private investment is invited to overcome capacity shortages. Major ports have identified a large portfolio of projects amounting to US $ 2 billion where private sector involvement is feasible. In addition, governments of the States with a coastline have identified such projects worth US $ 1 billion.

Since infrastructure services are central to growth, the government is keen on raising private investment in the sector substantially. The Prime Minister, Mr. Deve Gowda told a gathering of international business leaders at Destination India conference recently: "We realise the critical importance of infrastructural development to sustain economic growth. Government considers it a high priority area for investment by foreign and multinational companies. We have already initiated policy measures and programmes to attract both domestic an foreign investment in these areas. Tax holidays and other fiscal incentives are being offered for the infrastructure projects. We have gained some experience in the past couple of years with these sectors and we are aware of the need to further simplify procedures and ensure greater transparency. We are ready to examine any suggestions to improve the system".

Shipping, shipbuilding and inland water transport are other areas in charge of the Ministry of Surface

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Transport where growth has fuelled expansion in the last fifty years of freedom. Liberalisation measures have been taken to facilitate the growth of the shipping industry as well. A working group on shipping constituted by the Planning Commission has recommended the acquisition of an additional 3.7 million GRT at an investment of Rs. 15,000 crore during the ninth plan period to increase the total available GRT in excess of nine million. Linked to the shipping industry is the ship-building and repair industry. In the past 50 years, four major and three medium size shipyards have been established in the public sector, there was none before.

The Hindustan Shipyard Ltd. at Vishakhapatnam and the Cochin Shipyard can construct vessels up to a maximum size of 45,000 dwt and 86,000 dwt respectively. There are about no fewer than 35 small shipyards in the private sector. The shipping industry has been delicensed and is open to the private sector irrespective of the size of the ship except for the construction of war ships. Mechanised sailing vessels upto 10,000 dwt including fishing trawlers and ship ancillaries have been allowed automatic approval for foreign collaboration up to 51 per cent equity capital.

For years ship repairing facilities in the country have been far too limited. Ships have to be repaired outside the country resulting in foreign exchange outgo. The situation will change very soon. Ports have been advised by the government to make available land and water front areas for private entrepreneurs who may be interested in setting up ship repair facilities.

In land water transport, also a responsibility of the Ministry, is a pollution free and inexpensive mode of transport and the Ministry puts a lot of emphasis on its development. Subsidy up to 20 per cent of the cost is given to private transporters in this sector. Government vessels are given to private operators for carriage of goods via inland waterways.

There are three national waterways in operation: Allahabad Haldia (the Ganga Hugly) river system; Sadiya Dubri (on the Brhamaputra system) and Kollam-Kottapuram (Kerala) Proposals have been finalised to declare Cherala to Rajamundri on the Godavari river in Andhra Pradesh and Zuari and Mandovi rivers and Cumberjue canal in Goa and the international route between Sagar and the Bangaladesh border in Sunderbans as national waterways.

In sum, an enabling framework for private investment in the key infrastrastructure sector of surface transport is being made operative. This is done under the economic reforms which are currently being effected. Infrastructure development is recognized as the linchpin of Indian prosperity. Not far into the next century, deficiencies like port capacities stretching beyond their limits and road networks under tremendous pressure will be left behind, taking the development process of the last 50 years to a new credo. ❐

The author is a Delhi-based free lance writer.

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Social Welfare

Samir Pal

The Constitutional mandate is for minimising inequality of income, status and opportunities for people. But efforts directed towards securing distributive justice and allocation of resources to support programmes for social and economic advancement of weaker sections need strengthening, vigorous monitoring and periodic review.

TAKING care of the most disadvantaged sections of society on missions for social action by reformers and political activists of yore is now largely left to the State under India's post-Independence programme of planned development.

The role of pioneering voluntary agencies like the Brahmo Samaj, Arya Samaj and the Ramakrishana Mission who campaigned on social issues like prevention of Sati and widow marriage, care of the ailing and aged, education and shelter for destitutes, has been adopted as State welfare responsibilities and enlarged in scope by Constitutional provisions and legislative action.

Services are intended to provide preventive, developmental and rehabilitative assistance to the handicapped, aged, addicts, maladjusted, women, children, minorities, backward and weaker sections, scheduled castes and tribes. Lately, youth as a segment is being highlighted—primarily in the context of problems that confront the young.

Social defence measures are mainly directed towards involving voluntary organisations in delinquency control, welfare of the aged, prevention of drug abuse and alcoholism. As regards poverty alleviation programmes, democratic decentralisation does not happen in actual practice. The Panchayati Raj institutions are often used by local decision makers to accord favours instead of looking to the real needs of families.

Schemes administered from above in the top-to-down mode often have no bearing on ground realities. The major chunk of resources are used to set up administrative machinery while 35 per cent goes for actual implementation. Programmes envisaged are well intended, but bureaucratisation has brought in complacency and tardiness in implementation. Targeted goals are not achieved.

The Constitutional mandate is for minimising inequality of income, status and opportunities for people. But efforts directed towards securing distributive justice and allocation of resources to support programmes for social and economic advancement of weaker sections need strengthening, vigorous monitoring and periodic review.

Some indicators of development—for most target groups in the disadvantaged category—are still at very unacceptable levels in regard to literacy, infant mortality and life expectancy.

Literacy Programmes

Literacy initiatives have to be linked to formal schools at the village or community level. Many are still single teacher schools, many do not have even a black board, let alone other teaching aids. The teachers often do not come as they do not live close by.

"Operation Black Board" of the New Education Policy for making teaching aids available in educationally backward States, has had uneven impact. There was no accountability to the people the administrators were intended to reach.

Now the District Primary Education Project, supported by the World Bank and European Community as part of the "Safety net" programme to help the real poor, is crying out loud for more committed implementation. International donor agencies have been stung by the resentment in Latin America, Africa, and Philippines due to their conditionality of reduced government spending on education and health. The District Primary Education Programme was launched to off-set the local social sector impact of liberalisation.

