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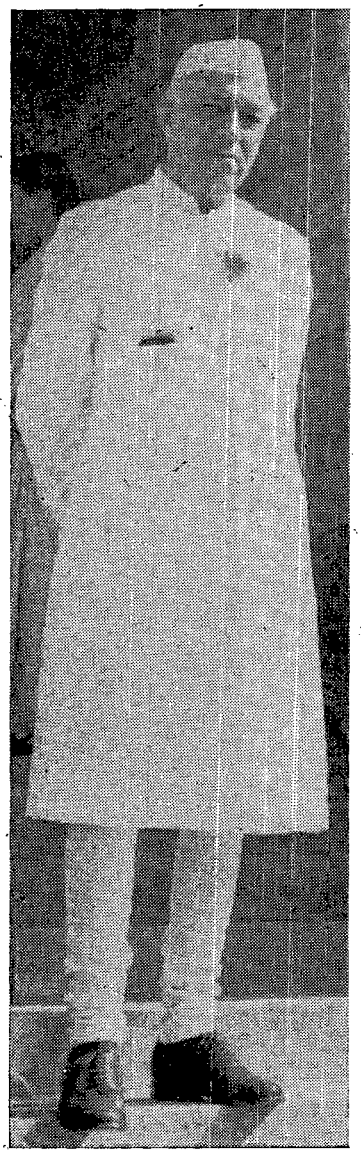
Rupee One

Nehru on National Integration



WHEN we fought for India's freedom, it was for the freedom of the whole of India. It was not for the independence of one part of India, of Madras or Bengal or Bombay or Uttar Pradesh or the Punjab. When we achieved independence, we achieved the independence of the whole of India. We established the great Republic of India of which all these States are parts, and we are all proud of being the citizens of this Republic of India. If we forget this larger ideal of India and think only in terms of a State or a community or a caste or a language, we lose control and drift into wrong directions.

The whole of India from the Himalayas to Kanyakumari belongs to each one of us. We are joint inheritors in this great land. The different provinces do not separate us, just as the different districts do not separate us. Nor do the different languages separate us. All the great languages of India are old, well-established, advanced languages and they are sister languages. We have to help all of them.

In our national struggle, we had unity which bound people from every State, from every religion, from every caste, and from every language-group. This unity brought us our independence. We are now engaged in the new fight against the poverty of India in order to bring about economic progress. This also calls for a united fight, if we are to succeed.

WE have now to face a bigger and a greater task and that is to build up a New India ; in which we will put an end to poverty, misery and unemployment. We have to work for this also together.

WE have many religions in this country and they have lived generally at peace with each other for thousands of years. It has been the tradition of India that the people of one religion tolerate the people of the other religions. That has been the hall-mark of Indian culture. And yet some people have made religion a battle-cry for fighting each other. They have degraded religion. Some people have built up communal organisations, bringing religion into politics, and this has caused much harm to our country. We have to honour not only our own religion but the religions of others. A very great ruler of India who lived 2,300 years ago, Emperor Asoka, has said that he who honours the other man's faith honours his own, and in doing so he makes others honour his own faith. But if he does not honour the other man's faith, his own faith will also not be honoured. So, we have had this lesson of tolarance for ages past in India.

I wander all over India and love to see the great variety and richness of this country. Both the variety and the unity of India are important. Variety gives richness, and unity is essential.

The unity of India is the basic fact which should count today. This makes all of us who live in this great land the citizens of India, not of Coorg or Mysore or any particular State or part of the country.

THINK of the great task before us and of the exciting problems that face us in India. All our people must have equality of opportunity, and therefore, the barriers, whether they are barriers laid by religion or caste, or State or language, must not be allowed to come in the way. We should think of this country of ours as a big family the members of which ought to co-operate with each other, and we should ever cherish the idea that the whole family flourishes and not merely a few persons in it. You have to think therefore what your individual part may be in this great effort. Also you have to feel actively that you are a partner in the tremendous undertaking.

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EDITORIAL

Employment Schemes

THE widely prevalent poverty in rural areas can be reduced only through providing gainful employment to the poor people. The government has been trying through many schemes to achieve this—the most important among them being the Centrally-sponsored Crash Scheme for Rural Employment and Food for Work Programme, and the Employment Guarantee Scheme of Maharashtra. Even though these schemes had provided work for temporary periods to a portion of the poor population, they have not made any deep dent in the problem. The defects in the CSRE and FWP had already been revealed in evaluation reports and similar lacunae in EGS have now been pointed out in a joint study by the Central and State organisations. Some of the common defects noticed in such schemes are as follows : The benefits accruing more to the well-to-do sections than to the poor ; inefficiency and, in some cases, corruption of the local officials ; no proper identification of the really needy persons ; delay in carrying out works and even non-completion of some of them ; time-lag in the payment of wages ; non-creation of durable assets in many cases ; even the few assets not properly utilised due to lack of complementary arrangements by the beneficiaries and the assets not being maintained later, etc.

The concept of employment for employment's sake and not as an integral part of economic development is the basic defect in the special schemes. The best way to provide jobs is through productive work and this needs development programmes in agriculture and allied fields and in cottage and small industries which are interlinked with medium and large industries for common production and marketing. The examples of Japan, and, at home, the cottage match industry of Sivakasi in Tamil Nadu and AMUL dairy of Gujarat, are there for being followed on a large scale. There is vast potential of untapped wealth and much-needed public works even in rural areas which can provide continuous employment to millions of people. When employment is built into the development programmes, as it should be, there will not be any need for special job schemes, except as relief measures during natural calamities. It is hoped that the lessons of past experience will be taken into account while implementing the new and bigger National Rural Employment Programme, so that public money is not wasted. □

Regional Variation in Productivity of Rice and Wheat in India

Shanti Sarup and S. C. Gupta*

THE basic objective of agricultural planning in India had been to achieve a balanced growth of development in all States. But the experience indicates that these development programmes have not been successful in attaining this basic objective. It is observed that not only some states have progressed much better than others but also that the growth had been stagnant in some cases in the recent past. In this context, the regional variation in agricultural productivity and their measurement forms an interesting study. Here is an attempt to study the variation in yield per hectare of two important cereal crops namely rice and wheat in India during the period 1967-68 to 1976-77. The main feature is a comparative study of regional disparities. The Units of regions have been taken as the political boundaries of the States. As agriculture is subject to annual fluctuations, a comparison of the productivity during two individual years would not normally give a correct picture of the underlying trend. So, these fluctuations have been eliminated by fitting a straight line trend. Thus, the trend values were computed for the initial and end years and the variation in productivity in different States as well as the all-India average for each crop was examined on this basis. The estimated trend values of rice and wheat crops for the two and half years alongwith their growth rates are presented in Tables I and II respectively and the results are discussed below.

TABLE 1

Initial and final year trend values of rice yield per hectare and percentage rate of growth.

States	Trend 1967-68	Value 1976-77	Growth rate per annum
Andhra Pradesh	1396	1579	1.48
Assam	977	993	0.19
Bihar	867	890	0.28
Gujarat	728	946	2.69
Haryana	1261	2135	7.34
Himachal Pradesh	1085	1145	0.59
Jammu & Kashmir	1758	1680	-0.70
Karnataka	1769	1752	-0.12
Kerala	1444	1528	0.67
Madhya Pradesh	774	690	-1.21
Maharashtra	934	1287	3.73
Orissa	980	801	-2.29
Punjab	1290	2605	11.05
Rajasthan	738	1195	5.06
Tamil Nadu	1615	2089	3.42
Uttar Pradesh	702	901	2.98
West Bengal	1226	1184	0.43
All India	1060	1151	0.98

* Scientists, Indian Agricultural Statistics Research Institute, New Delhi.

It is observed that the all-India average yield of rice varied from 1060 kg/ha in 1967-68 to 1151 kg/ha in 1976-77. In 1967-68 the yield of rice varied from about 700 kg in Uttar Pradesh, Gujarat and Rajasthan to about 1750 kg in Jammu & Kashmir and Karnataka. The States might be broadly grouped as follows :—

Karnataka (1769) ; Tamil Nadu (1615) ; Kerala (1444) ; Andhra Pradesh (1396).

Jammu & Kashmir (1759) ; Punjab (1290) ; Haryana (1261) ; Himachal Pradesh (1085) ; Rajasthan (738) ; Uttar Pradesh (702).

West Bengal (1226) ; Assam (977).

Orissa (980) ; Bihar (867) ; Madhya Pradesh (774).

Maharashtra (934) ; Gujarat (728).

Ten years later, in 1976-77, when the all-India average was 1151 kg/ha the State averages varied from about 690 kg/ha in Madhya Pradesh to about 2600 kg/ha in Punjab. There was a significant depression in the productivity of rice in Orissa during this decade while in Karnataka, Jammu & Kashmir, West Bengal and Madhya Pradesh the decrease was marginal and statistically not significant. The productivity of rice increased significantly in Maharashtra and Rajasthan. Both these States were below all-India average in 1967-68. The above groups of States then appeared as under :

Tamil Nadu (2089) ; Karnataka (1752) ; Andhra Pradesh (1579) ; Kerala (1528).

Punjab (2605) ; Haryana (2135) ; Jammu & Kashmir (1680) ; Rajasthan (1195) ; Himachal Pradesh (1145) ; Uttar Pradesh (901).

West Bengal (1184) ; Assam (993).

Bihar (890) ; Orissa (801) ; Madhya Pradesh (690).

Maharashtra (1287) ; Gujarat (946).

This analysis depicted that regional pattern of rice productivity broadly remained the same except that Punjab and Haryana States in northern India excelled the southern States. Within each region, of course, the States changed rankings due to different growth rates achieved during the decade. In terms of actual average yield in 1967-68, the all-India average increased by nearly 10 per cent over the ten years. However, in different States the rate of increase varied from 23 per cent decline in Orissa to over 110 per cent increase in Punjab. The rates of increase during the decade in different regions were as under :

Tamil Nadu (34.2) ; Andhra Pradesh (14.8) ; Kerala (6.7) ; Karnataka (-1.2).

Punjab (110.5) ; Haryana (73.4) ; Rajasthan (50.6) ; Uttar Pradesh (29.8) ; Himachal Pradesh (5.9) ; Jammu & Kashmir (-7.0) ; Maharashtra (37.3) ; Gujarat (20.9).

Assam (1.9) ; West Bengal (-4.3).

Bihar (2.8) ; Madhya Pradesh (-12.1) ; Orissa (-22.9).

Largest increases have been obtained in the northern States of Punjab and Haryana and to a smaller extent in generally high yielding southern States, while in the eastern States there is practically no progress. There is rather a decrease in productivity. The States of Maharashtra and Rajasthan which were below all-India average have moved up above the all-India average position. It seems, therefore, that while variation in agricultural productivity may be explained, in good part, as due to the regional differences in soil and climatic conditions together with the extent of irrigation facilities, the variation in the rates of increases during the last decade may be attributed to the development of necessary infrastructural facilities and level of adoption of modern technology in these States.

TABLE II

Initial and final year trend values of wheat yield per hectare and percentage rate of growth.

States	Trend 1967-68	Value 1976-77	Growth rate per annum
Bihar	1046	1389	4.40
Gujarat	1321	1725	3.54
Haryana	1841	1893	0.33
Himachal Pradesh	791	1271	6.32
Jammu & Kashmir	945	899	-0.67
Karnataka	365	727	9.19
Madhya Pradesh	701	812	1.74
Maharashtra	339	1768	14.05
Punjab	2057	2452	2.36
Rajasthan	1054	1311	2.73
Uttar Pradesh	1166	1256	0.85
West Bengal	1604	2219	7.59
All India	1154	1396	2.44

Wheat is extensively cultivated in the twelve States of India. In 1967-68, the all-India average yield of wheat was 1154 kg/ha. Between States it varied from above 340 kg/ha in Maharashtra and Karnataka to over 1840 kg/ha in Punjab and Haryana. In seven of these States the productivity of the crop was below all-India average. After ten years in 1976-77, the all-India average productivity of the crop increased to 1396, thus, showing about 25 per cent increase over a decade. There was a general improvement in the productivity of the crops in all States except Jammu & Kashmir and the average yield kg/ha varied from about 725 in Karnataka to over 2200 in Punjab and West Bengal. The northern States of Punjab and Haryana, the eastern State of West Bengal and the western region of Gujarat and Maharashtra constituted the wheat area with comparatively high yields ranging between 1725 kg/ha, to over 2450 kg/ha, while Karnataka, Madhya Pradesh and Jammu & Kashmir are the States with considerably low yields. However, the rates of increases achieved during the year do not confirm to the same regional pattern. The rate of increases during the decade varied from zero (marginal decreases) in Jammu & Kashmir to about 140 per cent in Punjab. It is observed that the rate of increase in low productivity region is much higher compared to those States where the productivity was already high. In West Bengal, however, the rate of increase in productivity was around 76 per cent during this decade.

Regional pattern of rice productivity broadly remained the same except that Punjab and Haryana States in Northern India excelled the southern states.

The comparison of the progress of the two crops in different States during this decade shows that in the case of wheat the progress achieved was much better than in rice. The average increase in productivity at all-India level was around 25 per cent for wheat while it was only 10 per cent in respect of rice crop. The striking feature was that the northern States of Punjab and Haryana performed best in both the crops. This further confirms the general belief that the maximum benefit from Green Revolution has gone to the farmers in the wheat zones of the country. More emphasis should be placed on researches for increasing productivity per unit of land in rice crop. Further, in view of the variations in the levels of agricultural development in various regions and the regional diversity of the resource endowments, there is a need to evolve location specific technologies for minimizing the regional imbalance. □

Nepal's Economic Development

Navin Chandra Joshi*

BOUNDED by India in the south and by China in the north, Nepal is an independent Himalayan Kingdom with about 12 million population and a total area of 54,362 square miles. The physical setting of this landlocked country consists of the plain (Terai), the hills and the mountains, thereby carving out three broad geographic regions each with its own distinctive environment and natural resources. Mount Everest, the highest peak in the world, forms the most attractive section of the whole Himalayan range.

The Terai region has the greater part of economic growth because of its richness in forest and agricultural resources, transportation network and a better scope for industrialisation. The Himalayan region is a marginal area for human occupation due to its harsh environmental conditions and has sparse population engaged mainly in barter trade in pastoral and some agricultural goods. The hilly and mountainous regions have about 60 per cent of the total population with two-thirds of the total area and less than a third of the total cultivated area. Obviously, the highlands region faces a heavy pressure of population on its limited agricultural land with no industry worth the name.

For development purposes, the country has been divided into four regions—viz, the far western, the western, the central and the eastern, with regional centres at Surkhet,Pokhara, Kathmandu, and Dhankuta respectively. Following the adoption of the partyless panchayat system, the village and district panchayats of Nepal, run by the elected representatives of the people, have already developed themselves not only as political units but also as effective means for local development by mobilising local resources and manpower and by eliciting mass participation. The recent political referendum in the country again vindicated the strength of the existing panchayat system as a vehicle for development. Like public and private sectors, Nepal's economic plans have provided for a Panchayat Sector with financial and physical targets of its own.

The country adopted its First Five Year Plan in October 1956. In July 1962, the Three Year Plan was launched. Subsequently, the Third Plan for a five-year period was implemented as from July 1965. While the Fourth and the Fifth Five Year Plans ended in April 1975 and April 1980, the current Sixth Plan is for the period 1980—85. Table I depicts the picture of outlays in these Plans.

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Plan Outlays

(Rs. in million)

Plans	Estimated Outlay	Actual Outlay
First Five Year Plan . .	330	214.30
Second Three Year Plan .	600	566.62
Third Five Year Plan . .	2500	N.A.
Fourth Five Year Plan . .	3540	N.A.
Fifth Five Year Plan . .	11404	N.A.
Sixth Five Year Plan . .	28000	..

N.A.—Not Available.

Almost 90 per cent of the country's population is engaged in agriculture when only 14 per cent of the land area is under cultivation. Forests cover 32 per cen of the land and the rest constitute the high mountains. Of the total cultivated area of the country, the entire Terai region occupies more the 60 per cent although it forms only about 20 per cent of the gross area of the country.

It is true that development expenditure has been increasing from Plan to Plan. For example, it rose from Rs. 330 million in 1956 to Rs. 28,000 million, almost by 85 times, in a period of about 24 years. This is phenomenal. But then, in the present-day world of inflation, financial targets have become of doubtful validity and reliability in so far as actual development is concerned. Now the public sector expenditure during the Sixth Plan period will be of the order of 70 per cent of the aggregate outlay.

Industrial Scene

The present rate of investment in Nepal is around 15 per cent of the Gross Domestic Product (GDP). The major portion of the economy is still non-monetised and therefore, the larger portion of savings has to come only from the monetised sector. This fact highlights the need for a considerable portion of total investment from external assistance. While non-developmental expenditure has been increasing from year to year, additional money supply has been used more for financing non-developmental activities with the help of deficit financing. This has been one major reason for building up inflationary pressures in the economy from year to year. Increase in prices of domestic goods and higher prices of imported goods have not served as encouraging factors for improving domestic output. Although inflation is a world-wide phenomenon, in the context of Nepal's economy, it presents itself as a very difficult problem. The reason for this is that the country's economy is as much dependent on its domestic production as it is on imports of various types of goods—both consumer and capital goods.

In the matter of domestic industrialisation, His Majesty's Government formulated a new industrial policy in the wake of the Fifth Plan. The policy recognises that Nepal's industrial sector can develop only by making small-scale industries as a catalytic agent. As such, the small-scale industries of the country now assume a pride of place in the scheme of the overall economic development of the country. The small-scale sector comprises modern small industrial units, cottage and handicrafts units as also the traditional small enterprises. A majority of the small units of the modern type are located in the four industrial districts (estates) of Nepal of Balaju, Patan, Hetauda and Surkhet. At Hetauda (in Terai area), there are some units that fall in the category of medium and large scale units. The major aim for establishing industrial districts has been to bring about a regional balanced development in the country. However, the growth process through the small-scale sector has not been able to make any dent in the poverty of the people : nor have the small units developed in size and their scale of operation. A kind of stagnation is only too evident. Amongst the major reasons for this state of affairs are the inadequate infra-structural facilities, lack of entrepreneurial and management expertise. bureaucratic delays and lack of coordination among the concerned ministries, departments and institutions of the Government. As such, development, expansion and modernisation of these industries have not taken place in any significant measure

The hydroelectric potential of Nepal is what oil is to West Asian countries.