It is a seven year project funding on a soft loan of two per cent interest. But no thought has yet been given to what will happen after seven years. The funding is creating structures and

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"consultants". It is not helping with the actual teaching work or provision of teaching aids. It is not financially helping teachers, to create enthusiasm for implementation.

The actual requirement is teachers who will go out to the small towns, 'Kasbas' and villages and work with school teachers in rural and semi-rural settings to improve course content, enrich lessons on hand with their experience inputs, furbish the school with appropriate books and other resource material. Now the "consultants" tend to adopt a higher than thou attitude to school teaching personnel and themselves need to learn a lot about local conditions.

There are instances of feudal landlord patronage practices in some State—Madhya Pradesh for instance—where the Panchayat members are often influential land owning busybodies. They control the school teachers, appoint their own nominees at a consolidated salary of Rs. 500 to Rs. 800 for a period of ten months. More often than not the teachers are from block headquarter towns and other small towns. They live on hope of an extension of service and the uncertainty of tenure reflects on their effort with the students. The regular primary school teachers who draw Rs. 3000, prefer to teach in towns.

There has been unseemly haste in the adult literacy movement with all out efforts by the administrations to get their districts declared 100 per cent or 90 per cent literate. The Total Literacy Model (TLM) had been brought to success by tremendous effort five years ago by the Kerala Shastra Sahitya Parishad as a campaign model in Ernakulam. It worked well due to public enthusiasm, political and social reasons.

The Total Literacy Model needs local participation. Autonomous local facilitation structures are supposed to be representative though headed by the District Collector with useful individuals, non-governmental organisation delegates and social action promoters as members. A similar composition of decision makers are deemed necessary with cultural troupes carrying the message and mobilisation of voluntary action.

There has been a process of churning—talking of the problems illiterate adults face. As more women are illiterate, a lot of them come to the literacy classes. The men tend to stay away as their ego does not permit them to admit illiteracy.

The strength of the literacy movement's organisational structure is its facilitative character with participation and partnerships outside and education department. An ambience—a 'mahol'—is created. Yet the 'national literacy movement' is not responsive to gender issues. It is not able to carry forward the women who come for self improvement. Their lapse into illiteracy is likely without a sustained effort to cater to their keenness to continue their learning process.

The opportunity presented by the presence of a larger number of women flocking to literacy promotion centres has to be utilised. For a literate mother is able to comprehend better the elements of safe motherhood and child care beyond traditional practices. They must be retained in the support base for nutrition and education advocacy for their children. Women beyond the reproductive age who run the home and gain a say in the conduct of family and social developmental action need to be assisted in their literacy attaining ventures. Their expectations of the literacy movement have to be met.

But the enabling facilitative structures have got bureaucratised down the line, as they are District Collector centered. Dynamic Collectors enable things to happen. When a particular Collector is transferred out, the whole system tends to collapse. The organisational system has acquired representatives of departments. Community representatives tend to get marginalised or driven by officialdom.

The entire Total Literacy Model has become myopic—looking at literacy narrowly in terms of numeracy, reading and writing. Whereas a more comprehensive understanding of problems that confront them is required to be addressed, raising their critical consciousness. Larger social, political and cultural issues, bread and butter problems need to be taken up—as the Brazilian adult educationist Paulo Freire envisages for the learning process in the Third World. Actually no thought has been given to post literacy effort. Even the basic literacy administered is fragile, leaving ample scope for a lapse into illiteracy for lack of opportunity to use the newly acquired communication skills in remote rural regions.

The motivation on part of neoliterates to go ahead is there. The literacy movement is yet to respond to their interest as there is fumbling over structuring post-literacy projects.

The nonformal education project for drop-outs has failed, as the manner in which it was conceptualised with low priority rating was faulty. The dent has to be made in collaboration with functioning school systems. It cannot be sustained outside it as a second class education endeavour.

Social action in recent years has focussed attention on care for the girl child since UNICEF's initiative in early 1980s followed by declaration of the "year of the girl child". One

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child family campaign featuring a girl child and postage stamp issue with the same theme have helped arouse people's conscience against reducing girl children to the role of mother's helper and accordance lower priority in seeking medical care and schooling.

ICDS

Integrated Child Development Services (ICDS) providing for supplementary nutrition, immunization, health check up, referral services, pre-school non-formal education—and health and nutrition education, for mothers—is being successfully administered in most States and the positive results are perceptible. The target group comprises children upto 6 years of age, expectant and nursing mothers and women upto 45 years of age.

Projects cover 21.6 million children and mothers for supplementary nutrition. In addition, 10.1 million children in the 3 to 6 years age group receive pre-school nutritional stimulation principally through the grassroots level ICDS unit "Anganwadi", generally established in a rural or slum area with a population base of 1,000.

UNICEF provides weighing scales and jeeps, while the World Food Programme and Cooperative for American Relief Everywhere (CARE) are supportive with a cornflour and soya bean flour blend that is cooked in the "Anganwadis" and served to the children who come for pre-school class and play opportunity.

The Anganwadi worker has to come from the local village to ensure her daily presence and familiarity with the community. The services include immunization, prophylactic administration of vitamin A, besides iron and folic acid to counter anemia. Acute respiratory infection (ARI) in children and diarrhoea management are successfully taken care of.

ICDS thrust have largely improved acceptance of the small family norms. There is progress in empowerment of women over productive and reproductive life. Small income generating projects like bee keeping, membership of savings and loans associations are encouraged as part of the drive to make women productive and thereby gain confidence.

Within the ICDS programme, a beginning has been made to provide the much needful services to the hitherto neglected school drop-out adolescent girls. This is intended to imbibe in the adolescent girls a responsible future motherhood and impart necessary skills, including functional literacy, to act as social animators at later stage.

The package of intervention for adolescent girls include hands on training and experience in "Anganwadis" in the areas of health, nutrition, pre-school education and child care.

The Balwadi Nutritional Programme has been underway since 1970-71 to provide supplementary nutrition, recreational facilities and non-formal pre-school education to children in the age group 3 to 5 years. There are 5,053 Balwadis in rural, tribal and slum areas, benefiting about 2.30 lakh children.