Power Potential

With increased emphasis on balancing the growth of different production sectors and geographical regions of the country, power development becomes only too critical an input, not just as an additional facility of infrastructure. Indeed, considering the total potential of hydro-electricity in Nepal, electrical energy becomes an end-product through which the national and per capita income of the country will get pushed up. With proper and adequate harnessing of water resources, Nepal's economic growth must become not only self-sustained but sufficiently viable in the sphere of international trade as well. In fact, the hydroelectric potential of Nepal is what oil is to the West Asian countries.

One important aspect of hydro-electric development in Nepal is that its potential can be optimised by selling it to other countries. And it is a fact of geography that India can be the major buyer of electricity from Nepal. It is also true that India cannot exploit one of the greatest natural resources in the world, which it shares with Nepal, except on mutually cooperative basis. Now it is encouraging to note that the Sixth Plan (1980—85) states that the country would "systematically undertake the development of small hydel projects in appropriate areas of the hill region to foster the development of irrigation and village industries even though establishment of such infrastructure might not be normally feasible purely from economic cost and benefit consideration." The present estimate of Nepal's total hydro-electric potential is 80 million kilowatts.

Exports

In the export field, handicrafts have long been major items of Nepalese exports. These goods are the important items next to jute goods as foreign exchange earners. They provide employment to around five lakh workers. Handicraft sector contributes 6.65 per cent to the G.D.P. of Nepal and on the basis of handicraft sector's contribution to the GDP, it can be presumed that the total production and domestic consumption of handicrafts goods exceed Rs. 550 million per annum.

The country has some financial institutions which help in providing loans and other facilities to all types of industries. There is a need for realignment of policies of the four major institutions—viz., Nepal Industrial Development Corporation, Agricultural Development Bank, Nepal Bank and Rashtriya Banijya Bank—so as to synchronise their lending activities. The Industrial Service Centre provides consultancy services but its functions should be more broad-based so as to undertake supply of plant and machinery, equipments, etc., on a hire-purchase basis to small units. The Sixth Plan envisages the establishment of a separate organisation, viz., Small and Coltage Industrial Development Corporation, to extend credit to local entrepreneurs and industrialists, distribute tools and raw materials and purchase promptly the finished products at market prices.

One major problem faced by the industries of Nepal is how to find and establish a market for their products. The need for governmental assistance in the marketing of products has been duly recognised but nothing has been done in this direction as yet. In the present circumstances, it would be useful and appropriate to set up a national marketing service corporation. It should build up a network of services with the help of techno-economic expertise. It may undertake market promotional activities for the benefit of all types of manufacturers. These activities should consist mainly of providing, promoting and specialising in commercial contacts between sellers and buyers and introducing the requisite quality control and improvement measures as well as a common brand name for inspiring the necessary confidence in consumers about the reliability of products.

Burden on Land

Since agriculture is the mainstay of the Nepalese economy, agricultural development is a pre-condition for growth and industrialisation. The Fifth Plan accorded top priority to agricultural development by allocating 34.5 per cent of the total outlay to this sector. Also, in the Sixth Plan top priority has rightly been given to programmes designed to raise agricultural production and productivity. The major plank of agricultural policy in the Plan is to create conditions in which cultivation of multiple crops becomes possible on the available cultivated land since cultivable land is not sufficient in relation to the manpower of the country. The multiple cropping system will not only help increase agricultural output significantly but will also help to utilise the unlimited rural manpower currently underemployed in the country.

The most outstanding phenomenon of Nepal's agricultural sector is that the majority of farmers, both tenants and landowners, have very small, fragmented and scattered holdings. The country's National Planning Commission made an estimate of the average farm families and their per capita income, as is revealed in Table II.

TABLE II

Data on Agricultural Farmers

1975-76 (In Rupees)

	Size of farm			
	Large	Medium	Small	Marginal
Average family Income	8,377	7,256	5,305	4,197
Size of Family (In number)	7.82	6.52	5.61	5.16
Per Capita Income	1,071	1,111	984	813

Since these calculations were made, it has been noticed that the per capita income of small and marginal farmers has been declining every year. In 1978-79 it came down to Rs. 805 and Rs. 522 respectively for them. The poverty line in Nepal is considered to be at the level of Rs. 730 per annum and below. It means that all marginal farmers are below the poverty line and the small farmers are just eking out a living with the potential threat of coming below the poverty line any time now. All this shows how tenuous is the living condition of the majority of farmers in Nepal.

Disparities

The present man-land ratio in Nepal is 300 per 100 hectares of cultivated land while the average size of holding comes to roughly 1.5 hectares. As the cost of cultivation is financed largely by the tenant, the existing method of cultivation which is generally traditional, does not permit a relatively large unit of farm. Agricultural productivity being too low and the burden of rent and taxes being too high, the majority of peasants live on the margin between subsistence and destitution. Agricultural productivity might have increased had the elite groups ceased to exercise political domination over the peasant. "In fact, the land-owning elites were allowed to exercise domination over the peasants only in order that the political elites might avoid an attack upon their political authority, while the village elites were necessary in order that this domination might be exercised effectively. In other words, the peasant bore the burden of sustaining not only his political and economic overlords but also their local bailiffs" says Mahesh C. Regmin in his book 'Thatched Huts and Stucco Palaces.'

Due to low productivity and lack of capital investment in agriculture, no upsurge could take place in Nepal's agricultural sector and this explains why the country has remained poor with all its abundant natural resources and the patriotism of the people. Further, an important dimension to the development problem in Nepal is the marked disparity in the different regions. It is so between the vertically divided development regions as also between the horizontally divided natural regions such as the mountains, the hills and the Terai. Barring the Kathmandu Valley, which is a small pocket, the Terai region leads the rest of Nepal in economic development. It is also true that hitherto no other region has received larger attention than what the Kathmandu Valley got. B. S. Bhooshan says in his 'The Development Experience of Nepal', "The aim of Nepalese planners has been to make great achievements with the least change in the social and political system. This is probably a requirement of the political and bureaucratic elites who man the system." In any case, so far planning in Nepal has been an exercise of fitting macro-economic theories and models in a highly fragmented economy. Consequently, it often lost sight of the common man who constituted the majority.

Development in Nepal has indeed been equated with attaining physical and financial fargets without percolating the fruits of economic progress to the masses. Even with some progress achieved in building the infrastructure within the country, the question of equity was never raised boldly any time and the backward groups never got any special assistance. The situation has now been corrected to some extent by adopting the principle of regional planning and decentralisation in decision-making. However, to what extent it can put the country's economy on an even keel is yet to be seen.

Foreign Aid

As regards development through foreign assistance, Nepal has attracted unusual attention from aid givers and has received aid from so many sources. A large number of aid programmes operate within the limited area of the country. In a developing country like Nepal with limited resources of capital equipment, personnel and technical services, foreign aid naturally plays a vital role. It was since 1951 that Nepal started getting the inflow of foreign aid from various donor countries and agencies such as the U.S.A., U.K., Australia, Canada, China, India, New Zealand, U.S.S.R., Ford Foundation and the U.N.O. Today, India is the biggest aid-giver to Nepal.

It has been noticed that the per capital income of small and marginal farmers has been declining every year.

Nepal joined the Colombo plan in March, 1952. It has been receiving various kinds of aid under the Plan. Indeed, Nepal provides a fascinating example of a recipient who gets economic assistance from diverse sources—communist, non-communist, aligned, non-aligned, developed and underdeveloped countries. With foreign assistance and domestic efforts, the annual average economic growth rate in Nepal has been of the order of about 2.5 per cent but the increase in population has also been of the same magnitude. Therefore, the net

TABLE III
Vital Data of Fourth and Fifth Plans

Items	Fourth Plan (1970—75)	Fifth Plan (1975—80)
1. Projected Growth Rate	4 per cent	5 per cent
2. Estimated GDP at the end of the Plan period	Rs. 7873 million (at 1964-65 prices) Rs. 12061.71 million (at 1974-75 prices)	Rs. 15318 million (at 1974-75 prices)
3. Total Estimated Investment	Rs. 3530 million (at 1964-65 prices)	Rs. 8670 million (at 1964-65 prices) Assuming 3% rise in prices, it comes to Rs. 10,110 million at 1974-75 prices)
4. Estimated Investment in Agricultural Sector	Rs. 1171.8 million (at 1964-65 prices)	Rs. 3581 million (at 1974-75 prices)
5. Percentage of Investment in Agricultural Sector to the Total Investment	33.0%	35.4%
6. Estimated Capital—Output Ratio (overall)	2.3	2.74

growth rate in per capita income has been marginally beyond zero. The vital economic data in respect of the Fourth and the Fifth Plan are given in Table III.

The National Planning Commission of the country estimated that national income should increase by 5 per cent during the Fifth Plan period. It pointed out that "there should be wide scope for the people to contribute to the increment of production through the utilisation of their labour. Only then will the increase in production lead to the corresponding rise in their purchasing power and thus derive benefit from economic development." It also stated that drastic changes would have to be introduced from the very beginning of the Plan in land revenue system in order to mobilise maximum resources from the agricultural sector. Evidently, therefore, while on the one hand, it is desired to increase the purchasing power of the rural masses, on the other, it is the rural masses that are expected to contribute to the maximum to the Government revenue. The rationale, on the face of it, appears to be sound. Those who are the beneficiaries of development must be asked to make more sacrifices in their consumption standards in order to reap a still richer harvest of income in future. However, this just cannot happen if we examine the position in the context of the Fifth Plan projections. With per capita income of Rs. 804 per annum at the beginning of the Fifth Plan, the rise by Rs. 23 per annum during the Plan period indicates an increase by 2.86 per cent per annum on an average.

The problem of stagnant economic growth can be solved only if the increase in savings and investments becomes a consequence of the success of developmental programmes rather than taken as a cause or even an objective in itself. For an aproach of this kind, a great thrust must be given to higher consumption of basic goods by the masses by putting both underutilised manpower and capital to effective work. In the ultimate analysis, this goal will not be achieved unless there is a more equitable distribution of income and production through an appropriate incomes policy. Indeed, what Raul Prebish found and recommended in the case of Latin American countries will hold good for the developing countries in the Asian region as well. He said, "The upper 5 per cent of the population that consumes 30 per cent, spends per average family 15 times more than the average family group in the lowest 50 per cent of the population. If this were reduced to 9 times, the rate of growth in per capita income would rise from one per cent to 4 per cent." This observation is suggestive of a policy by which major quantum of savings should come from the richer classes of the society. In Nepal, people of these classes essentially belong to the urban sector. Surely, a 5 per cent rate of growth may not be twice as good as a 2.5 per cent in case there is faulty distribution of income and consumption in the whole society.

Finally, a net migration from the rural sector to urban jobs may also be encouraged in order to reduce burden on the cultivated land. Improvement in the quality of labour and economic organisations should take place through education, including scientific research and technical training. The migration of population of a backward region cannot remain for long at the lowest level of human knowledge. Further, an improvement in capital-output ratio in agriculture can be effected better by doing away with disguised unemployment rather than by a capital syndrome. With such a reorientation in planning policy, the rate of savings of the masses will take care of itself. Measures for population control will act as a shot in the arm during the process of development. The irresistible conclusion is that in the absence of an appreciable rise in the incomes of the masses, efforts for mobilising savings from them will be nothing but groping in the dark in search of a black cat which is not there. Author Benkt-Erik Borgstrom has observed that no serious consideration has ever been given to how progress in the field of social justice is to be achieved without changing the given structure of social relations. "While capitalisation of the economy

(Contd. on page 22)

Waste water disposal system for villages

Narendra Verma and V. K. Gupta*

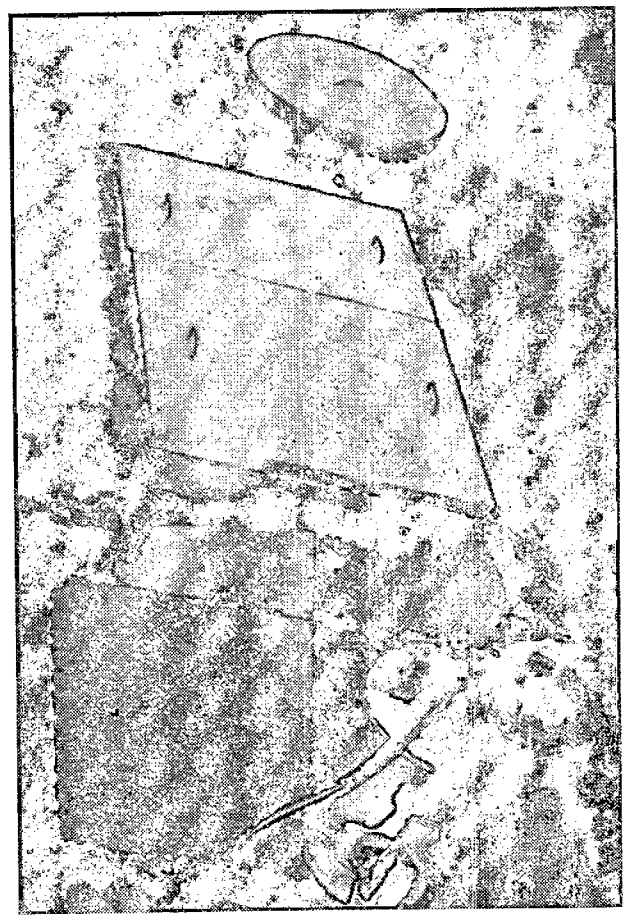
WASTE water disposal from dwellings is one of the foremost problems in rural areas. Waste water is disposed off on roads and lanes causing environmental pollution, encouraging mosquito and fly breeding and thus endangering the health of the inhabitants. The Central Building Research Institute, Roorkee has developed a soakage system for underground disposal of the waste water near its source. A description of the system is discussed here.

INDIA lives in villages. But these villages are stinking in insanitary conditions. The waste water is disposed off on kutcha roads and lanes having inadequate slopes. Movement of carts and animals makes the situation worse. It creates ditches full of stagnant and dirty water. Mosquitos and flies start breeding in mud creating danger of communicable diseases and health problem grows out of all proportions.

A detailed study of the problem was conducted by the Central Building Research Institute (CBRI), Roorkee and a system has been evolved keeping in view various factors like cost, maintenance and living habits.

Salient Features

The system consists of an ash-silt trap chamber and a bore hole. The ash-silt trap chamber is rectangular in shape having 7.5 cm thick wall of burnt brick laid in 1.8 cement sand mortar and is constructed near waste water outlet. It is divided into two compartments by a 7.5 cm thick wall and is covered with an RCC or reinforced brick lid. The size of first and second compartments are 45 cm x 45 cm x 70 cm and 30 cm x 45 cm x 70 cm respectively. Triangular ducts 8 cm x 8 cm in size and 46 cm deep are made in corners and adjacent to each other in both compartments, diagonally opposite to inlet. A hole is left in partition wall 11.5 cm below the top in the duct portion to provide connection between the two ducts. The second compartment is filled with 4 cm gauge brick ballast. In the first compartment silt and ash, that is, havier particles flowing with waste water settle down and floating and greasy materials are trapped. The water having only colloidal and suspended particles rises through the duct of first compartment and flows to the bottom of second compartment through the duct of this compartment. The suspended and colloidal particles get stuck to the brick ballast and only clear water is alowed to flow into the bore hole for final underground disposal. When first compartment gets filled with ash and silt, the lower mouth of the duct will be closed and water will stop flowing to the second compartment. This will cause flooding of the first compartment and back flow of water indicating that the compartment requires cleaning. The system is reactivated by removing ash and silt from the first compartment.



Prototype of the proposed soakage system

The bore hole with the help of an augur is made, 30 cm in diameter and is deep enough to reach the first layer of sand subject to maximum depth of 3 metres. It is also filled with brick aggregate. It is proposed to construct this system in the courtyard of house owner so that in case of choking of the chamber, the house owner will have to clean it on his own to avoid nuisance created by overflowing water.

Unlike the existing soakage systems where the ash and silt directly flow into the soakage pit and cause choking, the proposed system provides for their retention in ash-silt trap chamber and its subsequent cleaning when the water starts overflowing. The estimated cost of complete system including the chambers and bore hole comes to Rs. 150. The retention of water in the first compartment and its passage through brick aggregates filled in second compartment and bore hole is also expected to reduce the BOD before the water reaches the subsoil water level.

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A prototype of the proposed soakage system was built in the colony of poor people in a village near Roorkee about two years ago. After its satisfactory performance, four such soakage systems were provided in four different houses in another village. They are also working without any problem. It is now proposed to construct these soakage systems on large scale in a village near Modinagar in collaboration with Modipon Ltd., under Modi Science Foundation, Modinagar.

The first compartment of ash-silt trap chamber should be cleaned in four months and the brick aggregate of the second compartment, at least once in eight months to avoid chances of any failure of the bore hole.

The proposed soakage system is a small compact unit designed for individual dwelling. This simple technique involves the use of locally available materials and labour. The technique is compatible to the average villager's economic level. The whole system is covered and is below the ground level avoiding any hindrance in movement and chances of mosquito breeding. External source for disposal of waste like river, pond etc. is not required.

The simplicity and low cost of the system, it is hoped, should encourage villagers to adopt it, thereby improving the environmental conditions of the village as a whole. Only an auger for making the bore hole is required and this could be procured by village panchayats or social welfare organisations. □

Electricity for All The Villages By 1995

R. R. Rao*

ALL the 5 lakh villages in India will be electrified by 1995 and about 20,000 solar pumpsets installed in about five years to come, at a cost of Rs. 50,000 each. This was disclosed to newsmen recently by Dr. T. G. K. Charlu, Chairamn of the Rural Electrification Corporation.

A record number 13,000 villages were electrified under the REC-assisted rural Electrification programme during 1979-80, inspite of scarcity of various inputs like aluminium, steel and power.