Women's Empowerment

Women had been at the centre stage of developmental planning since Independence. Women's empowerment received fresh impetus in the 1980s when women were recognised as a separate target group and given their rightful place in developmental planning in the Sixth Five Year Plan. This marked the breakaway from a welfare approach to women's problems. Efforts at empowerment of women since then have been directed towards mainstreaming women into the national development process by raising their overall status—social, economic, legal and political at par with that of men.

The Central Social Welfare Board in cooperation with voluntary organisations has been conducting awareness generation camps for rural and poor women, with groups of 25 at a time since 1987-88. It aims at identifying the needs of rural and poor women and generating awareness of their status in the family and society—and to activate them to work for achieving their rights. They are guided to deal with social issues like community health and hygiene, technology and environment. The projects for awareness generation provide a platform for the rural and poor women to come together, exchange ideas and views—developing in the process a better understanding of their problems and ways to tackle them.

The scheme also seeks to impart awareness of socio-economic conditions of the local areas in relation to the status of women, impart knowledge on subjects ranging from relevant laws to health and hygiene—and on the manner in which women can organise for development and against injustice.

Nutrition Policy

The National Nutrition Policy adopted by the Union Government in 1993 aims at articulating nutrition considerations in all major long term policy spheres of the Government. It envisages a set of direct nutrition interventionsfor vulnerable groups and indirect policy involving long term institutional and structural changes.

Surveys of street children by the

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Approach To Tribal Welfare

Dr. B.N. Sahay

Although sustained efforts have been made for the welfare and development of the tribals in the post-Independence era, the results have not been commensurate with the funds spent and efforts put in. For the successful implementation of a tribal scheme, Pandit Nehru's approach to the problem should form the basis, says the author.

BEFORE discussing the approach to tribal welfare in the post-Independence era, it is necessary to have a glimpse of the tribal situation prior to the Independence.

The tribal people of India have for centuries lived their own secluded and traditional life. Their area was, by and large, sparsely populated and they had evolved over centuries their own system to maintain law and other. Because of their age-old isolation they faced a number of problems and mainly individual and local efforts could be made to solve them prior to Independence.

The British had pursued a policy of isolation with regard to the tribals which was based on several considerations, primarily to secure peace and order to maintain good administration in these areas and not necessarily to help the people to advance on the road to progress. The policy of 'indirect rule' was adopted in the Rajmahal Hills (Bihar and West Bengal) as a result of rising of the turbulent Pahariyas against the non-tribal Zamindars (landlords). They were at first subdued in the clash of arms, but soon after, according to the above policy adopted by the then collector, Augustus Cleveland, the village and regional chiefs were tactfully brought under control. They were given pensions and asked to collect revenue. A few administrative and judicial powers were also given to them. This policy was followed at many regions in the country. Thus, there was practically little effort by the then government to bring them at par with others through any welfare or development programme. Its sole aim was to let the tribes live their own way of life so long as they did not cause trouble and thus to allow them to maintain their status quo.

The national leaders, however, were aware of their backwardness and were eager to take measure for their welfare. As a result of the provisions made in the Government of India Act 1935, Congress Ministries were formed and in 1937 the provinces of Bihar, Orissa, Bombay, and Madras formed committees to enquire into their conditions. But this did not progress satisfactorily on account of the different priorities caused by the Second World War, the Ruler's policy, and subsequent resignation of the Ministries.

During the pre-Independence period individualized and localized efforts were made by a number of social workers and voluntary organizations. Among many others, mention may be made of the following:

(1) Christian missionaries did a lot for the development and welfare of the tribal people through their two main thrust programmes—health and education. Though the efforts were made throughout the country, they succeeded most in the states of Assam, Bihar, and Madhya Pradesh. Their zeal for social welfare work was unique and their approach was humanitarian. However, they strove to convert the tribals to Christianity.

(2) Mahatma Gandhi gave due importance to tribal welfare and kept this as one of the items of his constructive programme.

(3) A.V. Thakkar, a noted social worker and a few other workers of Indian Society, did pioneering work among the tribals.

(4) S.C. Roy, an advocate by profession, helped the tribals safeguarding their rights. He published a number of monographs on the tribes of Bihar and focused on the importance of customs and traditions in their life.

(5) V. Elwin, (first a missionary and later an anthropologist) and some other anthropologists made their own contribution by bringing to light different aspects of tribal life. Elwin worked among various tribes, specially in Mahdya Pradesh, from 1931 to 1955. His

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work combined research and welfare among the tribals. He established settlement colonies at Karanjia, Sanhrwachhpur, and Pantangarh (all in Madhya Pradesh) and promoted welfare activities, like; the treatment of incurable diseases, literacy, agriculture, and poultry-keeping. Along with this, he conducted detailed ethnographic studies of the tribes. On the basis of his prolonged experiences of working in tribal areas and better understanding of the tribal life and culture, he developed a firm conviction that tribals could only be developed 'along the lines of their own genius'. This policy of Elwin was criticized by a section of politicians and social workers including Ghurye, a noted social scientist, who were advocating a complete assimilation of the tribals into the mainstream of Indian society. While advocating this policy, they did not apprehend the negative consequences of the irregular and unplanned culture contact. They also ignored the fact that a tribal culture has many happy and useful facets and that the same must be preserved. Elwin and other anthropologists were thus labelled as 'isolationists', 'revivalists', 'no changers' etc.

Their wisdom and sincerity, however, later got recognition. We find that after Independence Elwin's policy was recognized and was even supported by Prime Minister, Nehru, when he enunciated the fundamentals of an approach to the tribals. In this policy the importance of controlled, planned and limited assimilation was ultimately realized according to which the need and desirability of preserving the useful and traditional institutions, customs and practices were felt.

Because of the backwardness of the tribal people, the Constitution of India provided in a number of its articles the safeguards of their interest, development and welfare.

As a result of the constitutional provisions, situations with regard to tribal development and welfare changed greatly. Articles 46, 275 and 339 specially safeguarded and promoted their interests. These Articles need to be stated at this stage.