About 1.45 lakh pumpsets, at the rate of 400 a day, were energised in the year, with the financial assistance of the Corporation. About 92 per cent of the target in pumpsets and 84 per cent in the case of villages were achieved. The shortfall in targets is due to shortage of inputs, natural calamities like floods and lack of basic infrastructure in some backward States.

Under the Special Project Agriculture (SPA) programme, jointly financed by the REC, the Agricultural Refinance and Development Corporation and the commercial banks, over 300 projects were approved with the primary objective of increasing agricultural production through large scale energisation of pumpsets.

In the first year of the Sixth Five Year Plan it was proposed to electrify 20,000 villages and energise four lakh pumpsets.

The Corporation earned in 1979-80 a net profit of Rs. 5.99 crores against Rs. 4.56 crores in the previous year.

Consultancy services are made available to other countries. According to the agreements reached, the Corporation will provide technical assistance to Algeria and Egypt.

*Our Assistant Editor

Energised pump set in a village

The Corporation has so far sanctioned 3,639 projects involving an aggregate loan assistance of over Rs. 1,284.6 crore. On completion, these projects envisage electrification of 1,75,117 new villages i.e. about one-third of the total number of villages in the country, and energisation of 13,84,262 irrigation pumpsets and 1,79,426 agro-based and small-scale industrial units, besides millions of domestic and commercial connections and street lights in rural areas. The Corporation has already disbursed over Rs. 863 crore for the implementation of these projects which are normally scheduled for completion over a period ranging upto five years.

Upto the end of the this year 72,855 villages were electrified throughout the country under the REC-financed programme of rural electrification. This represents 75 per cent of the phased target. The number of irrigation pumpsets energised increased to over 5.77 lakhs, representing 79 per cent of the phased target. The number of industrial units energised in rural areas with the assistance of REC, increased to over 58,400. □

Lessons of Maharashtra Job Scheme

A JOINT evaluation of the Employment Guarantee Scheme of Maharashtra was carried out by the Programme Evaluation Organisation of the Planning Commission and the Maharashtra Government. The report on the evaluation has been released recently. The findings are expected to provide a basis for a better appreciation of the concept of Employment Guarantee Scheme and also help the State Governments in the formulation of future national rural employment policy, recently adopted by the National Development Council.

Launched in 1972 and given statutory status in 1979, the Maharashtra Scheme seeks to provide gainful and productive employment in approved works to all unskilled workers in rural areas who are unable to find employment either in farm or in allied operations in the area or on the normal Plan/non-Plan works implemented by the Government through various agencies in the State.

The Scheme at present covers the rural areas of the State and workers residing in municipal areas with population between 8,000 and 13,000. The evaluation study covered broadly three main areas : planning of rural works, organisation for execution of works and response of labour.

The study was conducted in eight Talukas located in Nasik, Sholapur, Beed and Bhandara districts representing Western Maharashtra, Marathwada and Vidarbha regions wherefrom 242 works and 3404 beneficiary households were selected for the study. The sample was loaded in favour of target groups consisting of landless agricultural labourers and smallest size cultivators. The selected households were contacted in four rounds during the period April, 1976 to October, 1978. Also, muster roll abstracts for 25 selected works were obtained from the implementing agencies with a view to studying the behavioural pattern of attendance of workers.

According to the Evaluation Report, a total of Rs. 216 crores had been spent on this scheme from 1972-73 to February 1979. The scheme has been financed by the State by taxes on profession, trade callings and employment, additional tax on motor vehicles, additional sales tax, special cess on irrigated agricultural lands, surcharge on land revenue, and taxes on residential urban lands and buildings under the Educational Cess Act. The State Government had in turn provided a matching contribution to the net collection of taxes and levies every year and credited to a separate fund called the "employment guarantee fund".

Work for Many

The vigorous implementation of the scheme resulted in the generation of 56.27 crores person days of employment. The average wages earned were 18 per cent higher on EGS works than on "other works". In fact, 53 per cent of the participating households had conceded "better wages" as a primary reason for participation in EGS works.

Wage disparity between men and women was less in EGS works since wages are paid on the basis of output. There was also a predominance of female participation to the extent of 57 per cent in 52 out of 87 selected works in progress, which included specially major irrigation works.

About 78 per cent of the selected households had reported increase in agricultural production to the extent of 25 per cent due to utilization of EGS assets. About 40 per cent of the cultivators had taken to raising of new crops. Thus the Scheme had given them both technical and economic exposure to achieving higher production possibilities.

In addition, increase in earnings due to utilisation of EGS assets had enabled the user households to repay their loans. Out of 480 households repaying loans, 355 could do so on account of increased earnings from EGS works.

It was observed, according to the Report, that as many as 78 out of 87 selected works of different categories that were in progress had not been completed due to various reasons. These were : uncertainty in the availability of labour on a continuous basis, late non-payment of compensation for the land acquired for works, and non-availability of equipment like road-rollers, water tankers, air compressers for irrigation works and explosive for blasting etc.

Launched in 1972, the Maharashtra Job Guarantee Scheme seeks to provide gainful and productive employment to all unskilled workers in rural areas.

Poor Maintenance

In overwhelming cases of completed works, necessary complimentary investment had not been made in the form of construction of wells, land levelling and land shaping, application of fertilizers and other essential inputs. This had resulted in the sub-optimal use of the potential created. No specific agency seems to have been assigned the responsibility for the follow-up, including extension and credit supplies, to realise optimum benefits.

It was feared by several implementing agencies that in course of time physical condition of works would deteriorate due to lack of maintenance which was the responsibility of Departments executing the work or of Zila Parishads. For want of adequate funds Zila Parishads were reluctant to accept transfer of completed works from different agencies.

(*Contd. on page* 14)

Stabilising Kharif Crop Production

A. R. Patel and (Mrs.) Rupa M. Shah*

KHARIF is the most important season so far as food production in India is concerned. Recent research in the area of dry-land agriculture has clearly established that by following appropriate farm-management techniques such as proper preparation of seed-bed, selection of appropriate varieties and so on yields of very high order can be obtained.

Dry farming experts now feel that the weather cannot be held responsible for all crop failures. An analysis made by the scientists of the Sorghum Improvement Project in 1972-73, a drought year, has revealed that jowar yields, for example were affected adversely more by farm management techniques than by paucity of moisture. They ascribe only 20 per cent of the yield variation to climatic factors. The rest is due to controllable factors, such as choice of variety, date of sowing, incidence of weeds, adoption of cultivation practices etc. These conclusions had been further corroborated by the experience in Maharashtra in 1974-75, another bad rainfall year. The scientists therefore suggest that the first step in improving dry farming is to replace the traditional crop varieties with high yielding strains of appropriate maturity periods. During performance tests, some of the strains had out-yielded the established local varieties by 50 to 80 per cent. Apart from judicious selection of crops, various other factors also help in boosting yields and providing reasonable insulation insurance against weather abberations. Some of these factors are : proper preparation of the seed-bed, timely sowing, use of manures and fertilisers, control of pests and diseases, and adjustments in crop plans to suit the season which are as useful for irrigated areas as for dry lands.

Climate

The analysis of the climatic parameters reveals that there are four important variations in the behaviour of the monsoon rains in the country, namely, (i) commencement of the rains may be quite early or considerably delayed, (ii) there may be long 'breaks (in July or August)' (iii) the rainy season may end considerably earlier or, (iv) the rainfall may be unevenly distributed in space and time, being excessive in one part of the country and deficient in another, and/or excessive in one part of the season and deficient during another.

Various varieties of the crops, different cropping patterns and the techniques of cultivation are therefore being evolved at the ICRISAT, Begumpet (A.P.) and other centres to tide over these variations and ensure minimum economic net return in the dryland areas.

Cropping Patterns

Under 'crop cafetaria' many crops were tried. They included millets (bajra and sorghum), pulses (arhar and mung), fodders (Jowar and cowpeas) and some commercial crops (castor, soyabean, guar) in Kharif season. Among the Kharif crops, castor gave the highest profit of Rs. 2250 per hectare. Arhar with a net return of Rs. 2245 was equally remunerative. The transplanted crop of bajra yielded a handsome net income of Rs. 1405.

However, the choice of crops, crop varieties and crop sequences to fit to the climatic parameters of a situation, is key to success in rainfed farming. In the wake of the crop improvement programme launched by the ICAR, plant breeders have evolved many high yielding, short duration and photo-insensitive crop varieties which are suitable for dryland conditions. Change in the geometry of the crop is also essential for increasing the efficiency of the conserved moisture. Sowing the crop in furrows and leaving ridges in between the furrows, making raised beds and depressions by scooping the soil and sowing in the depressions are being tried. The bajra crop can be grown on raised seed-beds (with ditches in between) as a transplanted crop. This would provide a better rooting medium, better drainage and aeration for the bajra crop and more importantly to divert, collect and conserve all excess rainwater in the ditches for growing a second crop on this land in the rabi season (sarson or taramira). With the introduction of high yielding varieties and change in the breeding concept to evolve varieteis suited to dry farming areas, the crop-productions aptly suited to different local agro-climatic conditions have been evolved and recommended by the dry-land research centres and many more are being experimented.

Can weather be blamed for all crop failures? According to an analysis made by the research scientists of the Sorghum Improvement Project during a recent drought year, crop was affected adversely more by faulty management techniques than by paucity of moisture.

Plant Population

The crop production strategy envisages the need for adequate plant population per unit area. This strategy brings down the cost of production. In case of rice, the emphasis is on ensuring the good stand of the crop and proper plant population. In the areas where the rice transplanting is already popular, they should promote timely planting so that the crop ripens by the

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end of October and can be harvested before the temperature starts falling. This will facilitate the cultivation of second crop in the rabi season.

The scheme for raising community nurseries of paddy which was hitherto confined primarily to the eastern States to facilitate early sowing and mitigale flood damage, has now been extended to other States.

Scientists suggest replacement of traditional crop varieties by high yielding strains of appropriate maturity periods.

In the case of jowar, the second major grain Kharif crop sown over 17 m hectares, the stress is on popularising hybrid varieties. A short-duration hybrid variety CSH-5 has proved very successful in Karnatak, A.P., Maharashtra, Rajasthan and other States. It has given substantially higher yields than the traditional varieties and escaped midge attack.

Fertilisation

In the past, application of fertilisers was considered to be luxury in dry farming and was thought ineffective because of want of moisture in the soil. Techniques are now developed whereby efficient use of fertilisers can be made. The present varieties respond very well to fertilisers. Two efficient methods of fertilisation are through (a) placement below the soil 5 cm away and 5 to 7 cm deep from seed and (b) foliar application. Results obtained at the IARI have shown that bajra yield of 20 quintals per hectare was increased to 30 quintals per hectare when fertilised with 40 kg. N/Ha. Similarly maize yield of 5 quintals was raised to 28 qnintals per hectare by application of 40 kg. N/ha. Arhar crop responded to the application of phosphorus. Application of 100 kg-P_2O_5/ha gave yield of 28 quintals per hectare as compared to 12 quintals per hectare from unfertilised plots. The new crop varieties not only respond to the amount of fertiliser but also to the techniques of fertiliser-application.

Soil Conservation

Soil conservation is the basic need in these areas and without bunding, levelling and other protective practices, permanent system of agriculture cannot be established. There are several methods of soil and water conservation : (i) mechanical measures or bunding, terracing, contour listing, contour tillage, mulching etc. (ii) agronomic practices like strip cropping, contour farming, lay farming, stubble farming etc. In dryland farming the soil moisture storing capacity is considered most important. In the new technology mechanical and occasionally chemical manipulation of soil is sought for, to increase its rainfall absorption capacity and moisture retention character for successful crop growth. Optimum effective rooting depth of soil is therefore very much desirable. When the rooting area and moisture storage capacity of some soils are restricted to less than 15 to 20 cm. soil depth posing serious problems, the layer has to be loosened so that the greater soil volume becomes available for root growth and moisture storage. This is done by deep ploughing through tractor or chiselling equipments.

Deep ploughing and sub-soiling in areas where the subsoil has a highly compacted zone to make the subsoil pervious to water and root penetration, surface hoeing to reduce evaporation, seems to be advantageous for capturing most of the rain water and storing it for the crop growth. Compaction of the soil between the rows or use of asphalt, bentonite, etc., for making the subsoil impervious are other promising techniques for moisture conservation in sandy and highly permeable soils which suffer from too much permeability.

Thus, crop-planning exercise involving farm-planning and budgeting aspects has proved that crop-productivity and ultimately crop-production can be increased significantly. This exercise helps farmers overcome the natural/climatic hazards since management aspects are responsible for increasing on decreasing crop-productivity to the extent of 80 per cent. rather than vagaries on monsoon. □

Maharashtra Job Scheme

(*Contd. from page* 12)

The landless agricultural labourers who did not participate in the programme were essentially those living hard to mouth and could not afford to wait for the wages to be paid after a week, 10 or 15 days of their participation of EGS works. Despite knowledge of better wages on these works, says the report, a view has to be taken whether a shift in policy is called for on the part of the State Government to encourage better participation from this section of target group.

It was also observed, says the Evaluation Study, that benefits of the assets created by the EGS works, hand to mouth and could not afford to wait for the farmers. The small and marginal farmers constituted only 21 per cent of the user households.

Other major findings of the Report are : (1) There was greater increase in employment on part-time jobs than in full employment, (2) In the case of works contributing to the productivity of land, viz., irrigation, soil conservation, land development, afforestation etc., the proportion of expenditure incurred was 93 in 1974-75 but subsequently came down to 75 in 1978-79, (3) The pace of expenditure on works which were taken up under the scheme at various times was quite slow. Out of 1163 works started, 273 had continued for more than a year. In case of 60 per cent of these works not even half the expenditure had been incurred, (4) The Scheme had helped in breaking down caste barriers since all rural workers worked together on a project irrespective of caste or religious affiliations. Besides, multiplier effects of investment on EGS works are important since it had provided permanent employment creation and increased agricultural production through various irrigation and soil conservation works. This had also helped in introducing new remunerative crops □

Sericulture : Performance and Prospects

Dr. Badar Alam Iqbal*

IN India, sericulture can be broadly classified into mulberry and non-mulberry. Mulberry silk is manufactured in organised sector constituting about 84 per cent of the total natural silk production. The non-mulberry silk consists of tassar, eri and muga. India is the only country in the world which produces all the four commercially known varieties of natural silk.

With an output of 3,300 tonnes of mulberry silk and 425 tonnes of non-mulberry silk in 1978-79, India ranks fifth in respect of mulberry silk production and second in tassar production in the world, constituting 5 per cent and 10 per cent respectively of total world production. Sericulture is a labour intensive industry. Besides generating employment, it can also help in earning valuable foreign exchange. Its exports have already crossed Rs. 44 crores.

The sericulture has many good points. Firstly it is not capital intensive. It requires a small capital of Rs. 500 to create one job. It can yield good results too. For example one hectare of land under jute yields Rs. 3,837, paddy Rs. 4,056 and wheat Rs. 1,280. The same land nets annually Rs. 15,750 under mulberry. One hectare of mulberry cultivation gives employment to 12 people and earnings per hectare are twice as much as from jute and rice. Many cultivators have already switched over to sericulture replacing jute in West Bengal, Cotton in Tamil Nadu, grapes in Andhra Pradesh and sugarcane in Karnataka.

Production

Sericulture is mainly located in Tamil Nadu, Karnataka, Uttar Pradesh, West Bengal, Andhra Pradesh, Assam, Bihar and Jammu and Kashmir. The State Governments concerned have taken several steps for its development especially that most of it is confined to the handloom sector. In 1978-79 the total production of raw silk was 3,725 tonnes. Raw silk production is confined mainly to the states of Karnataka, West Bengal and Jammu & Kashmir, which together constitute bulk of the country's mulberry production. Tassar silk is largely produced in Bihar, Madhya Pradesh and Orissa. Assam acounts for major share of the output of eri and muga silk.

The total output of mulberry silk has gone up by more than 137 per cent between 1963-64 and 1978-79, whereas the total production of non-mulberry silk has declined by 25 per cent during the same period. Added to this, the annual output of mulberry silk waste is nearly 1,100 tonnes, while the annual production of non-mulberry waste is around 2,700 tonnes. The value of sericultural goods at the current prices is nearly Rs. 150 crores. According to an estimate, the production of both the mulberry and non-mulberry silk would be 7,500 tonnes by the end of Sixth Plan.

Employment

The second aspect of sericulture is its employment potential. It is one of the agro-based industries, which have labour intensive character. It offers vast scope for employment to the rural masses. It has also the potential to provide regular income to rural poor. Sericulture at present provides livelihood to nearly 38,00,000 persons. Out of these, more than 10,00,000 people belong to the backward classes. According to an estimate 4,00,000 additional jobs would be generated during the Sixth Five Year Plan.

Karnataka ranks first, accounting for more than 52 per cent of the total employment in sericulture industry. North-eastern states come next to Karnataka constituting nearly 11 per cent. while West Bengal holds third place with 10.4 per cent, followed by Assam and Bihar. Madhya Pradesh and Jammu & Kashmir have a marginal share in the total employment. This all reveals that Karnataka is the only state where sericulture is flourishing and the state Government is paying added attention on the development of sericulture, while the Governments of other States are not playing any significant role in the development of such a labour intensive industry. Thus, the need of the hour is that the Central Government as well as State Governments must pay due attention to its development, which can offer vast scope of employment opportunities and would reduce the existing unemployment to a large extent.

India is self-sufficient in silk yarn twisting capacity having nearly 1,50,000 spindles. Silk weaving is only confined to handlooms and 1,40,000 handlooms as well as 40,000 powerlooms are in pure silk weaving. Uttar Pradesh holds first place having 80,000 handlooms. Tamil Nadu comes next followed by Assam.

Export

Sericulture can also help in earning valuable foreign exchange. Considerable progress has been made in the export of silk goods. In 1979-80 foreign exchange earnings from silk products touched an all-time record figure of Rs. 50 crores.

The export earnigs from silk goods have gone up by more than 2400 per cent between 1963-64 and 1979-80, while India's total export earnings went up by more than 667 per cent during the same period i.e. from Rs. 795 crores to Rs. 6100 crores. This shows that the rate of increase in the export earnings from silk goods is more than 3.5 times higher than the rate of increase in the export earnings from all commodities. The share of silk goods export has increased

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from the lowest point of 0.25 to 0.81 per cent i.e. a rise of 0.56 per cent during the 16 years to 1979-80. Sericulture, thus, has bright prospects. This is further expected that the export earnings from sericulture would reach an all-time high figure of Rs. 100 crores by the end of Sixth Plan. This significant rise in export is mainly because of the spurt in international demand. There is also a phenomenal rise of nearly 27 per cent in the unit-value realisation. The developed nations consume nearly 90 per cent of world's raw silk output. West Germany and the USA are the two largest importers of Indian silk goods. These two countries imported silk goods worth Rs. 5.9 crore and Rs. 5.4 crores respectively. Other major importers are Malaysia, Saudi Arabia, France, Italy and Switzerland, Item-wise, silk sarees are the leading item of exports bringing in foreign exchange worth Rs. 7.9 crores. Dress materials come next amounting to Rs. 7 crore. Ready-made garments hold third place accounting for Rs. 5.2 crore. During 1978-79, the exports of dress materials and ready-made garments increased by 53 per cent and 92 per cent respectively.

Indian handloom silk fabrics have been enjoying duty free entry into European Economic Community (EEC) against annual quota ceilings. The duty quota for the year 1979-80 has been fixed at 22,00,000 units of account. Switzerland also followed quota system. Despite certain ceilings on quota, and certain other restrictions at the international level as well as tough competition with other nations, there are still vast prospects for increasing silk goods exports.

To ensure orderly development of exports, certain steps have to be initiated and implemented. One of the important steps is the pre-shipment inspection of natural silk goods. The Central Silk Board conducts inspections and issues certificates for cash compensatory suuport and certificates needed under GSP in which raw silk has been included. There is a cash compensatory scheme under which compensatory support is available to the extent of 10 per cent of the f.o.b. value on exports of natural silk fabrics and 15 per cent of the f.o.b. value on export of natural silk ready-made garments. This should be increased to the extent of 12 per cent and 17 per cent respectively.

If India wants to compete with other rivals such as China, which holds first place in tassar silk, and South Korea, it is essential to keep vigil on quality front, because demand in developed nations is confined to quality silk which alone could be processed on the sophisticated weaving machinery.

Constraints of growth

Like other industries, sericulture also faces certain major constraints like supply of seed and other inputs, financial accommodation and marketing. Marketing is one of the most important handicaps which stands in the way of development. Price stabilisation and procurement schemes have been implemented by the CSB. Though these have imparted a measure of stability in the market, there is still need to improve structure of marketing as uneconomic prices adversely affect primary producers who largely belong to backward areas. Research is another factor which needs concerted efforts, especially to solve the problems of high cost of cocoon output as well as inferior quality of raw silk. A network of research stations and centres is essential in a state particularly for developing new strains of mulberry and to control pests. It is appreciable that in areas where pests have been controlled and improved rearing techniques have been adopted, the cost of cocoon has declined considerably to Rs. 12.20 per Kg. instead of Rs. 16.60 per kg.

For rapid development of sericulture many developmental schemes and programmes have been implemented such as Intensive Sericulture Development Programme (ISDP). The small and marginal farmers including scheduled castes and scheduled tribes, who are finding sericulture a paying occupation, are expected to get benefit from the various programmes sponsored by both Central as well as State Governments. In 1978-79 the sericulture developmental schemes and programmes in concerned states included 197 agricultural schemes involving outlay of nearly 8 crore. These schemes covered a wide spectrum including development of melberry, tassar and muga silk rearing and reeling and spinning of silk, research, training and marketing, effective supply of cocoon seed and nurseries. The initiation of Intensive Sericulture Development Programme (ISDP) has helped in strengthening the infrastructure for silk rearing..... training rearers and reelers, assured supply of mulbery cuttings and disease free seeds, obtaining technical know-how and enlarging the markets. All these schemes require huge finance. In this regard commercial banks are playing a positive role by making available credit at concessional rate. These banks are also providing finance for the construction of rearing houses and purchasing of appliances.

The developmental schemes and programmes of sericulture have shown good returns. Nearly 132 nurseries are functioning for the purpose of supply of mulberry saplings and cuttings of improved varieties. The acreage under mulberry silk has also gone up considerably i.e. from 1,30,095 hectares to 1,40,633 hectares in 1978-79, showing an over-all rise of more than 7 per cent. Similarly, the yielf per hectare went up to 24 kg per hectare from 10 kg per hectare i.e. an increase of 140 per cent during the same period. This means that the rate of increase in yield per hectare is much higher than the rate of increase in the area under cultivation. However, it is still low in comparision to 73 kg per hectare in South. Korea. Output of mulberry reeling cocoons has also gone up from 4,65,00,000 kg. to 4,90,00,000 kg. Likewise, mulberry silk rearing has been extended to certain new areas providing livelihood to a considerable number of persons belonging to rural areas.

In India 239 basic seed farms and Government grainges are operating. Besides many more seed farms are also functioning in the private sector. Added to this, 79 silk farms and grainages have also been organised by the CSB under ISDP. There is also fast extension in new areas so far as tassar cocoons are concerned and 89 tassar seed supply centres and subcentres are functioning in different states of the country. States Governments of Madhya Pradesh and Orissa have established 28 and 8 pilot stations respectively for the supply of tassar silkworms to farmers in their respective states.

From the above discussion, it emerges that by and large, sericulture is an occupation that can be undertaken on a small scale and by persons with limited means as allied activity. It is suggested that both Central and State Governments should pay more attention to the development of this potential industry. □

TRENDS

Social Objectives of Private Sector Growth

WITHIN the framework of the Sixth Plan considerable scope existed for expansion of industries in the private sector if it subserved, the broad social objectives. This was stated by Shri Narayan Datt Tiwari, Union Minister of Planning and Deputy Chairman of the Planning Commission, while addressing representatives of trade and industry recently in New Delhi.

Outlining the social objectives, the Minister said, particular attention would be given to the promotion of cottage, village and small industries with a view to generate more employment opportunities. It was also to be ensured that there was a measure of regional balance so that the benefits of industrial development percolated to various parts of the country.

Shri Tiwari also said : "Whether it be in the small or large sector, however, the optimum utilisation of resources and a substantial improvement in productivity should be a vital concern so that the benefits from investments already made are maximised. In turn, this would call for renewed emphasis on improvement of skills and technological upgradation of our industrial structure. Research and development within industry must find a greater sense of priority than hitherto."

The Minister added that the additional resources required for the investment envisaged in the Plan would have to come in a substantial measure from the surplus generated within the industrial sector. Approximately 80 per cent of the Government revenues were derived from indirect taxes, the bulk of which was accounted for by industrial products. Buoyancy as well as quantum of Government revenues was thus dependent on the level of industrial growth. The growth of industrial production in the last decade had averaged around 4 to 5 per cent only. In 1979-80 industrial production actually declined by 4 per cent. We are not securing the benefits from the substantial investments made in the industrial sector. Capacity utilisation and productivity have generally declined.

Emphasis on Science & Technology in Sixth Plan

"THE present Sixth Plan frame hopes to assist those sections of population who are totally resourceless. One of the schemes is the National Rural Employment Programme and another is Operation Flood II which will be extended to cover 15 million people. The frame gives considerable emphasis to science and technology which, it is hoped, will permeate and subserve every sector of the national effort. Some of the proposals to induct scientists into a closer collaborative relationship with development agencies are contained in the Plan frame. In the Minimum Needs Programme, particularly innovative work in taking health to the people has been done by one of the invitees to this meeting. We look forward to gaining fresh insights into this vital area. The only way to deliver the benefits of many technologies and activities which have a minimum viable level, is to organise new forms of community and collective endeavour."

The Union Minister of Planning and Deputy Chairman of the Planning Commission said this while addressing recently a group of social scientistis, agricultural and rural development experts and scientists.

Development of Employment and Training Services

The State Labour Ministers have agreed to strengthen the infrastructure of employment and training in the meeting of the Standing Labour Committee which concluded in New Delhi recently.

The Labour Ministers identified a variety of sectoral programmes including the expansion of capacity in steel, nonferrous metals, capital goods and so on. They agreed to dovetail into their State Plan schemes for the extension of employment exchanges facilities to the rural areas and to the extension and diversification of training facilities to make training accessible to the rural unemployed and the self-employed. Suitable schemes of "earn while you learn" and "learn while you earn' will also be included in the State Plans.

Miltone The Popular Beverage

MILTONE, a milklike nutritious beverage is becoming more and more popular in India. Based on a process developed by the Central Food Technological Research Institute and promoted by the Food and Nutrition Board of the Union Food Department, the beverage consists of fresh milk and proteins isolated from groundnut flour. It is already being utilised in sponsored feeding programmes in several States.

The Food & Nutrition Board has finalised a scheme to set up Miltone production units in as many cities as possible during the current Five Year plan period. Two plants have already been established during the last plan period in Bangalore and Hyderabad. The third plant has just been set up at Kanpur. Two more units at Ranchi in Bihar and Calcutta in West Bengal are expected to be set up in near future.

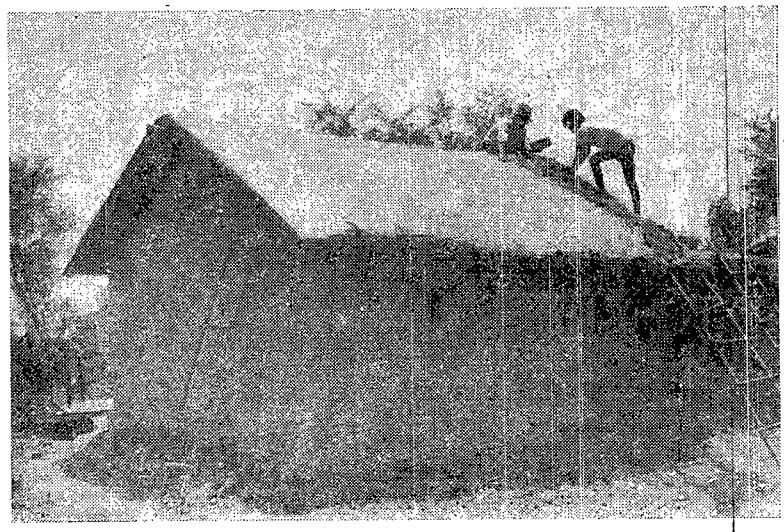
Govt. to Promote Growth of TUs

THE Union Government's labour policy lays accent on the growth of healthy and strong trade union movement. Organisations of workers and employers are proposed to be closely associated with the planning and evlauation of labour policy.

An outline of the policy was approved by the standing committee of labour ministers which held a two-day meeting in New Delhi recently. □

Thatches Catch No Fire

Dr. J. P. Jain, R. P. Kulshreshtha, N. K. Saxena and Ilam Singh*



A fire retardant and water-repellent thatched hutment.

TO minimise the risk of fire in villages, the Central Building Research Institute, Roorkee has developed a simple fire-retardant treatment for thatches. The Institute, has developed three methods for fire protection of thatch roofs. The first method, employing chemical impregnation followed by surface treatment was effective, but costly. A second method was developed based on a new technique of making rolls of reeds and fixing them on a bamboo frame for making thatch. Though this method was found satisfactory, it involves a non-conventional and more labour-consuming process due to which it could not be easily adopted in the field. The third method involves preparation and application of fire-retardant and water-repellent thatch using only the conventional technique of making thatch roofs.

*The thatched huts in the rural and slum areas are liable to be destroyed by fire as the **thatching materials are highly combustible. The Central Building Research Institute ,Roorkee has developed three methods for fire protection of thatched roofs. This article discusses one of the methods dealing with the preparation and application of fire—retardant and water-repellent thatch using only the conventional technique of making thatch roofs.***

Preparation of Thatch

A frame of bamboos of approximately 5 cm. diameter prepared by placing them across each other at about 30 cms. spacing. For a frame of half split bamboos of 5 cm. diameter approximately the spacing should be 15 cm. The frame is tied up with sutli or any other thin but strong string.

Reeds, rice paddy, coconut leaves or palmyrah leaves are evenly spread on the frame and tied up firmly with the help of a long needle in a conventional manner.

The thatch is mounted on mud walls or on wooden poles and tied with the structure at different points to hold it firmly.

About 1.8 Kg. of wheat straw or 5 cm. pieces of rice paddy is mixed with every one cft. of soil (from ponds) and kept wet for a week and kneaded daily. This ensures proper rotting of wheat straw or rice paddy and increases its workability.

*are with Central Building Research Institute,Roorkee.

A cut back (solution) is then prepared by mixing bitumen 80/100 grade and kerosene oil or diesel oil in the ratio 5 : 1.

For 1.8 Kg. cut back, 1.5 Kg. bitumen is melted and poured into a container having 300 ml. kerosene oil or diesel oil and stirred constantly till all the ingredients are mixed.

For every 1 cft of mud. 1.8 kg. cut back is added and mixed thoroughly by turning over the mud with spade and kneading it. This mud paste (mortar) is ready for plastering the thatch.

It is applied on the top and bottom surface of the thatch with hand or trovel. The mud plaster on top and bottom surface should be 20 mm. to 25 mm., and 10 mm. thick respectively. It is then allowed to dry.

If, on drying some cracks are developed in the mud plaster these may be sealed off with the same bitumenized mud mortar.

Preparation and Application of gobri

One part of cow dung (gobar) is mixed with one part of soil by volume with sufficient water and mixed thoroughly to make a thin paste. Two coats of this thin paste are applied on top surface of dried mud plastered thatch and allowed to dry. It is necessary to apply the same gobri on the bottom surface of the mud plastered dried thatch in order to fill the cracks which are developed during the drying of the mud plaster. After this, two coats of water-proofing solution are applied as given below.

Water-proofing Treatment

To prepare a water proofing solution one part of hot melted bitumen is mixed with two parts of kerosene oil or diesel oil and stirred. A coat of this solution is applied by brush on the top surface of a thatch. It is allowed to dry for four hours and then another coat of the same solution is applied.

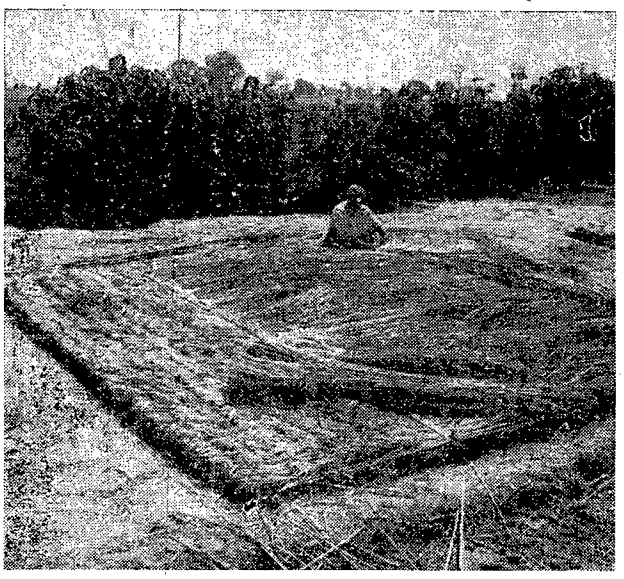
The thatch roof thus made, is fire-retardant and water-repellent. To give a good appearance to the top surface of the thatch roof, which becomes black due to bitumen, a coat of ordinary gobri or white wash may be applied. For whitewashing the roof top, a quick lime emulsion is prepared with quick lime (One Kg.) and animal glue (70 gm.) dissolved in (½ litre) boiled water. Quick lime is decanted or sieved and 14 per cent animal glue solution is added till brush consistency is achieved. If necessary more water can be added. Two coats of this lime wash emulsion are applied on the black surface of the roof.

Performance

Fire retardant and water-repellent thatches prepared as above were tested according to BS : 476-Part 3 in the External Fire Exposure Roof Test Apparatus. All the treated thatches (coconut, palmyrah, rice paddy, reeds etc.) are found to be in the Grade AA which implies that the thatches are safe at least for one hour of fire duration.

A model thatch of 9 sq. m. size was made and subjected to water spray test for a period of six months. It was found that no erosion and no leakage took place in the thatch.

The model thatches of all types i.e. palmyrah leaves, coconut leaves, rice paddy thatch, reeds thatch etc. were made fire-retardant and water-repellent. These thatches were subjected to natural weather test for the past three years. It has been observed that there is no leakage of water, no cracks are formed and the surface remains smooth. Thus the thatch treated as above becomes not only fire-retardant but also water-repellent and there is no effect of wind too on the treated surface.



A thatch roof in the making

Advantages

The above techniques mitigate the fire risk and enhance the life of thatch to about 6 to 8 years. No skilled labour is required for this treatment. The total cost of this type of thatches works out to be approx. Rs. 18 per square metre.

Houses For The Poor

G. Satya Rao*

THE Andhra Pradesh government had helped building of over three lakh houses in five thousand new colonies all over the state for the weaker sections of people in one year. This is part of a very ambitious programme launched by the State Government to build, in a period of three years, twelve lakh houses, on house sites given to the poor people.

The 'Directorate of Weaker Sections Housing Schemes' an exclusive organisation created to undertake this programme, exceeded the target of 2.5 lakh units and helped construction of 2.75 lakh houses in the First year. Encouraged by this the government had set a target of three and half lakh units this year.

It is proposed to complete the balance of six lakh houses next year, so that all the twelve lakh families who were earlier given sites are provided with their own houses. The State Government under the 'Sites and Services Programme' envisages the provision of complementary facilities like levelling of house sites, forming of approach roads, drains, drinking water, street lights, besides assisting in the very construction of the houses themselves. Under the programme, the beneficiary is given Rs. 200 as cash grant for purchase of building materials and Rs. 200 as labour component under food for work programme. The Forest Department helps them in getting bamboos and ballies at concessional rates. Though all this is in the nature of promotional incentives, most of the beneficiaries had pooled their meagre resources and improved their houses.

Under the rural permanent housing programme the subsidy remains the same at Rs. 400 whether the unit is estimated to cost two thousand or four thousand rupees. Half of it is secured as loan from the HUDCO or General Insurance Corporation. The beneficiary is meeting the balance of Rs. 600 or Rs. 1600 from his personal resources. Under this, 52,000 houses are at different stages of construction.