The Article 46 lays down that, "the state shall promote with special care the educational and economic interest of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation".

The Article 275 provides for the grant of special funds by the Union Government to the state governments for promoting the welfare of the scheduled tribes and for providing them with a better administration.

The Article 339 requires the President to call for a report on the special administration of Scheduled Areas and the welfare of scheduled tribes ten years after the commencement of the Constitution; he may do so before the expiry of the ten-year period also. Besides, the Union executive has the power to give instructions to the states on the administration of the scheduled tribes.

As a result of the constitutional safeguard, several welfare and development programmes among the tribes were taken up by the government and non-official organizations, like, Bhartiya Adimjati Gramodyog Sangh, Adimjati Seva Mandal, Ramakrishna Mission, Bharat Sevashram Sangh, Srimanta Shankar Mission and a few others.

The tribal population of India comes to about 68 million (in 1991) which constitute about 8.08 per cent of the total Indian population. They are more in number (as compared to the State/UT's population) in Mizoram (95 per cent) Lakshadweep (93 per cent), Dadra & Nagar Haveli (79 per cent), and Arunachal Pradesh (64 per cent). In addition, they are numerically stronger in the states of Madhya Pradesh (23 per cent), Orissa (22 per cent), Gujarat (15 per cent), Maharashtra (9 per cent), and Bihar (8 per cent). This population comprises over 250 tribal communities (statewise total 566) of which the Gonds, the Bhils, the Santhals, the Oraons, the Minas, the Mundas, etc., are numerically stronger. Literacy among them is to the tune of about 30 per cent (18 per cent among females). By and large, this population has a cultural background, ecology, economy, religion, language, socio-political systems, and race different from those of the castes.

Again, among the tribes there are a number of regional variations and heterogeneity with regard to these factors. Thus, they are at various levels of socio-cultural and economic development, belong to a number of linguistic and racial groups, and are scattered all over the country with concentration in some pockets or zones. Most live in remote hilly and forest areas and have been at a very low level of technological development.

As most of them are economically backward, poverty-stricken, semi-fed, semi-naked, illiterate, and have several complex problems, they have been receiving special attention from the government and positive steps have been taken for their development to bring them progressively into the mainstream of Indian life. During the post-Independence era there has been rigorous planning efforts also by way of overwhelming emphasis for their welfare and development. *Enormous*

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amount of funds have been allocated/ earmarked for their development during the succeeding eight Five Year Plans. Thus, while the Second Five Year Plan went for the 43 Special Multipurpose Tribal (SMPT) Blocks, the Third Five Year Plan crystalised the approach for their development through the concept of Tribal Development (TD) Blocks with more funds and a systematic approach. The Fifth Five Year Plan, however, brought in the concept of sub-plan for tribal development with adequate funds both from the Centre and the State resources. A lot of flexibility in the plan implementation was permitted through the Integrated Tribal Development Projects (ITDPs). The Sixth, Seventh, and Eighth Five Year Plans consolidated the sub-plan approach besides a member of other efforts were also made for the development of the Primitive Tribal Groups (PTGs). During these eight Five Year Plan periods although rigorous efforts have been made for their development, the results have not been commensurate with the funds spent and efforts put in.

Different Problems

As already stated, tribals are at different levels of socio-cultural and economic development and thus have different problems. The tribes who are in the food-gathering and hunting stage (the so called primitive tribal groups) have altogether different problems from those who practice the slash and burn type of shifting cultivation. Similarly, the latter have different problems from those who are settled agriculturists. Thus, due to their varied geographical settings and economy, historical background and cultural types, the problems are also varied and different sets of plans are needed to meet them.

Keeping in view the special nature of the problems connected with the development of such sections of the community, the five fundamental principles enunciated by the then Prime Minister, Pandit Jawaharlal Nehru form the basis of an approach to the tribals. These are:

1. People should develop along the lines of their own genius and we should avoid imposing anything on them. We should try to encourage in every way their own traditional art and culture;
2. Tribal rights in land and forest should be respected;
3. We should try to train and build up a team of their own people to do the work of administration and development. Some technical personnel from outside will, no doubt, be needed, especially in the beginning. But we should avoid introducing too many outsiders into tribal territory;
4. We should not over-administer these areas or overwhelm them with a multiplicity of schemes. We should rather work through, and not in rivalry to, their social and cultural institutions; and
5. We should judge results, not by statistics, or the amount of money spent, but the quality of human character that is evolved.

Understanding of Tribal Life and Culture

In view of the above, it is necessary to have a good understanding of the tribal life and culture vis-a-vis type of approach to their development. In this connection, the following aspects may be kept in view.

1. The tribal development programme aims at all round development of the tribal people and is a process of planned, deliberate, and conscious economic change in the life of the tribal people. Naturally, it is necessary that we must know the existing way of life of the tribal people amongst whom the work is being carried out. This can be done through the existing accounts on the tribes as also by making a systematic personal observation of their social, economic, political, and religious groups and the beliefs, values and material culture.
2. We must also be aware of the latest theories of social change, including the theories about the negative effects of irregular culture-contact situations and the three major steps involved in a social change situation: (a) innovation; (b) response to the innovation—either negative or positive; and (c) if the response has been positive, the integration of the innovation into the pattern of socio-cultural life. This would enable us to take stock of our progress showing whether we are on the right line and whether people have a tendency to come to a third stage.
3. The knowledge that the economic changes are often faster than the social changes would save us from disappointing and frustrating situations. All the same, both economic and social changes have obviously to go together in the long run. Although the social changes are slower and non-measurable, these are closely connected with economic changes.
4. The realisation that we should not be in haste and be careful in introducing new ideas would save from a situation of their coming in clash with the 'hard-core' of culture. The understanding of the tribal people, their relationship in various groups, needs as perceived by them, institutions, beliefs and practices, values and norms, and aiming at linking the new ideas of

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development with the tribal people's existing and past ideas, values, institutions, and experiences would go a long way in obtaining the results of tribal development more successfully.