There is another category of houses coming up along the coastal belt in Nellore and Prakasam districts which were devastated by the severe cyclone last year. A number of voluntary organisations had come forward to participate in this programme. While the loan amount is provided by the HUDCO and Life Insurance Corporation on the same pattern of rural permanent housing programme, the balance is contributed from the Chief Minister's Relief Fund, by the voluntary Organisations and others. In addition, the UNICEF had provided Rs. 40 lakhs to implement community improvement programme to benefit the women and children in these new colonies, with over 12,000 houses.

Urban Housing Programme is taken up with the HUDCO assistance. This is generally dovetailed with environmental improvement programme for improving the urban slums. This new programme had covered almost all smaller towns also, and 54 housing schemes for a total of 20,000 houses at a total cost of about Rs. 15 crores are under implementation. It is a matter of great satisfaction that Andhra Pradesh secured assistance from the HUDCO for 54 schemes out of a total of 308 approved by the HUDCO throughout the country. □

*AIR Correspondent, Hyderabad.

Dr. Anil Sadgopat

Smt. Jaishreeben Raiji

Smt. Kamalabai Hospet

Jamnalal Bajaj Awards-1980

GANDHIJI held that, as a social being, it is man's supreme duty to use all his talents, not exclusively for personal aggrandizement but for the good of all. No doubt, Government has been doing its best to improve the lot of millions of poor Indians living in villages. But individuals and institutions have a major role to play in the creation of Ram Raj. Some of them who have dedicated their lives for the betterment of the downtrodden have been selected for the Jamnalal Bajaj Awards for 1980. Here is a short write up of the four winners of the awards.

Gandhiniketan Ashram

Gandhiniketan Ashram which was selected for an award of Rs. 1 lakh for outsanding contribution in the field of Constructive work was founded in April 1940 at Kallupatti in Madurai District by Shri G. Venkatachalapathi, who was greatly inspired by Gandhiji.

Upto the attainment of Independence in 1947, Gandhiniketan functioned more as a centre of political activities side by side with constructive work. During the Quit India movement most of the inmates of the Asram courted imprisonment.

After the attainment of Independence Gandhiniketan took up various items of constructive work in a systematic manner and enlarged the scope of its activities. A Khadi Mahavidyalaya was started at Gandhiniketan. More than 300 Block Development Officers, 100 Revenue Divisional Officers and 200 area organisers from all over the country were trained in Gandhian techniques for rural development at this institution. Ten rural textile centres have been established by Gandhiniketan, and it produces about Rs. 8 lakh worth of Khadi every year.

Gandhiniketan has also a number of other productive units like hand-made paper, pottery, NEO soap bee-keeping, palmgur, fibre flaving, tanning and leather goods manufacture. The various units employ about 100 skilled and unskilled workers and fetch an annual income of about Rs. 12 lakh.

For over 500 years, about 100 families of Pranmalal Kallars and Pertakattalai village in Sedepatti Block had been depending mainly on thieving for their livelihood and had been declared as a denotified tribe by the British. By repeated appeals, the Ashramites were able to persuade these people to give up their age-old traditional habit by offering them alternative sources of income through agriculture. Another village called Chatirapatti which was faction-ridden stands united today due to the efforts of the Ashram workers.

A basic school founded in 1946 is functioning as a Higher Secondary School with dairying and dress-making as vocations. On its rolls are 1200 students and 45 teachers. The primary school of the Ashram has 850 students and 25 teachers.

The Ashram has established a college of Gandhian Thought affiliated to Madurai University. Special courses of 42 days duration are also conducted for the graduates and post-graduates to initiate them into Gandhian techniques for the establishment of peace and harmony among the intelligentsia and the illiterate. Several Government servants also attend these courses. Gandhiniketan also arranges Pada Yatras for the propagation of Gandhian way of life.

Until recently, the services of the Harijans were not utilised by the other communities in the neighbouring villages. As a result of the persuasive efforts of the Ashram workers, Harijans are now employed by the other communities to assist them in their agricultural operations. The Ashram workers also undertake pada yatras periodically to persuade the villagers to give up drinking. Their efforts have been successful to a large extent.

In short, Gandhiniketan has not only established a model centre of constructive activities at the Kallupati Ashram for the benefit of the local population, but has carried the message of Gandhiji to the neighbouring areas through a large number of gram sevaks and

others whom it has trained and inspired to devote themselves to the service of the weaker sections of society.

Dr. Anil Sadgopal

Dr. Anil Sadgopal has been selected for an award of Rs. 1 lakh for pioneering research on the application of science and technology for rural uplift. He has a M.Sc. in Plant Physiology from the Indian Agriculture Research Institute, New Delhi, and Ph.D. in Bio-Chemistry from the California Institute of Technology, USA. Dr. Sadgopal is the Founder of Kishore Bharati, Hoshangabad, (M.P.) and the moving spirit behind this group. He devoted his life for the improvement of the living conditions of the people in the villages. He was able to inspire about a dozen other young scientists of high academic qualifications and diverse professional background to join hands with him in the venture.

Kishore Bharati is a voluntary organisation and was registered as a society in 1970. It started its working in 1972 after intensive preliminary field surveys in rural education, agriculture and cottage industries, with its headquarters at Malhanwada in Hoshangabad District.

An important and salutary principle adopted by Kishore Bharati from the outset is that all resources for its work, financial as well as human, shall be raised from within the country. No help of any kind from any foreign agencies or donors will be over sought or accepted.

The system adopted to impart science education to school children, which has come to be known as *Hoshangabad Vigyan,* was to give up the traditional method of learning by rote and placing emphasis on 'learning by discovery' by performing simple experiments to illustrate scientific phenomena. The Madhya Pradesh Government permited the experiment to be tried as a pilot scheme in 16 village middle schools in Honshangabad district, and it was launched in 1972 by Kishore Bharati in collaboration with the Friends Rural Centre, Rasulia.

The scheme was so novel in its approach and yet simple in its execution, that it attracted wide attention among scientists and educationists from several insitutions far and wide such as the All India Science Teachers Association, Delhi University, T.I.F.R. and IIT's besides several post-graduate colleges in Madhya Pradesh, who voluntarily started taking keen interest in it and actively participating in its programmes.

The experiment proved so successful during the seven years of its working that the Madhya Pradesh Government decided to adopt it in all the 250 middle schools in Hoshangabad district.

The drop-out rate in village middle schools is about 60 to 70 per cent. In order to help them as well as other youth and adults, Kishore Bharati has evolved a non-formal education programme. Built round such relevant activities as farming, irrigation, cattle-breeding and cottage industries, it aims at enabing the weaker sections of society, the landless labourers and the marginal farmers to acquire the skills and attitudes necessary to improve their own lot.

Side by side with these educational programmes, all these years Kishore Bharati has been carrying on research through experiments on the application of Science and Technology to rural development in all its aspects—agriculture, horticulture, irrigation, composting, animal husbandry and cottage industries. The aim is to make available to the farmers the results of the research to train them in making their agricultural operations more productive and profitable.

Dr. Anil Sadgopal is still the moving spirit and inspiration behind the Kishore Bharati group. His wife, Dr. Mira Sadgopal, M.B.B.S., has been one of his co-workers for the last 5 years.

The third cash award of Rs. 1 lakh, newly instituted in monery of Smt. Jankidevi Bajaj goes to Smt. Jaishreeben Raiji, and Smt. Kamalabai for outstanding contribution to women's uplift, children's welfare etc.

Smt. Jaishreeben Raiji

Smt. Jaishreeben Raiji was born in Surat on 26th October, 1895, entered public life and started her social and political activities at a very young age. In 1920 she became a founder-member of the Bhagini Samaj, Bombay and was its President for 11 years, from 1933-1944.

A monumental work to her credit has been the development of the Adivasi Welfare Centres, Udwada, (Valsad District) in Gujarat, over the last 35 years The Udwad Centre started in 1940 has developed into an education and cultural centre which caters to the needs of more than 600 girls providing them educational facilities right from pre-primary school to post-SSC teacher training.

An ardent follower of Mahatma Gandhi and Congress worker, Smt. Jaishreeben participated in the freedom struggle in 1930 during the Salt Satyagrha. She organised the Congress Mahila Vibhag, Bombay, and was its President for many years. She was also imprisoned during the Quite India Movement in 1942.

Smt. Jaishreeben had been a Member of Parliament from 1950-57, taking a leading part in passing important social legislation such as the Hindu Code Bill and the Suppression of Traffic in Women and Children. She sponsored the Dowry Restraint Bill and Indian Adoption of Children Bill.

She was the chairman of the Maharashtra State Women's Council and the United Women's Organisation and she has been an active member of the Vanita Ashram Executive Committee and has been a patron of All India Women's Conference. For many years she has been a member of the Indian council of Child Welfare, Maharashtra, and the Bombay Vigilance Association. She represented India as a delegate to the International Conference of Social Work in Toronto in 1954. She has also been connected with the Moral and Social Hygiene Association.

Today, at the age of 85, Smt. Jaishreeben's interest has not flagged and her energies are abundant. Her latest project has been in collaboration with the S.N.D.T. Women's University for the adoption of about twenty villages around Udwada where work is being carried on for an Integrated Rural Development Programme. Her mission is to make Udwada a centre of development for the under-privileged.

Kamlabai Hospet

Born in 1896. Kamalabai Hospet was married at the age of thirteen but two years later she lost her husband. Undaunted by the calamity and in order to make herself-reliant, she enrolled as a trainee in the Dufferin Hospital, Nagpur and qualified herself as a nurse and midwife. An incident that occured during her training left a deep scar on her soul and led to a new direction in her life.

The Sitabuldi Maternity Home came into being on 8th May, 1921 with only five beds to begin with. Today it has grown into a full full-fledged hospital for women and children with 150 beds, offering all modern facilities such as operation theatre, X-ray equipment and pathological laboratory. She established 20 branches in the rural and urban areas of the then CP and Berar Province where thousands of deliveries were conducted and many widows were employed as nurses and midwives.

The Constiution of the Sitabuldi Nursing Home was changed in 1954 and the Matru Seva Sangh, with broader objectives, was established to widen the scope of its activities. The golden jubilee of the Sangh was inaugurated by Smt. Indira Gandhi in October, 1972.

In 1961 the Matru Seva Sangh diversified into other fields of activity. A day school, called Nandanwan was started for mentally retarded children of the age group of 6 to 22 years.

In the same year she established the school for social work for women known as the Matru Seva Sangh Institute of Social work. Over the years, the school has created a large number of women workers with proper training in social work, who have got absorbed in various institutions carrying on social service.

The maternal instinct of Smt. Kamalabai Hospet has manifested itself in her rehabilitating and providing shelter for innumerable backward, forsaken and ailing women and retarded children of Vidarbha during the last 60 years. She has literally become "Mataji" to them all.

The zeal and unsparing efforts of Smt. Kamalabai who is now 84 years old, have transformed the Matru Seva Sangh into a movement for the social betterment of women—particularly the poor, the backward and the neglected. □

Nepal's Economic Development

(*Contd. from page* 9)

creates new economic categories and classes which make their demands on the government, the flow of foreign capital is distributed by the elite and hence has very little effect in reshaping economic relations," he says.

To sum up, there are no two countries in the world that are more close to each other than Nepal and India. The close ties between the two countries are reflected in all walks of life. Politically, the two countries have a close identify of views on maintaining democracy as the only viable political system. The structure of the political system in Nepal has been further improved under the dynamic leadership of His Majesty King Birendra. It goes to the credit of the King and the leadership of India that other countries' efforts to create a void in relationship proved futile. The five-year Indo-Nepal Treaty of Trade and Transit is significant for agreement on the use of overland route and for measures to prevent deflection of trade. The main worry for Nepal today is the serious trade deficit with India. In its total turnover of Rs. 2,600 million, the trade deficit is estimated at Rs. 1,600 million. Even after making strenuous efforts in trade diversification, Nepals' trade remains mainly with India. India has emerged as the biggest aid-giver. Mutual cooperation and respect for each other's independence remain the bulwark of Indo-Nepal friendship and development. □

Indian Shipping

Sriram Trikannad*

OVER six decades have passed since the very first Indian ship 'S. S. Loyalty', belonging to the Scindia Steam Navigation Co. sailed from Bombay for the United Kingdom on the 5th of April, 1919. At the dawn of Independence, Indian Shipping could command a gross tonnage of 1,92,000. Not much, of course, when compared to the large fleets owned by British or American shipping lines but it was a beginning and even this small fleet was built in the face of toughest of odds, and it was something to go by.

Today, Indian shipping has a gross registered tonnage of 5,624 million GRT, representing a growth by almost 30 times in the 33 years that have elapsed since independence. In terms of world tonnage, it still represents a mere two per cent of the global fleet. The Hindustan Shipping at Vishakhapatnam, which came into being during the war years as largely a ship repair workshop, was developed into a full-fledged shipyard and has built as many as 78 ships in the last three decades of its functioning as a shipbuilding unit, with a gross tonnage of 8.02 lakh dwt, covering a wide range of ocean-going vessels and specialised crafts. The newest to join our network of shipyards is the Cochin Shipyard which began to build ships in 1976 itself though the Shipyard is scheduled to be completed only in 1982. Besides there are two ship building yards at Mazagon in Bombay and Garden Reach in Calcutta, under the aegis of the Defence Ministry. Though these shipyards primarily build warships for the Navy, they also construct tugs, harbour vessels and the like for merchant navy. Cochin Shipyard has three bulk carriers of 75,000 tonnes dead-wt. capacity under construction and the first of the ships to emerge from this shipyard is a carrier ordered by the State-owned Shipping Corporation and is expected to be completed by the year end. Hindustan Shipyard, now in the 35th year of its operation, has, in the last one year delivered one 21,000 ton vessel, launched two vessels and laid the keel for two more. Its capacity is going to be raised from 2.65 pioneer class ships per annum to 3 pioneer class ships per annum. At present, the country produces Rs. 60 crore worth of ships annually.

Another significant event in Indian Shipping perhaps was the starting of the state-owned Shipping Corporation of India in 1961 with a fleet of 17 ships aggregating a little over 120,000 tons. Today the state-owned Corporation boasts of a fleet of 141 ships aggregating 28.33 lakh grt or roughly half the total strength of Indian shipping which stands at 56.24 lakh grt. In other words, the Shipping Corporation has been able to attain a premier position whereby it has more than the combined strength of all other Indian shipping companies put together. □

(*All India Radio*)

Agricultural Marketing in Bihar

L. P. Singh*

THE term "Agricultural Marketing" finds its origin in the Royal Commission on Agriculture Report (1928). The Commission in its Report drew attention to "the disabilities under which a grower was labouring and exploitation to which he was exposed". The Commission analysed the fundamental defects in the existing system of agricultural marketing in India and emphasised the need for undertaking exhaustive Marketing Surveys as a preliminary to further action. Accordingly, the Government of India and the State Governments set up organisations to look after the problems of agricultural marketing. Marketing Section in Bihar was constituted under the administrative control of the Department of Agriculture in 1935. The scheme was sanctioned initially for a period of 5 years and consisted of a skelton staff of one Senior Marketing Officer, three Junior Marketing Officers and Supporting office staff. The work was mostly confined to the survey and investigation on Marketing of important Agricultural commodities, Livestock and livestock products according to the programmes and synopsis drawn by the Agricultural Marketing Advisor to the Govt. of India. The Agricultural produce (Grading and Marketing) Act, was passed by central legislature in 1937. "The Act defined standards of quality, fixed grade designations to indicate quality and prescribed grade designation marks with regard to commodities includeed in the schedule to the Act." But only a few experimental grading centres could be opened in respect of ghee, oil, gur, tobacco. The quantity graded was insignificant considering the total production.

Plan Period Developments

The Planning Commission was quite alive to the problems of Agricultural Marketing and made several recommendations covering various aspects of agricultural marketing. But no significant progress could be made during the First Plan period, as efforts were directed towards rehabilitating the agricultural economy shattered due to war and partition.

In the Second Five Year Plan, emphasis was laid on the development of agricultural marketing with a view to organise and improve the marketing system. This is evident from the fact that out of a total outlay of Rs. 38 crores for development of agriculture under the scheme to be directly run by the Ministry of Food and Agriculture about Rs. 6 crores was provided for various marketing schemes including warehousing as compared to a provision of only Rs. 75 lakhs out of Rs. 31 crores during the First Plan. In addition, adequate provision was made in several state plans also. In Bihar, it was considered worthwhile that for achieving over all efficiency in marketing attack should be made on all fronts and the various aspects of marketing should be welded together to minimise and reduce the marketing cost. With this end in view, programmes were formulated for the establishment of regulated markets.

It was during the agriculturally oriented Third Plan that the drawbacks of the existing agricultural markets -shortage of space, poor lay-out, unfair practices, inadequacy of marketing facilities etc. came to surface. It was recognised that "Regulated market could perform valuable functions in the marketing process as the nerve-centres of commerce in agricultural produce. It was with a view to improving efficiency of these markets and eliminating the malpractices that regulation of markets was conceived and legislation for this purpose—Bihar Agricultural Produce markets Act, 1960 was enacted. In the First lot 10 wholesale markets were selected for regulation. Later on, the Act was enforced in 68 wholesale markets in the State and 60 market committees formed.

But unfortunately, these regulated markets could not go a long way in achieving their socio-economic objectives primarily due to the lack of properly developed market yards. The working of these regulated markets in the State brought to light the fact that it was very difficult to provide an efficient marketing system without providing a chain of modern and well laid-out market with all the necessary facilities provided therein.

Due to the lack of proper market yards the Market Committees were, on the one hand, experiencing difficulty in enforcing the regulatory provisions of the Act and on the other they were being deprived of their legitimate income by which they could take steps to provide facilities to the yards. If sales and purchase take place all over the locality, it is very difficult to check evasion of fees. In fact, none of the committees was getting even a reasonable portion of the fees payable to it.

Expeditious development of Market yards and provision of other ancillaries such as improved seeds, pesticides, sprayers pumpsets, etc. was, therefore, considered a 'sine qua non' for the proper functioning of Regulated Markets.

However, in view of the limited resources only 10 market yards were proposed to be constructed during the Fourth Plan period. A provision of Rs. 19 lakh was accordingly made by the Government of Bihar for being given on loan to the Market Committees. The Government of India also provided funds to the tune of Rs. 1 lakh per market in the areas where the scheme of Small Farmers Development Agency/Marginal Farmers Development Agency were in operation.

But the requirement of fund for the construction of market yards was so huge that the funds provided by the Govt. of Bihar as also by the Central Government proved to be extremely inadequate. In fact,

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"the problem was too large a dimension to yield under slow sporadic efforts". In view of the shortage of finance for agriculture as a whole, there was no possibility of finding resources of this magnitude for the construction of market yards.

I.D.A. Assistance to Bihar

The visit of the Reconnaisance Team of the World Bank in 1971 and the formation of Bihar State Agricultural Marketing Board at such a crucial juncture will always be remembered as a great fillip to the "Marketing Revolution" in this State. The team expressed the view that the World Bank would be prepared to consider the project as it was likely to confer substantial economic benefit to the poor cultivators of this predominantly agricultural state. It was, however, pointed out that the formation of an organisation like the State Agricultural Marketing Board would be a pre-requisite for the I.D.A. assistance. Accordingly, the Bihar State Agricultural Marketing Board was constituted by amending the Bihar Agricultural Marketing Act 1960. In 1972, the I.D.A. sanctioned a project for the development of 50 markets in Bihar at a total cost of Rs. 16.95 crore. Under this project, 50 selected important markets are to be provided with modern market yards along with marketing and storage facilities. The market yard proposed to be constructed would be a composite market which would not only provide facilities for the sale of produce like auction platform, trader shop, weigh bridge, warehouse, rest house and cattle-shed but also make available input such as seeds, fertilizers, pumps, sprayers and workshops for repair of agricultural implements. Consumer stores, space for Post-Office and Bank etc. would also be made available in the market yard. Construction of such market yards has already been complemented in 32 markets and is in progress in the remaining markets.

Central Assistance and S.F.D.A. Markets

In addition to these markets, popularly known as World Bank Markets, market yards at an estimated cost of Rs. 10 lakh each are to be constructed in 30 other markets with the financial assistance of the Central Government.

One hundred small market yards at an estimated cost of Rs. 1 lakh each are to be constructed in the areas of Small Farmers Development Agency and Marginal Farmers Development Agency. Funds for these markets were provided by the Central Government during the Fourth Plan period.

Control & Supervision

In the end of March 1979 there were 114 regulated Markets in the State. The regulation of unregulated markets is still in progress. The State Agricultural Marketing Board has been supposed to exercise general Control over the market committees. The body corporate of Marketing Board consists of a full-time Chairman Member-Secretary and Director of marketing deputed by the State Government. There are representaives of several other departments, including Agriculture, Finance, Land-Acquisition, Revenue, Town Planning and others.

Expanding Income

Quite evidently, the success of entire programme depends considerably upon the financial position of the market committees. Market fee @ 1 per cent forms the most important source of income of Market Committees. The ever-expanding income of market committees speaks of their glorious success. From mere 35 lakhs in 1972-73, it has touched the all time high figure of Rs. 6 crore 3 lakh during the financial year 1978-79.

Grading & Standardisation

As Grading and Standardisation forms a part and parcel of agricultural marketing the State Agricultural marketing Board is making elaborate arrangements for the grading of some agricultural commodities. Three Grading laboratories under the Board are working at Patna, Darbhanga and Ranchi. The laboratories are at present engaged in the grading of ghee, oil, spices etc. These laboratories will come as a great relief to the people as they will go a long way in checking adulteration. Apart from this, one Grading Inspector with all the grading equipments has been posted in each regulated market.

Market Intelligence

Information regarding the prices of different commodities in the important mandies and its dissemination plays an important role in agricultural marketing. The State Marketing Board has got a market intelligence section for collection of information regarding prices, stocks, arrival and other items related to agricultural marketing. So far 45 market intelligence centres have been established and another 41 centres are likely to be in operation very shortly.

"Jumbo Prawn"

JUMBO PRAWN which is found in the sweet and brackish waters of the Konkan region, has great economic value on account of its rapid rate of growth. They puts on a weight of 100 to 150 grams within a period of 8 to 10 months, fetching Rs. 2 per prawn.

To produce the prawn on a commercial scale, the Faculty of Fisheries of the Konkan Krishi Vidyapeeth, submitted a project to the ICAR which accepted the same. Accordingly Jumbo prawn seed has been produced on a large scale at the Marine Biological Research Station, Ratnagiri. The seed was released in the tank of 60×30 sq. ft. with two feet water column, at the Government Fish seed Farm, Hadpsar near Pune. Out of 1000 fingerlings of half inch length and 0.1 gram weight, the yield was 353 jumbo prawns of 40 kgs. in about 233 days. In other words, within a period of 233 days an yield of 2 ton per hectare was received.

Encouraged by the success, three fish farmers and two Government fish seed centres took up this activity during 1979-80. Thus, the seed production activity of the Marine Biological Research Station, Ratnagiri has spread to six different places namely Pune, Panvel Khopoli, Miraj and Kolhapur. The Faculty of Fisheries of the Konkan Krishi Vidyapeeth is rendering necessary technical guidance in the matter.

A Case Study

Vegetable Cultivation In Kankipadu Block

A. G. Prasad*

VEGETABLE cultivation has not made the desired progress because it is labour intensive and requires great care and constant attention throughout the crop period. Also the cultivation is restricted only to garden lands, that is lands with assured irrigation and drainage facilities and involves higher expenditure compared to other crops. Vegetable cultivation depends largely on the timely supply of quality seeds, fertilisers, pesticides and irrigation. Further it requires a well developed marketing system.

A survey was conducted by the Agro-Economic Research Centre, Andhra University, in the Kankipadu Block in Krishna District of Andhra Pradesh to study the problems faced by the small farmers as vegetable cultivators vis-a-vis large farmers. A total number of 90 vegetable cultivators selected from five villages were contacted.

In the villages nearer to the marketing centre, Vijayawada, both the small and large farmers reported cultivation of vegetables extensively. But with the increasing distance not only the area under vegetables decreased but also the proportion of small farmers among vegetable growers declined (Table 1).

TABLE I

Distance (Miles)	Percentage of area under vegetables	Percentage of vegetable growers among	
		Small Farmers	Large Farmers
2 . . .	27.42	47.3	40.1
3 . . .	86.16	71.7	74.5
4 . . .	6.14	17.1	71.9
8 . . .	5.41	11.1	47.4
9 . . .	2.81	3.1	14.1

In the villages farther from the marketing centre, the small farmers reported weak financial support; lack of transport and communication facilities as reasons for not taking up vegetable cultivation in large numbers as compared to the other class of farmers.

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Another constraint is the non-availability of garden land with good irrigation sources and better facilities for water management. In many a case the land is not owned by the small farmers.

Garden land formed 16 per cent of the total land owned by the small farmers as against 34 per cent in the case of large farmers. Apart from this, inequalities are also noticeable in the ownership of filter-points, electric motors and transport equipment. These inequalities in turn had its impact on the economics of vegetables cultivation as may be seen in Table 2.

TABLE 2

Profit or Loss on Vegetable Cultivation per Acre

Item	Small Farmers	Large Farmers
Total expenditure (Rs) .	1726	1475
Of which :		
(i) On irrigation (%)	13.73	14.10
(ii) On rent (%) . .	32.54	13.56
Gross value of the output (%)	1570	1783
Net income (Rs.) . .	—156	308
Net income excluding rent from expenditure (Rs)	406	508
Profit of the pure owners of garden land (Rs)	409	376

Expenditure on irrigation and rent on leased land together accounted for as much as 46 per cent of the total cost incurred by the small farmers on vegetable cultivation as against 28 per cent by the large farmers. Lack of irrigation sources and the exorbitant rates

A Cabbage Garden

charged for water purchased acted as a bottleneck for the small farmers to reap profits. As a consequence, vegetable cultivation by tenant farmers turned out to be one of low profitability. Due to lack of transport and the hardships attendant at the marketing centres (such as octroi duties, cesses, weighment charges, commission charges, etc.) about 40 to 50 per cent of the produce is sold locally to the middlemen at prices far lower than the ruling prices at the market. This percentage increased with the distance from the market.

Thus the above analysis brings out quite sharply various constraints in vegetable cultivation faced by the small farmers. The unique properties of land required for vegetable cultivation and the extremely limited ownership of such land by the small farmers are serious problems that need to be solved first. This is to be followed by extension, credit, transport and marketing facilities. Then only vegetable cultivation could be of substantial benefit to the small and marginal farmers. □

Future Outlook For Fertiliser Consumption

FERTILISER consumption is in a large measure a function of the price relationships between fertiliser price and the price that a farmer gets for his produce. In the last 4-5 years, this relationship had been constantly moving in favour of the farmer (through the reduction in fertiliser prices and an increase in output prices). This resulted in a continuing increase in fertiliser consumption which nearly doubled during the last 5 years. Even during a year like 1979-80, when the country faced a severe drought, fertiliser consumption registered an increase, even though a marginal one.

A major qualitative change has taken place in the situation with the very steep increase of about 40 per cent in the fertiliser prices with effect from June 8, 1980. A question that could be asked is whether the increase of this magnitude in one go was the right approach or should this have been done in stages, allowing the market to adjust itself gradually. There are pros and cons to both the approaches but now that the decision has been taken we have to move forward therefrom.

If we compare the physical return and the gross financial returns to the farmers from fertiliser use for different crops in the year 1971-72 and in 1980 prior to and after June 8, it will be seen that in most cases, the farmer is now worse off compared to the 1971-72 situation and considerably more so than was the case from June 1980. This means inevitably that this propensity to use fertilisers has come down sharply. Government is undoubtedly aware of this and the dangers inherent in it. Consequently, the Agricultural Prices Commission is reported to have worked out the proposed future procurement prices taking due cognisance of the price increase in fertilisers. Government's intention to compensate farmers for these price increase is, therefore well known although the next level of prices has not yet been announced. Whether or not this would fully compensate what the farmer thinks is the increased cost to him will take time to manifest itself.

Tentatively it would appear that the use of fertilisers for cash crops like sugarcane, tea, cotton, tobacco, etc., will not be adversely affected as the market prices mechanism will take care of the increased costs. Actual off take will be determined primarily by availability, though past experience has shown that areas sowing cash crops have magnetic effect over a vast area to attract supplies. What we have to watch carefully is the impact of the higher prices on the offtake of fertilisers for major cereal crops as any cut back in consumption of fertilisers could result in a drop in production of cereals with serious consequences. The view point expressed by some quarters that the higher price will not inhibit offtake of fertilisers for cereal crops could well be an optical-lusion.

Farmers need credit to buy fertilisers and the co-operative system is a major source for it. Experience has shown that a break down in the system immediately affects fertiilser offtake. With increased prices, the requirements have naturally gone up. It is, therefore, most unfortunate that at this crucial stage, the cooperative credit structure in many States is under terriffic strain (and in a few cases in a state of complete collapse) due to the proposed writing off of crores of rupees of outstanding dues, which would undoubtedly include nor infrequently wilful defaulters. Their impact on fertiliser offtake by farmers will need to be carefully monitored.

At this stage, mention could also be made of the recent Government decision to make fertilisers available to the farmer at the statutory selling prices, at the block level also irrespective of the distance from the railhead. This should to some extent mitigate the hardship of farmers in the remote areas arising from the increase in prices, though its overall quantitative impact in generating incremental offtake may not be large.

The other issue for concern is our ability to meet in full the requirements of the farmers commensurate with the demand arising from improved weather condition. The industry has passed through distressing times during the last few months when sizeable indigenous production has been lost due to a number of plants being shut for reasons beyond the control of the industry like shortage of power, coal, feedstock, etc. Fortunately this situation has begun to improve in the last few days. It is our earnest plea to the Government, which only has control over these items, that their full supply to the industry should be assured so that the commissioing of new plants can be expedited and the operation of existing capacity at the optimum level ensured. This will help in meeting the growing requairements of fertilisers during the current season and avoid unnecessary imports at high prices, which tend to go up every time we enter the international market as buyers. Even if the supplies were available at reasonable prices, there are reservations if infrastructural facilities like shiping, ports and railway systems, which are already strained, could cope with additional movement of imported material. Logistics of domestic production being much easier to organise, the need for optimising domestic production is imperative. □

(Fertiliser News).

Prospects of Economic Development in Tehri Garhwal

Rajiv K. Saxena*

THE Tehri-Garhwal district is one of the most backward districts of U.P. for which its physiographical conditions are primarily responsible. Agricultural and other productions are insufficient to meet the demands of the inhabitants and the employment opportunities are scanty. Only 19 per cent population is literate. The district lies almost entirely in the Himalayas comprising series of mountains and narrow valies. Three rivers named Bhagirathi, Bhilangana and Alakananda, are the main sources of water.

Out of the total population of the district about 82 per cent are in agriculture, 9 per cent in some regular service, 5 per cent in some business and the remaining 4 per cent are labourers. While agriculture dominates in the total population yet the agricultural production is low. People generally have small holdings.

In this economically backward district, new schemes are being introduced by the Government in diversified fields. To increase the agricultural production it is planned to introduce advanced methods of farming and create additional capacity for irrigation. Also to improve the rural economy, cooperatives will be introduced to enlarge the forest area. For rapid industrial development necessary facilities will be provided to the entreprenelures. Roads and means of transportation will be developed.

Natural Resources :

The water resources of the district are mainly three rivers. Besides there are many subsidiary small rivers and water falls. The Bhagirathi valley occupies the eastern part of tehsil Tehri, western part of tehsil Pratapnagar and south-western part of tehsil Deoprayag. Most of the large size villages of the district are situated in this valley. The Bhilangana river flows south-west ward through the central part of tehsil Pratapnagar. The Alaknanda valley occupies the southern part of the district. These rivers while flowing through the high mountains have many waterfalls. Low cost Dams can be constructed on these falls which can fulfil the local demand of electricity and irrigation.

Forest resources are plenty in the district. 2,69,540 Hectare forest is under administration. Economically important and other fuel purposed trees here are Pine, Devdar, Sal, Fir, Kharsu, Moru, Mukat. These are scattered in 81 per cent of the forests. The rest of the area is used for cattle grazing. It is estimated that under Soyam Forest there is 54,503 hectare land. In this area the forests are not in developed stage and there is strong need to develop these areas. The upper part of Bhilangna valley is covered with Banj and Kharsu forests and pastures. Chir forests occupy the middle and lower parts. In the Alaknanda valley the uplands are covered with 'Banj' and 'Chir' forests. The sal forests extend upto an altitude of 1,066 metres. The forests of Devdar occur in the northern part of the district along with blue pine and Cypress between altitudes of 1,520 and 2,150 metres. There are three principal Oaks, namely, 'Banj', 'Moru', and 'Kharsu' each occupying more or less a distinct altitude zone. The soil of the region is however of poor quality, shallow and stony.

Horticulture is one of the most important available alternatives which can be tapped for improving the living status of the people of this region.

Various minerals have been found in Tehri Garhwal in the past. Mainly, Calcium, Dolomite, Gypsum, Rock Phosphite and Copper are found in this region. Marble, Popestone, Magnesite and uranium's deposits are also expected to be found here. The district has a large variety of animals, birds, reptiles and Fishes. The district is noted for black bear found in the Tehri forest division at lower altitudes and for the brown and white Bears found at higher altitudes. Panthers abound almost throughout the district.

Utilisation of the Resources

Forests can be developed in small sancturies. Tourists spots can also be developed here to increase the income. Different occupations which can be developed with the available resources are : sheep|goat rearing, horticulture, fruit canning, dairying, poultry, bee keeping, wood industry, carpentry, coal brickets making and other occupations based on forest produce.

The important trees are Van, Moru, Chir, Kukkat Kharsu, Sal, Fur and Devdar. Chir is tapped for resin and its wood is used for building purposes. The dry leaves can be utilised for manuring and for packaging purposes. Devdar timber can be used for building houses, boats and railway sleepers. Building wood, lisa, firewood, bans, cane, medicinal plants etc. are obtained from the forests. The industries based on the forest resources have not been developed therefore, almost all these valuable properties are sent outside the district. Some important forest resources based

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industries which can be developed in the district are saw milling, timber seasoning, wood wool, plywood making match aplnts, Pine oil, packing cases, making coarse paper from pine wood. Other small scale units of the items like Stamps, scales, pencils,, holders, boards, hanger and toys can be started here. Mats and baskets can be prepared from Ringol.

Horticulture

It is one of the most important available alternatives which can be tapped for improving the living status of the inhabitants of this region. New gardens can be developed on the scientific basis and renovation of the old gardens should be encouraged for their maintenance loans and other financial assistance may be provided to the farmers. Effective arrangements for the disposal and marketing of the fruits are also necessary. Jams, jelleys and fruit juices can be prepared in small scale units. Apple, nashpati, aru, khubani, strawberry, cherry badam and akhrot are the main fruits which are planted in the region. So the improvements in the quality and to increase the number of these plants dense plantation schemes should be implemented. Along road sides some fruit belts and gardens are being prepared. The work was first started on 60 km. long Mussorie-Chamba road in the year 1964-65. At present the gardens cover ten thousand hectare in the district.

Minerals

Calcium is found in Dhaurapati, Barkotara and in some parts of Sang Valley. About 12 million tonnes of Calcium is expected to be found in Dhaurapatti. This can be used for manufacturing Cement. Dolomite which is found in northern area of Sang valley is suitable for Steel Industry. Magnesium's extraction is also expected from it. Gypsum is found near Rishikesh. Rock Phosphate is also industrially important. Units of Sodium Sillicate and Calcium Carbonate can also be installed here. Small units of soal, talcum power, varnish and paints can be started here. □

Industrialisation of Almora District

N. S. Rana*

ALMORA district forms part of the Kumaon division in U.P. Forests followed by mineral wealth are the sources which offer raw materials to the industries based on local resources.