5. The picture of society as an integrated whole should always be kept in mind because an idea may have repercussions in many other fields/aspects of life. Thus, it has to be anticipated whether a new idea is likely to affect the socio-economic relationship. If the effect is not likely to be a healthy one, it may be better not to introduce it as such as go for necessary modifications or adjustments.
6. We have to be careful with regard to the 'hard-core' of culture which should be touched upon after complete confidence of the people has been gained. This may be done very slowly, step by step, and after demonstrating the results.
7. The approach which advocates for making good friends (and not even as elder brother) may be found useful while introducing the programme. Natural personal identification with the community amongst which one is serving would go a long way in making one acceptable to the community.
8. We should bear in mind that social change is a slower process. Expecting too much and too quickly may create a frustrating situation since it is a three-generational process. It may not be a sudden act of magician. It takes time. Wisdom lies in that. At the same time, one should apply, as strenuously as possible, to developing the people 'on the lines of their own genius'.
9. The knowledge of social anthropology and its methodologies can contribute a lot towards the development and welfare of tribal people since it throws light on the society as such to be developed and it shows how a society works. It can also suggest how the society might, in proper stages, be developed.
10. Better appreciation of the socio-cultural factors which hinder or become aid to tribal development programmes have been discussed sporadically in a number of contributions made by various authorities on the subject. If the socio-cultural and economic aspects are not properly studied, analysed, and exploited for tribal development, the programme may have limited success. But if they are properly studied, analysed, and exploited, the programme based on a scientific understanding, with pragmatic approach, will stand a good chance of success.

The upshot of the foregoing discussion goes to suggest that there is an urgent need for training of both officials and non-officials (including village leaders) in tribal life and culture. In this regard, the facilities available at the National Institute of Rural Development (NIRD), State Institutes of Rural Development (SIRD), and Tribal Research Institutes (TRIs) be suitably strengthened to cope with the growing training needs of tribal welfare/development. Identification of training needs, however, would be the first task of the experts of the subject.

Above all, it is extremely necessary to recall, review, and put into practice Nehru's Five Fundamental Principles of an approach to tribal development. He reiterated,

"It is necessary to plan, to direct, to organise, and to co-ordinate, but it is even more necessary to create conditions in which a spontaneous growth from below is possible'. ❐

The author is former Adviser, Planning Commission.

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Ministry of Welfare and UNICEF in eight major cities have indicated that a large number of children who live on the streets suffer destitution, neglect, abuse and exploitation due to the circumstances beyond their control.

Voluntary organisations are assisted to provide integrated community based non-institutional basic services for the care, protection and development of street children. The focus is on reduction of exploitation and abuse—and withdrawal of children engaged in hazardous work. Priority is given to girls and children without family ties.

For younger children, priority interventions focus on reinstating them in their family fold and facilitate their participation in formal primary education. For older children, efforts are directed towards enhancing their education level and provision of vocational training to equip them with productive skills for adult life.

To tackle the problem of drug abuse the Ministry of Welfare has adopted a community based approach. Community participation facilities, mobilisation of skill resources, manpower and care available in the community are put to optimum use.

The strategy comprises building awareness and educating people about the ill effects of drug abuse, dealing with addicts through an integrated programme of motivation, counselling, treatment, follow-up and social integration of those cured. Training is imparted to volunteers stepping up for drug abuse prevention and rehabilitation, to build a competent cadre of prevention service providers. ❐

The author is a veteran journalist.

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Dramatic Change In Labour Conditions

Nitish Chakravarty

Various welfare measures introduced to extend the scope of social security as well as recent developments on the economic front have brightened up the labour-employment scenario in the country, says the author.

THE labour-employment scenario in our country has undergone a paradigm change since Independence, especially after the policy of economic liberalisation was set into motion in July 1991. In an economy plagued by widespread unemployment and under employment, employment opportunities have expanded on a large scale, but not yet fast enough to keep pace with the growth of population. The goal of near-full employment for every able bodied person at the end of the Ninth Plan is adrift.

More and more women are getting into the employment market. At the same time the exploitation of child labour, though nowhere near elimination, is on the decline. Even as the number of unemployed persons is swelling all the time there has been a perceptible change for the better in the incomes, social security benefits, medicare and living conditions of the working masses.

Eighth Plan Strategy

A major thrust of the Eighth Plan had been on bringing employment into sharper focus in a medium term perspective so as to bring down unemployment to negligible levels by 2002. The planners' strategy focusses on multiplying new job opportunities and at the same time enhancing the quality of existing employment in terms of higher productivity and incomes through suitable technological labour market and institutional interventions.

The total number of persons employed on the "weekly status" basis was estimated at 30.17 crore in April 1992, and the labour force as a whole at 31.9 crore. These figures should not however be interpreted to mean that all these persons were regular wage earners.

At least two percent of those recorded as employed on the "weekly status" basis remained idle and earned no wages for half or more than that of the time they were supposed to be employed. Taking these people as severely underemployed the total number of persons looking for full time employment—not necessarily fixed salary jobs—was estimated at about 2.3 crore five years ago.

Another 3.5 crore persons are estimated to have joined the employment market during the Eighth Plan period, taking the total number of fresh employment-seekers to 5.8 crore in March 1997. A further increase of 3.6 crore during the Ninth Plan period will increase the total number of entrants in the job market to 9.4 crore in March 2002. To meet the expectations of this vast army of employment-seekers it has become necessary to raise the employment growth rate from the average of 2.2 per cent in 1971-91 to three per cent in 1992-2002.

Obstacles

But the difficulties in achieving this objective should not be minimised; the road to full employment in our country is paved with obstacles. Increasing the number of jobs will require a faster growth of sectors, sub-sectors and areas, which have a relatively high employment potential. It will also be necessary to ensure the growth of economic activity at an accelerated rate. It is obviously beyond the capacity of the government to meet the full requirements of hidden unemployment and underemployment.

An annual addition of the order of one crore wage earning jobs over the ten-year period from April 1992 to new stable employment opportunities might take care of open unemployment, but without large scale expansion of self-employment opportunities by upgrading technological skills and enhanced access to credits and markets, it will be futile to expect any change in the earnings of unemployed or underemployed people.