At present the forest produce is sold to the highest bidder on commercial lines. The forest-based raw materials, which offer maximum possibilities of industrial development, should be conserved, classified and developed in such a way as to give to local beneficieries the fullest scope and opportunity to utilize them for their economic development. Crude forest produce in its original form need not be exported outside the district. Only processed or semi-processed forest produce which require further processing may be allowed to go outside.

Minerals

The mineral resources in the district have yet to be surveyed extensively. The Directorate of Geology and Mining in coordination with Geological Survey of India have undertaken some survey work, as a result of which Almora Magnesite Ltd., is being established at a cost of Rs. 3.82 crores. They intend to produce 100 tons of Dead Burnt magnesite per day. Another base for quarry of soapstone in Jakhera area has also been granted. But this is not enough. The Directorate of Geology and Mining must play a vital role in the development and utilization of mineral resources in the district.

Fruits

The perishable nature of fruits grown in the district makes the producers suffer huge loss as and when they are not able to transport the fresh fruits quickly to distant markets. It is necessary that the surplus fruit is pulped and tinned for preservation in order to extend its period of marketability. This calls for establishment of a large number of service centres during crop season for conservation processes. A few units can also be established for the purpose.

Raw Materials

The requirements of raw materials in case of demand based industries are comparatively small because of smaller size of units and their limited resources. In the existing set up of depots and the prevailing rules for allotment of raw materials, it is well-nigh impossible for small artisans to lift their requirements from distant depots. The proposal for establishment of a raw material depot at a central place in the district, has since been accepted. It is now for the UPSIC to make provision for storing the required raw materials and make the depot function efficiently.

Finance

The nationalized banks have not come in a satisfactory way to offer institutional finance to small industrial units. The State Bank of India which is the lead bank for this district has aroused great expectations. In order to inculcate the spirit of enterprise, it is essential that turnkey projects and investment participation in industrial ventures by various industrial corporations should be encouraged to provide industrial leadership. Joint sector projects transferable to local enterpreneurs after a certain period during which they run successfully must also be taken up.

Transport

In the absence of quick and alternative means of transport, any efforts at industrial growth are bound to be frustrated. The main industrial growth centres of this district are at a distance of 92 to 160 kilometres from the nearest railhead. A small area is served by head load carriers from motor roads. The higher head load wages add to the cost of production of each and every item manufactured by any unit situated in hills. As such these units cannot stand competition in the market. So long as the means of transport are not well developed, a subsidy on transport of raw materials as well as finished goods must be given.

These are some of the problems vitally affecting the industrial growth of this district. So long as proper alternatives to mitigate the above are not worked out and implemented the pace of industrial growth of the district is bound to remain imperceptible.

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BOOKS

Understanding Sugar Economy

Sugarcane : by C. N. Basu : Allied Publishers Ltd. New Delhi. 1979. PP 237 Price Rs. 48.

THE book gives students of agriculture and to the general reader a panoramic view of the basic information for understanding the sugar economy. It is thus valuable in the sense that apart from making some historical references to sugarcane in India from Indian lores of old, the author brings together a lot of material in one compact volume. For instance, he has given succinct yet comprehensive data on sugarcane cultivation, pests and diseases to sugarcane as also the economics of cane cultivation and allied matters. He has also successfully incorporated many new and modern ideas as genetics of sugarcane, mutation breeding in sugarcane, several types of manures to be used for healthy growth of sugarcane etc. Such methods if employed by cane growers would certainly add to their profitability apart from improving the sugar economy.

Practical hints to growers on how to achieve maximum yields by proper land preparation and adoption of modern cultural practices are also given (Chapter 7). In fact, all that one has to know about sugarcane has been included in this concise book in lucid and readable language. It is bound to be of immense help to growers as well as students of cane economics.

—E. P. Radhakrishnan

Vocational Training

Vocational Training in Residential Institutions : Part II by T. Prasad, National Institute of Public Cooperation and Child Development, New Delhi-110019, 1979, pp. 79.

VOCATIONAL training in residential institutions particularly for the destitute children is one of the important welfare measures. Besides the governmental efforts, voluntary organisations are playing an important role by providing institutional care to the children in running children homes.

The book will, no doubt, act as a guideline to the voluntary organisations interested in developing their institutions by providing essential services. Such services will certainly convert the children into self-supporting and self-reliant in their lives. The weaknesses pointed out in providing vocational training in the residential institutions are worth consideration and suggestive for effecting future policy. The appendices at the end are valuable as these provide comprehensive understanding of the various details connected with the vocational training.

The author deserves congratulations for his deeper insight into the problem and for providing details of the vocational training.

—B. N. Sahay

Corporate Income Tax

The Corporate Income Tax in India (1950-65) by V. G. Rao, Published by Concept Publishing Co., New Delhi. Pages 228, Price Rs. 60.

THE traditional view of the short term zero shifting of corporation income tax has been questioned in many studies, some concluding that increase in corporate tax is shifted forward resulting in higher prices or shifting backwards effecting reduction in wages and others holding that partly share holders and partly capital bear the increase in tax. The object of the present study is to remove the confusion on the subject. The traditional theory is based on the assumption that the companies recover the burden of extra taxes by conducting their business more efficiently. The assumption accords with the advantages of efficiency, equity and ease of collection associated with direct taxation.

The author has selected 22 medium and large scale industries during the period 55-56/65-66 and through empirical research has concluded that of the twenty-two industries while fourteen shift no significant amount of the tax burden seven indicate varying degrees of shifting and in the remaining one no conclusion is possible due to lack of data.

Although the increase in corporation tax reduced the industries' ability to finance their expansion through retained profits it did not cause their alleged continual erosion. Liberal depreciation allowances and the supply of institutional finance provided them with sufficient funds for expansion. The rate of gross dividend was maintained. The stagnation in capital formation during the relevant period could be due to other factors. Simplification of corporate taxation which is the highest in the world and further study of its impact on the growth of corporate sector in India has been suggested.

—B. H. Lalvani

Population

Population Geography of India by A. Bhattacharya. Shree Publishing House, New Delhi. Pages 69. Price Rs. 50.

THE book under review, specialised study of research and reference, provides an account about the population characteristics of India in the seventies. It attempts to study the characteristics on geographical concepts. Analyses the distribution and migration of population, behaviour of movement with a special emphasis on social characteristics of population which involve a vast field consisting of marital status, family and household character, level of literacy and education, religious composition, ethnic composition and language.

The author argues that the marital status of the Indian population is uneven for the males and females in all age groups. The social institution of India rests upon collective economy and rarely on individual economy. A divorced life for married couple means greater social insecurity for women under existing conditions. Level of literacy as a mark of social progress is poor in India. Data available for various types of migration are usually detailed by sex, ignoring the details of age. This sort of account

naturally interferes with a fuller analysis of the migration character. Yet the sex composition of migration relates certain social bearings in the country's population characteristics. India being a melting pot of various races and tribes presents multifacted ethnic composition, the study of which unfolds many secrets and modifies popular notions and ideas.

Appended with a bibliography and an index, it may prove a good addition to libraries for research and reference.

—S. K. Dhawan

New Agrarian Technology

The New Agrarian Technology and India by Biplab Dasgupta, The Macmillian Co. of India Ltd., 1980. PP 405 Price Rs. 60.

THIS book, which was first published by UNRISD in 1977 examines the social and economic implications of the introduction of High Yielding Varieties of foodgrains in India. The success of the HYVs during the early years of introduction and the stagnation of the period, 1971-75, are examined in detail. The future scope of the 'new agricultural strategy' are discussed on the basis of the limited available data. True that the introduction of HYVs in selected areas, increased productivity per unit of area averted any possible disaster which could have happened due to any major crop failure or famine conditions. But it does not seem to have revolutionalised agriculture. Agriculture is still highly dependent on the vagaries of weather and rainfall.

The relative advantages of high yielding wheat over high yielding rice leading to the success of the former, the vulnerability of the latter to pest attacks, the limited access of the maximum number of cultivators (small and marginal farmers) to the credit, input supply and extension have been extensively and intensively analysed. It is felt that the scale non-neutrality of the access to resources breaks the arguments of the scale neutrality of the new technology.

The increasing skewness of the distribution of assets, particularly farm assets like tube-wells and tractors, as a consequence of new technology, indicates that the rich farmer would get the future advantages of this superior technology. The author feels the special efforts of the Governments in the form of Small Farmers' Development Agency and such other programmes will have very little success unless village institutions are reformed. The future success of the new technology will heavily rely on the land reforms and other institutional reforms.

This outstanding contribution will be highly useful for researchers and for those seriously interested in the development of agriculture in India.

D. Tripathy

On The Road To Development

Development Aid by Shah M. Bijli, Shree Publishing House, Delhi, pp. 103, 1980, Rs. 50.

THE book under review is logically presented and written in most comprehensible manner reflecting the author's capability, splendid efforts and experience in the field of international economic relations. He has examined the role foreign assistance has played in narrowing the gap between two economic Worlds—one embarassingly rich and the other desparately poor.

The occidental economists generally believe that no developing country can obtain economic development without some foreign aid. But as the overall contribution of this kind of resource transfer to the level and character of economic development remains shrouded in controversy, the author also provides a lucid exposition of the weaknesses of the aid programmes. It presents the true picture of the plight of developing nations. The author has done an admirable job in giving a comprehensive picture of development aid in an excellent manner.

Since the concept of the foreign aid is based on European recovery programmes or Marshall Plan which was designed to help Europe recover from the after-effects of the Second World War, the book therefore gives a fine analysis of the process of development aid in historical perspective beginning from the Second World War. The book also gives detailed analysis of development aid including various forms of aid, regional development institutions dealing with Aid and other sources encompassing West Asian aid.

It also devotes some space to explore how much aid for example is needed to make a real difference in the rate of economic progress of developing countries. Besides assessing the performance it also exposes the problems of debt servicing and gives a fine discussion on the proposed new international economic order.

—Dr. Mohammad Iqbal

Women In Indian patriarchal Family

Indian Women and Patriarchy by Maria Mies; Concept Publishing Company, New Delhi, 1980; Price Rs. 75.

AMONG the several books published on India's women and their emancipation during the last decade, Maria Mies'Indian Women and Patriarchy' attracts attention for its quality of research and for some of the insights it offers. The research took nearly ten years; five of these years the author lived in India. One discovery she made was that there was much that the middle class women in the West and in India had in common as there was much that differentiated them. It would be a rather brite observation had the author not perceived that despite the seeming similarity of the roles of women within the family, in India and in the West, the family as such, has a different function for the economic system in the "capitalist centres" than for a "peripheral economy" which is both feudal and under many external shackles.

Another insight the author offers is that unlike the women's movement in the West which unambiguously challenges the male-dominance, women in India are seeing the challenge rather in economic and political issues, such as, price rise, scarcity of basic goods. The specific oppression of women per se such as rape, sexual humiliation of poor women by the land-owning classes, wife beating have not become the issues, nor has the dowry system become the basis of any movement.

Another important observation the author makes is that due to the economic crisis although more middle class women are taking up jobs, the traditional

patriarchal expectations regarding their family roles have not undergone much change, rather as she rightly points out, the conflicts between the patriarchal family system and the new expectations of women have sharpened.

However, so far, these conflicts have not generated a movement of protest either against the patriarchal system of the traditional institutions, nor has there been much of a social expression of them.

Significantly, the author makes a special point of the fact that the development processes themselves in India seem to have had an adverse effect on the socio-economic conditions of the poorest section of women, and on women in the rural areas.

While there is some truth in the conclusion that women, urban or rural, educated or uneducated are still tied down by the same "feudal" and patriarchal norms in India, I am not convinced that the awareness of this common problem will generate the solidarity between the rural and urban women for a bread based women's movement in India.

Dr. Mies currently on a teaching assignment at the institute of Social Studies at the Hague, has enriched the work by biographical case studies revealing conflicting situations that obtain in today's India.

Dr. Anima Bose

Illegal Concealed Tenancy

Concealed Tenancy & its implications for Equity and Growth by Kripa Shankar, published by Concept Publishing Company, New Delhi (1980); pp. 147; Price Rs. 42.

THE writer has doubtless explored nothing short of a terra incognita. Clandestine letting of landholdings on share-cropping basis or raising crops through hired labour do constitute a socio-economic syndrome which calls for early remedies, or else the problems facing the landless segment of rural society might grow in magnitude and dimension. Despite the enactment of the U.P. Zamindari Abolition and Land Reform Act of 1950 statutorily abolishing the zamindari system and bringing the cultivators into direct contact with the state, share-cropping continues with impunity because no information about lessor-and-lessee dealings can ever reach the authorities. The book under review studies this concealed phenomenon in its regional and inter-regional variations in the seven districts of Uttar Pradesh—Allahabad, Deoria, Bahraich, Partapgarh, Mirzapur, Ghazipur and Ballia. Such a study can never be a smooth-sailing affairs; the difficulties standing in the way, because of the social and economic power wielded by the landowners and the abject helpness of the sharecroppers and hired-labour, can better be imagined than prescribed. There is a vicious circle and it is hardly easy to break through it. Notwithstanding the difficulties involved, the writer has provided information with regard to clandestine leases, lease market input and output pattern, economic distribution, investment and savings, caste and tenancy attitudes of lessors and lessees, indebtedness and so on.

The measures suggested for the eradication of the socio-economic evils the illegal concealed tenancy has given birth to is almost stereotyped. He suggests, inter alia, that Gaon Sabhas be asked to submit information about lessees; lekhpals be instructed to maintain proper records with details of sharecroppings; the area of land-ceiling be lowered. Since corruption at almost every level is deep-rooted the Gaon Sabhas and Gaon Panchayats are yet to rise above local jealousies and superstitions; the performance of lekhpals has not been beyond suspicion either. The methodology devised and made use of included what the writer describes as 'a pseudo questionnaire' which would have been beter appended; there seems to be little reason why a questionnaire should ever remain sub rosa. The book published with the financial support of the Indian Council of Social Research should not have been priced so high.

—Dr. Tara Charan Rastogi

Pioneering Work in Resource Maximisation

Productivity, Production Function and Technological Change : By S. S. Mehta, Publishers : Concept Publishing Co., New Delhi, pp. 184, Price : Rs. 40.

THE motive force of industrial growth and its acceleration lies in the rate of growth of technological change and this has been one of the basic considerations of development planning in India. The ruling technology sets the condition for the optimum use of resources and the planners are now on their way out for discovering the optimum levels of resource utilisation in different industrial matrices. A scientific micro-level analysis always requires feeding of required data constistent in scope and definition, but unfortunately serious limitations in this regard exist in most of the developing countries.

The present study which is divided into eight chapters explains at suitable length the factor productivity indices which use the ratio analysis to measure the movement of technological progress or productivity. Taking this as the basic theme, the growth profile of all the 27 industries is meticulously examined and the results are presented through a cross sectional inter-industry analysis from 1953 to 1965. The inter-industry correlation study makes a serious attempt to measure the input utilisation and output movement while a mathematical application through various model studies has been established in tracing the production function approach for selected Indian industries. All this has made it a cogent and intensive study of input analysis in the Indian economy with the usual spotlight focussed on the role of technological progress. The masterly treatment of the basic ideas has made the study a pioneering work in the field of resource maximisation and use thereof.

Amar Nath Datta

Social Welfare Special Number on Kerala

Social Welfare, English monthly of the Central Social Welfare Board has published a Special Number (August—September 1980) on Kerala State. Priced Rupees Four, this profusely illustrated special number has packed in 140 pages illuminating articles depicting the various facets of legendary land of spices.

STEP BY STEP

Indian Fisheries Atlas Released

THE Indian Fisheries Atlas the margnum opus, the first of its kind in South-East Asia, brought out by the Marine Products Export Development Authority (MPEDA) was released by Shri Z. R. Ansari, the Union Minister of State for Commerce recently. The Minister congratulated the MPEDA on bringing out the atlas which gave a synoptic picture of the fishery resources of the country.

Dist. Employment Centre Envisaged

TO overcome the problem of educated unemployed in the country, the Union Government has envisaged an ambitious plan by setting up district employment centres, with a decentralised approach, according to the Union Planning Minister, Shri N. D. Tiwari.

Speaking to newsmen in Srinagar, he said under the plan 1,000 youths would be covered by each district centre. The scheme aimed at providing employment to five million youths in the country in one year.

India Secures Overseas Contracts

WITH the securing of two overseas contracts recently Engineering Construction Corporation Ltd. (ECC) a wholly owned subsidiary of Larsen & Toubro Ltd. is currently executing foreign construction contracts of the total value of Rs. 44 crores. The two contracts are for the construction of six buildings for Immigration Control and Custom Inspection in Iraq and technical services for mechanical work for an oil processing installation and facilities on Zirku island in the Arabian Gulf, 160 km from Abu Dhabi. It is also executing two earlier contracts—one of high-rise building construction in Sri Lanka (Rs. 7.2 crores) and the other of constructing a sports stadium in Iraq (Rs. 16.9 crores). □

T and V System Boosts Production

THANKS to the Training and Visit System of rural development, introduced in Gujarat, two years ago, the yield of bajra per acre rose to 954 Kg in 1978-79 from 598 Kg. in 1977-78. Also the production of maize registered a growth from 1.22 lakh tonnes to 2.44 lakh tonnes. Total foodgrains produced were 44.83 lakh tonnes against 38.73 lakh tonnes during the preceding year. Production of oil seeds rose from 19.55 lakh tonnes to 20.59 lakh tonnes and cotton from 19.42 lakh bales to 21.01 lakh bales.

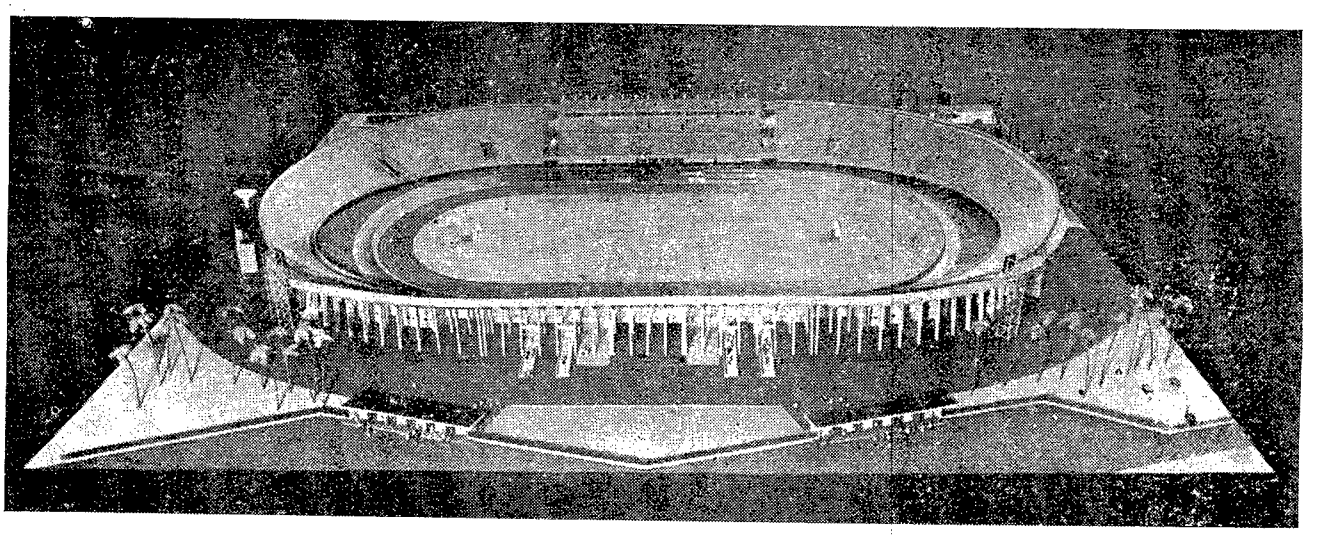
This is really a remarkable achievement in a state like Gujarat where farmers, holding not more than two acres, are poor, illiterate and the nature is also not bountiful.

The secret of the success lies in the T and V schemes which bring to the farmers' doors the timely technology according to his needs.

Coal Scientists Award For 1980

MINISTRY of Energy & Coal (Department of Coal) has instituted two Annual Awards for meritorious research in the fields of application oriented basic research or development research in Coal Science and Technology. The Awards carrying a cash prize of Rs. 5,000 and Rs. 3,000 respectively besides a Gold Medal will be of two categories, a "Senior Coal Scientist Award" open to all research, development and technological personnel connected with coal science and its utilisation and the other "Junior Scientist Award" restricted to similar personnel but below the age of 35 on first January of the year for which the Award is made.

Nominations are invited for Awards for the year 1980 on or before 30 November, 1980. Nominations should be sent in sealed cover marked to Director, Central Fuel Research Institute, P.O. FRI-828108, Distt. Dhanbad (Bihar).



Model of a Sports Stadium being built by an Indian firm in Iraq

New Bio-Diesel Generator

A BIO-GAS operated generator capable of producing electricity for lighting rural homes, driving irrigation pumps and operating farm machinery has been developed by India Institute of Technology, Delhi. The engine used in the generating set is a conventional diesel engine with some modifications enabling

its operation with bio-gas as main fuel. Nearly 85 to 90 per cent of its fuel requirement is met by bio-gas generated from farm and animal wastes. For the remaining ten to fifteen per cent, diesel is used in the conventional manner just to initiate and assist combustion of bio-gas.

IFCI's Performance

DURING its existence for 32 years, the Industrial Finance Corporation of India has extended financial assistance to the tune of Rs. 1047.24 crores for 1265 projects which has helped a total capital outlay in the industrial sector to the extent of Rs. 7744.27 crores. It has extended assistance to the development of backward and notified backward areas to the tune of Rs. 425.33 crores for 473 projects with a total outlay of Rs. 32.33 crores. For the current year, the IFCI has sanctioned a net financial assistance of of Rs. 149.81 crores.

Family Planning Programme Should Be Above Any Controversy—PM

Answering a question whether there was any alternative for economic viability for the nation in the face of failure to curb population growth rate to a manageable proportion, in an interview to Doordarshan telecast on September 24, 1980, Prime Minister, Shrimati Indira Gandhi said : "The real answer, of course, is development from both angles : first the development to provide what the people need, to open up areas, and secondly because development itself curbs families, I mean people who reach a particular standard are more conscious of their duty to the child. That is, they want something more for their children than they had ; and, therefore, they themselves think about smaller families. But ultimately, of course, size of the population has to be tackled at various levels not just through development, but through persuasion of people". She also said that in places like Punjab where there has been agricultural progress or industrial areas or even a place like Kerala which has educational progress, there the birth-rate has gone down.

She also said : "Well, obviously a subject like family planning should be above any controversy. But as you have noticed in the past years, there have been certain parties and groups which have done tremendous propaganda against this telling people of one religion that they will be exterminated and the others that their numbers were going down and they will be in difficulty, besides, of course, all the propaganda that was done about sterilisation, because we do not believe in coercion ; we think that there should be persuasion. But this must be done on a massive educational scale and unless everybody is in favour it will take a very long time and may defeat the whole purpose of it."

She also felt that we have to involve not just the department that is in charge of this, but the whole population, specially schools, the whole youth movement, women's organisations, other institutions which are concerned with any type of social welfare.

Asked about the status of women, she said "We are doing a great deal. We have to start at the bottom i.e. the girls ; and I think a great deal is being done now to help girls to continue with their education and not drop out as they have been doing."

Boost To Small Savings

OVER the years small savings have come to occupy an important place in the mobilisation of resources for development of the country. The net collections under the small savings schemes were about Rs. 225 crores during the First Five Year Plan period. Since then, the savings movement has made good progress. The Sixth Plan (1980—85) envisages a net collection of Rs. 6,337 crores. This year's budget estimate for small savings is Rs. 1100 crores. The number of regular savers in the country is more than 5.5 crores and the total outstanding deposits amount to over Rs. 7000 crores. Under the Pay Rolls Saving Schemes in offices and establishments, there are about 74,000 groups with a membership 80 lakhs. Similarly, there are Sanchayikas for educational institutions numbering about 43,000 with a total membership of 1,10,000 Saver Students.

Breakthrough In Remote Sensing

BY interpreting satellite pictures India has carried out the first-ever study of snowfall conditions in the Himalayas. The evaluation is based on the meterological data, received daily from TIROS-N and No AA-6 satellites launched from USA. In addition the LANDSAT satellite also provides the data every day. Based on these data, the NRSA has predicted that this year's snow-melt flow into Bhakra reservoir would be comparatively less than the previous years except that of 1977.

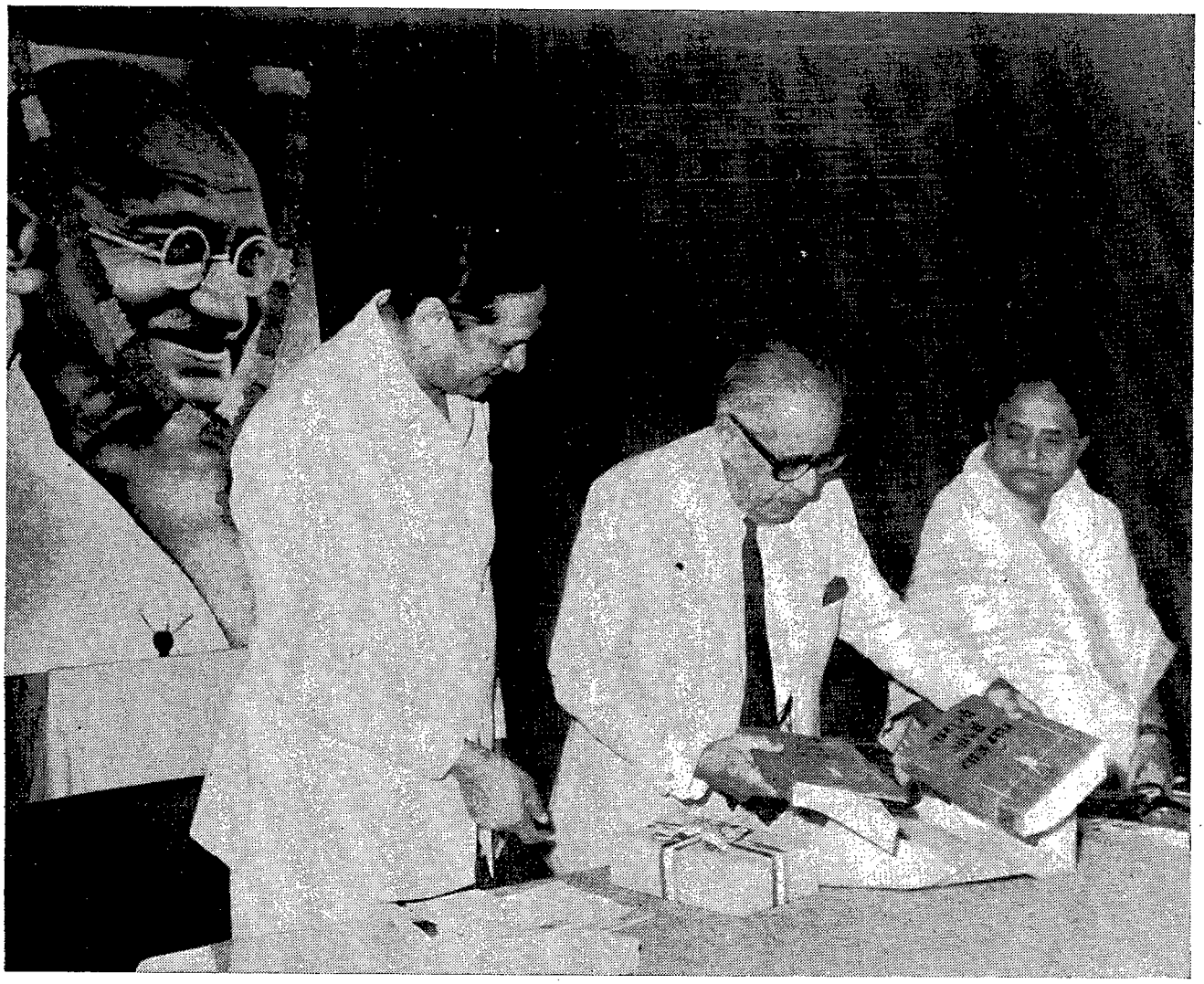
The National Remote Sensing Agency (NRSA), Secunderabad engaged in this task assessed snowfall conditions in the Himalayas during winter to predict the snow-melt runoff during summer. The study has been carried out for the river Sutlej on which the Bhakra reservoir is situated.

SIDO Training Programmes for Weaker Sections

SMALL Industries Development Organisation is training handicapped persons for self-employment. Its field agency—Small Industries Service Institute, Indore recently organised training courses for deaf and dumb persons in Batik printing, readymade garments, silvering of glass for mirrors, and manufacture of phenyl and wax candles. For these training programmes, a special course design had to be evolved to communicate to the participants the techniques of manufacturing processes involved.

During 1979-80, Small Industries Development Organisation imparted training to more than 4,000 persons belonging to the weaker sections of society including tribals, women, rural artisans and the educated unemployed. □

Presentation of Gandhism for Posterity



Vice President Shri M. Hidayatullah is seen releasing a set of four volumes of Collected Works of Mahatma Gandhi in English and Hindi at a functon held in New Delhi recently.

Looking on are the Minister for Information and Broadcasting, Shri Vasant Sathe and the ***Minister of State for Information and Broadcasting Smt. Ram Dulari Sinha.***

Vice-President Releases Gandhi Volumes

"IT is Gandhiji's healing touch which we need surely today to restore good sense and to extinguish the fires of violence that have sometimes been raging around us. Gandhiji held communal harmony as one of his most cherished desires for which he was prepared to make any sacrifice and ultimately laid down his own life", said Vice-President Shri M. Hidayatullah. He added : "The ideas and principles propounded by Gandhiji are of universal application. They are ageless and prophetic."

Shri Hidayatullah made this statement while releasing at New Delhi on October 1, Volumes 72 and 73 (Hindi) and 79 and 80 (English) of the "Collected Works of Mahatma Gandhi", published by the Publications Division of the Ministry of Information and Broadcasting. He also opened the complete exhibition of books of Publications Division and allied organisations. He pointed out that these Collected Works provided reading material for the students of India's freedom struggle and portray Gandhiji's attachment to Truth and dedication to the service of the poor and the lowly.

The 'Vice-President said that the 'colossal undertaking' of publication of these volumes not only discharges a debt to the architect of our freedom but preserves Gandhiji's ideas for the benefit of generations to come. Shri Hidayatullah gave a special advice to

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the students community that if they wanted to write good English they should study the writings of Mahatma Gandhi.

Perennial Significance

Shri Vasant Sathe, Minister of Information and Broadcasting who welcomed the Vice-President and other guests said : "Gandhiji's life and teaching have meaning not merely for his countrymen but for the whole mankind. Few men in history wrote and spoke with so much sincere concern on such a variety of subjects as the Mahatma did. His message is of prennial significance."

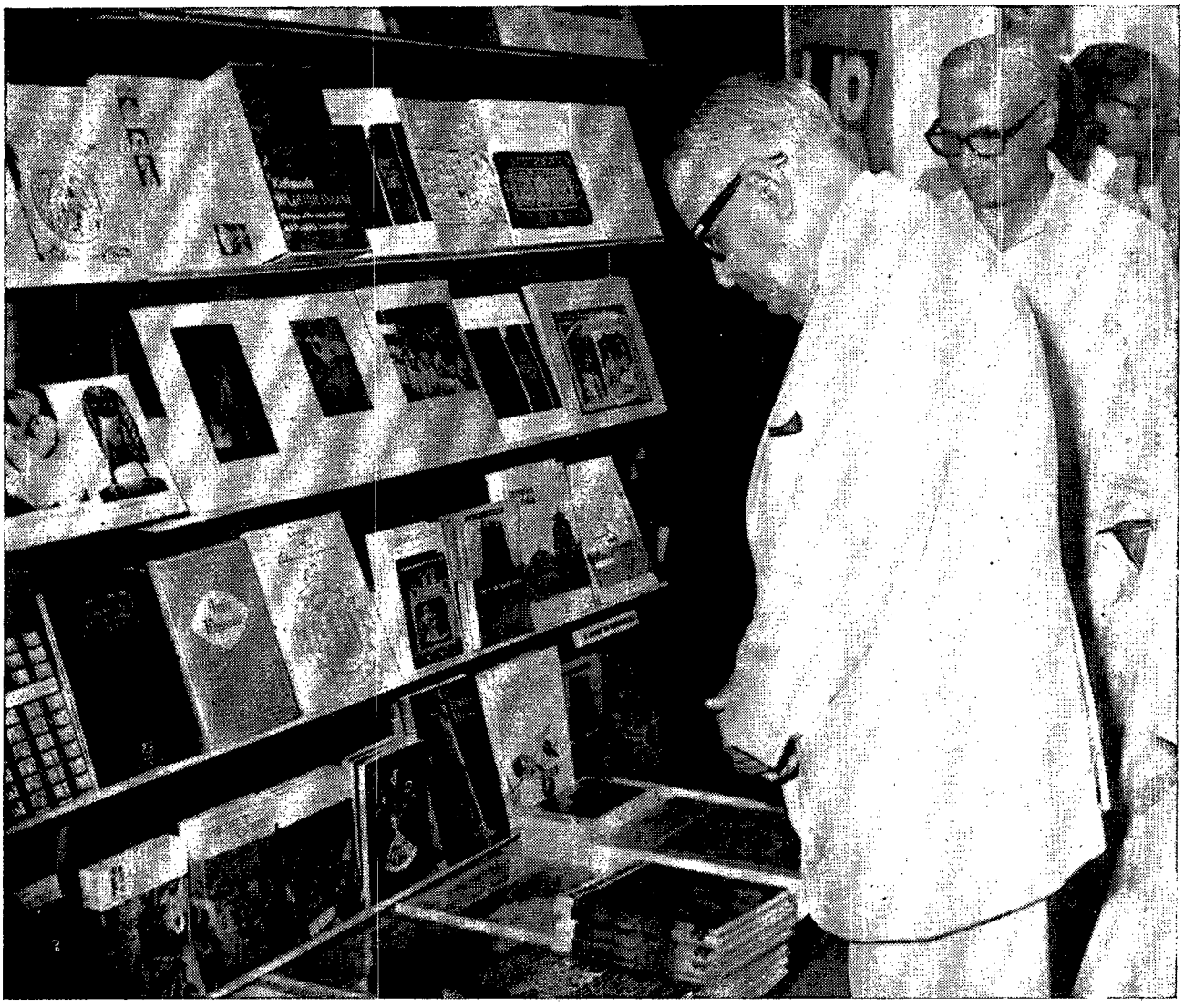
Shri Sathe mentioned that 80 out of the planned 90 volumes have already been published in English and 73 in Hindi and it was hoped that by the end of next year almost the entire work would be completed. He stated that over 1200 complete sets have been sold in English and Hindi, costing nearly Rs. 43 lakhs. Some 25 volumes have to be reprinted in English and two in Hindi and there was a programme to reprint 50 volumes. The Minister pointed out that the volumes were moderately and uniformly priced so that everyone interested in the subject could afford to buy them.

Penultimate Stage

Shri S. C. Bhatt, Director, Publications Division said that with the publication of these four volumes "the penultimate stage in the long and arduous journey which began more than two decades ago, has been reached." He also said that it was proposed to hold book exhibitions in other major cities and even in small towns.

Gigantic Work

Smt. Ram Dulari Sinha, Minister of State for information and Broadcasting said while proposing a vote of thanks that posterity will be grateful to us for the gigantic work of preserving the multi-faceted teachings of Mahatma Gandhi. She said that Gandhiji not only led the freedom struggle but gave us an entire system of social development and economic growth. She announced that in addition to the emporia of the Publications Division which are at present functioning in seven cities, six more will be started and mobile book shops would also be launched. □



Vice President Shri Hidayatullah, who opened a book exhibition organised by the Publications Division after releasing four Mahatma Gandhi Volumes, went round the various sections. Shri S. C. Bhatt, Director, Publications Division, is seen behind the Vice President.

Printed by the Manager, Govt. of India Press, Ring Road, New Delhi-110064 and