The trends emerging in the first

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three years of the Eighth Plan reflect the increasing intensity of employment growth as a result of higher production and productivity. Estimates of employment in the organised sector of the economy indicate a growth of 0.73 per cent. In public sector jobs in the organised sector the number of women employees increased from 41.54 lakh at the end of March 1994 to 42.28 lakh a year later, a gain of 1.75 per cent.

But more recent indicators suggest a setback in the expansion of economic activity. This has given rise to apprehensions that the pace of growth of employment opportunities since the beginning of economic reforms would be hard to sustain, and the projections of employment opportunities may go haywire. It is expected that the Ninth Plan, now in the works, will devise more appropriate strategies to deal with the problem of unemployment.

Even as job seekers far outnumber the jobs available in the employment market and large scale unemployment continues to be a source of major concern, it is now the turn of many employers to woo, coax or cajole workers endowed with special skills for certain types of jobs for which enough blue or white collar job-seekers are not around the corner. This has created pools of shortage in certain segments of the job market in an ocean of unemployed labouring masses.

Protectionist Policies

There are extraneous factors coming in the way of expanding employment opportunities. Protectionist policies in new forms resorted to by some of the industrially advanced countries are coming in the way of developing countries expanding their overseas trade and commerce.

The United States in particular is trying to foist on countries like India labour standards of their country. This attempt has been going on for a long time. Even the late Prime Minister Indira Gandhi had raised her voice at international forums against the ill-effects of India being forced into fall in line with US standards.

The US is now trying to use the instrumentality of the newly formed World Trade Organisation (WTO) to foist on developing countries labour standards relevant to their own conditions.

There are historical reasons for children being used to earn for the family labour in developing countries. Legislative action alone cannot curb it. But the U S has been threatening that it will clamp a ban on the import of goods from countries like India if it is found that there is a child labour component in the production of these goods.

Pressure is being brought against the developing nations in various other forms to reduce the competitiveness of their exportable goods in the international market. To counter this problem it has become necessary for both workers and employers to act in concert so that exports from India, on which depends the livelihood of millions, do not suffer due to the extraterritorial enforcement of US or other western legislation.

Improvement In Working Conditions

Regardless of the party or parties in power at the Centre from time to time, expansion of employment opportunities and improvement of the lot of the wage earners has been a matter of high priority with the government. Since the 1980s all the governments have shown a great deal of interest in implementing the principles of social justice and equity.

But whoever manages to secure even the lowest paid job is today far better placed than those who entered the labour market 10 or 15 years ago. Aside from enhanced wages and allowances, there has been an all-round improvement in the working environment, conditions of service, health care, educational facilities, social security benefits, et al.

Paradoxical as it might appear, the remarkable change in the working and living conditions of the labouring classes in India over the past half a century contrasts rather starkly with the erosion of the trade union movement. Barring a few exceptions in a few parts of our country, the improvement in working conditions, wages, social security, etc., is more a result of a combination of factors such as the paucity of workers with the required skills, industry's capacity to pay and the government's keenness to enforce labour welfare measures than bargaining by workers.

With due regard to the pioneers of the trade union movement in India who struggled with dedication to secure the legitimate rights of the working classes, in recent years trade unionism became a lucrative business for some of the so called saviours of workers.

Gone are the days of militant trade unionists, who would stop work at the drop of a hat. Fortunately for industry and workers themselves, gheraos and physical detention of superior officers, which became a standard practice in the 70s and early 1980s, are now a thing of the past.

To some extent militant trade unionists themselves are to blame for the loss of their clout and the general setback in the trade union movement. Workers seem to be disillusioned with them, and realised that their living and working conditions can improve only with the improvement of their skills and increase in productivity.

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Trading Blocs And India

Girish Chandra

The growing momentum of transition from multi-lateralism to regional economic cooperation has brought a realisation that production efficiency can be maximised by initiating preferential trading arrangements within the Indian Ocean region, says the author.

WITH the globalisation of trade, increasing regional integration has become order of the day. In fact, the membership of one or more such groups is being construed as a launching pad for boosting a country's exports and its international competitiveness.

Today, there are more than 15 full trading blocs, including both developed and developing countries functioning in many parts of the world. This includes the North American Free Trade Agreement (NAFTA) covering the United States, Canada, and Mexico; the Caribbean Community and Common Market (CARIBCOM); the Caribbean Basin Initiative (CBI); the PTA countries of Africa; the seven-member Association of South East Asian Nations (ASEAN), the European Union and the U.S. sponsored Asia-Pacific Economic Cooperation (APEC) which now has 18 members. These are: the USA, Canada, Australia, New Zealand, Mexico, Chile, Hong Kong, South Korea, China, Taiwan, Papua New Guinea, Malaysia, Singapore, the Philippines, Thailand, Brunei, Indonesia and Japan. After it reverts to China, the territory of Hong Kong will continue in the APEC as an independent entity under the name Chinese Hong Kong.

Because of India's initial reluctance and various other reasons, India did not become a member of any of these trading blocs. However, India played a leading role in the formation of South Asian Preferential Trade Arrangement (SAPTA)—spawned by the South Asian Association for Regional Cooperation (SAARC). The need for such a regional cooperation among some of the countries in the South Asia was felt in the wake of the formation of ASEAN. The formation of this group which include India, Pakistan, Sri Lanka, Nepal, Bangladesh, Maldives and Bhutan had its own teething problems with the apprehension that India can ride roughshod over its much smaller partners. However, these misgivings proved to be untrue as India offered concessions on 300 more tariff lines at the recent inter-governmental group meeting of SAARC in Kathmandu recently. New Delhi intends to offer the concession—from nominal rate of import duty to duty-free access—on imports originating from Pakistan, Sri Lanka, Nepal, Bangladesh, Maldives and Bhutan as part of its commitment to convert SAPTA into South Asia Free Trade Area (SAFTA) by 2000 AD.

The potential for expansion is promising given the fact that, at present, only a small part of the total trade of the SAARC countries is conducted within the region. It is pointed out that intra-regional trade accounts for just three per cent of total trade of the seven-member countries. As far as India is concerned, trade with the SAARC partners comprises just 2.23 per cent of its total global trade, underscoring the potential that exists in this sphere. However, it is underlined that economies as those of Bangladesh, Bhutan, Maldives and Nepal have nothing much to offer India, a point which is easily acceptable considering their exports. On the other hand, Indian exports can play a much larger role in these countries.

Though India is now keen to become member of trade blocs like ASEAN and APEC, it had showed reluctance initially to be part of such associations. India is said to have turned down the offer to be a member of ASEAN way back in 1957 when it was conceived. So when the Association actually came into being in 1971 India was left in the cold. Also, India showed a lukewarm attitude initially towards the formation of an Indian Ocean Trade Bloc or an Indian Ocean region economic group with India and South Africa as the leading partners. Ten countries had been identified to begin with to form this

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union. These include: Comoro Islands, India, Maldives, Malagasy, Mauritius, Mozambique, Reunion Islands, Seychelles, Sri Lanka and South Africa.

It may be recalled that a move to form such a trade bloc was floated by the then Foreign Minister of South Africa, Mr. Pik Botha during his visit to New Delhi a couple of years back. The growing momentum of transition from multilateralism to regional economic cooperation has brought a realisation that production efficiency can be maximised by initiating preferential trading arrangements within the Indian Ocean region.

The main objective of IOR economic group will be formation of a preferential trading arrangement (PTA) with 10 members progressively eliminating tariff and non-tariff barriers in the region over a period of time and promoting intra-regional trade and diversification. However, the progress in this regard has been comparatively very slow.

Besides elimination of customs duties and quantitative restrictions between the member states, the framework of IOR economic group will be to facilitate a free flow of goods, services and capital as well as evolving a common agricultural and transport policy. It is also envisaged to create an Indian Ocean Special Fund in order to improve the possibility of employment of workers and to contribute to raising their standard of living and to establish an Indian Ocean Investment Bank with the avowed objective of creating Rim.

With the proliferation of powerful trade blocs like the European Union, NAFTA, ASEAN and APEC, it is not in the overall interest of India to remain isolated. As of now, neither the country is a member of any of these trade blocs nor has it a special arrangement with any groupings. Efforts to join either ASEAN or APEC have not been successful so far. Indications are that India may not have an easy access to any of these blocs in view of its location, market size and political and economic considerations.

Alternatively, a suggestion was mooted that India should float a trade bloc with Iran and CIS countries. Taking into account the prevailing economic scenario in the transitional economies, foreign trade regimes and their move towards marketisation and privatisation, it may not be a feasible proposition. Also, South Africa will act as the gateway and provide easy market access for a wide variety of Indian products in the landlocked countries of Africa like Zimbabwe, Zambia and Zaire. There are 35 countries in the Indian Ocean Rim.

Though a formal process towards the formation of the IOR economic group was initiated in Mauritius about 18 months ago, a charter to be signed by 14 countries is expected in March 1997. At present, trade and investments between countries in the region is very low. The leading players in the region, that includes India and South Africa, will have to improve their intra-country trade and investments if the IOR trade and investments as a whole are to make substantial growth.

The proposed IOR group also envisages a more coordinated customs service and standardised telecommunications and information technology development between member countries. It also focusses on removing unnecessary barriers to trade through respective customs policies and furthering cooperation between telecommunications and information experts of member countries.

A report commissioned during the last IOR meeting in Australia outlined numerous inhibitory practices which created "bottlenecks" in customs documentation, regulation and administration. Outdated equipment, manual procedures and a lack of appropriate information systems and electronic data interchange (EDI) slowed the system down considerably, besides keeping costs high. Options proposed by the report included a regional and global data base, with free exchange of trade statistics between IOR countries through computer and satellite networks, EDI between countries which had disparate customs, computer systems and intra-regional managerial training and human resource development. Such development would allow for speedier movement of goods through multinodal transport and faster clearance in ports and air cargo complexes.

The wide range of customs tariffs within member countries also came under scrutiny—the IOR would acknowledge some of the developing countries, such as Bangladesh and Kenya—and allow a longer period for them to moderate their tariffs with those of countries such as Australia and Singapore. The experience of such developed countries could also be harnessed by under-developed member countries during the development of their telecommunication and information technology systems. However, management experts urged member countries not to rush off to European and American companies when they embarked on telecommunications privatisation and restructuring.

Other issues which would be of utmost importance to the member countries include nuclear free zones, control on relative defence budgets, control of illegal drugs and migration, health issues, money laundering and black money and terrorism, separatist movements, militancy in some

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countries supported by other governments and fanatic ethnic minorities raising money from their brothers in other countries in the region.

Trade experts, however, feel that with the gradual reduction of the duties and other trade barriers, which is one of the main objectives of various trade blocs to allow freer trade, the advantages of being a member of one of the trade blocs will be largely nullified. Also, under the WTO stipulations the various types of duties will be phased out within ten years or so. So, ultimately it is inherent industrial buoyancy and export competitiveness which would boost a country's exports. Experts in this regard point out that China had already become a powerful exporter without being a member of a trading bloc. ❐

The author is a senior economic journalist.

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The tendency to resort to work stoppages, go-slows, gheraos and strikes on the slightest pretext—sometimes without any pretext at all—has abated. This is reflected most vividly in the sharp drop in industrial action, particularly strikes and lockouts, in the last few years. In 1989 and 1992 man-day losses caused by strikes and lockouts had hit the peak of 32.66 million and 31.26 million respectively. But the provisional figures for 1995 show that man-day losses in that year dropped to a low of 11.27 million.

It would be wrong however to conclude from the foregoing that improvements in the working and living conditions of the employees or increases in their wages and other benefits would have been possible without the struggle of the toiling masses. Barring a few enlightened employers who realise the important contribution that workers make in the production and productivity processes, concessions have been made grudgingly by most of the employers.

Various steps taken by governmental as well as non-governmental organisations to hone the skills of workers so that they can adapt themselves to swift changing technology have had a visible impact. As against at 4.2 per cent increase in mining and quarrying in the public sector in the seven year period April 1974 to March 1981, it went up by 8.2 per cent in the subsequent 11 years to March 1991. India's GDP at increased constant prices over an 11-year period rose from Rs. 5608 crore in 1982 to Rs. 7535 crore in 1992.

Legislation For Labour Welfare

The steps taken by successive governments to secure for the working classes their legitimate dues encompass almost every sphere of their interests. Legislation has been an important instrument in the hands of the government to protect and promote the rights and dues of labour.

The first important step taken by the government for the welfare of the working classes dates back to 1948. It was in that year that the Employees' State Insurance Act came into force. Four years later came the Employees' Provident Fund and Miscellaneous Provisions Act. These two enactments for the first time gave workers in the organised sector a measure of security and enhanced their bargaining power.

The scope and nature of these first two major welfare enactments designed to give workers and their dependents a certain measure of security in the event of sickness, disability or death while in service has been expanded over the years. From now on not only the benefit of provident fund would be available to workers after retirement but they would be eligible for pension under a scheme implemented last year.

In addition, the Payment of Gratuity Act enforced about 25 years ago entitles workers to lump sum compensation on retirement or resignation after specified periods of service. The scope of these post-retirement triple benefits is being expanded continuously. Many people who are not workers according to the definition given in the Industrial Disputes Act such as school and college teachers have also benefited.

Despite its many good features, the pension scheme, linked to the Employees' Provident Fund Scheme, has failed to meet the expectations of all sections of workers. Some of the major trade union centres have described it as a scheme designed to eat up capital formed with workers' contributions. It is to be hoped that anomalies, if any, in the pension scheme would be removed by the government after suitable discussions with labour unions.

Even as the pension scheme, the provident fund scheme, the Payment of Gratuity and the Payment of Bonus Act are the key instruments of social security, the government has introduced various other measures to extend the scope of social security and also to bring it within the reach of ever larger numbers of working people not only in the organised sector but also in the unorganised and small scale sectors. ❐

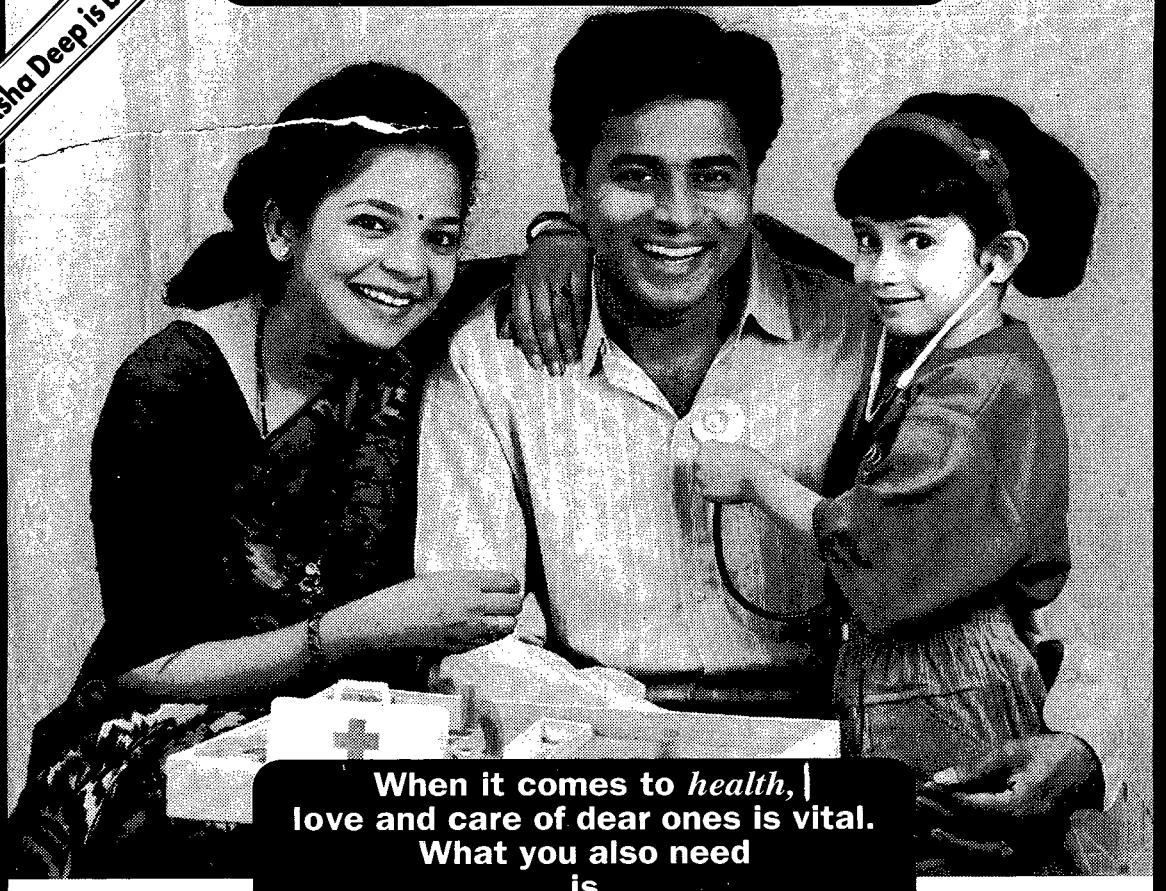
The author is a veteran journalist.

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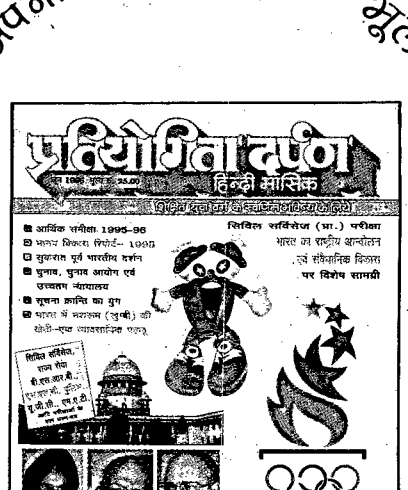
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