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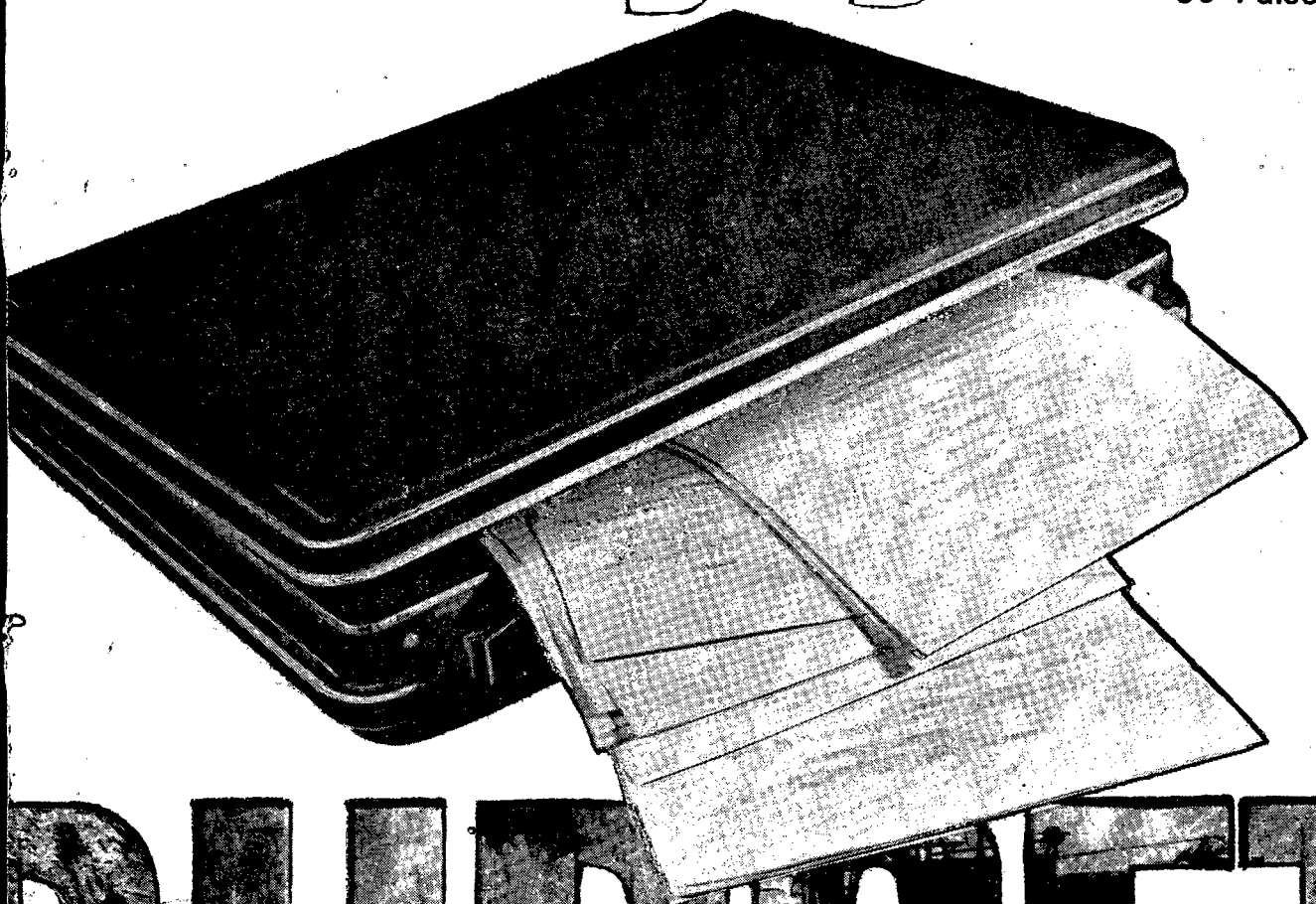

BUDGET

TOWARDS TECHNOLOGICAL CHANGE

EXPLORING FOREIGN MARKETS

YOJANA

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IN THIS ISSUE

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Uncommon Budget

WHATEVER MAY BE the reactions from a wide variety of quarters, there is almost near unanimity about the nature of the budget. It is a budget with a difference. The imprint of a new fiscal strategy is clearly visible. The urban elite may fret and fume but the budget proposals mark a significant turn to rural development. The increased duties on consumer goods like soap, detergents, tooth paste and toothbrushes do not adversely affect the goods produced by small units in the decentralised sector. The basic objective is not to penalise the users but to induce them to look for such articles as are produced by the small-scale manufacturers. It is also hoped that these manufacturers will increase their share of the market for these products taking advantage of duty exemption. The duty on vanaspati or processed edible oils, has infact been reduced because of the exemption from special excise duty. The burden is more on the life-style of those who seek prepared or preserved food, processed cheese, steel furniture, electrical appliances, safes and strong boxes. Levy of a new tax on the gross receipts of hotels is intended to pinch the affluent section indulging in lavish expenditure on account of accommodation and entertainment in luxury hotels.

A CLOSE LOOK at the budget shows that rural population occupy a pride of place at the hand of its framer. Generous incentive has been given to rural development besides a massive relief to agriculturists who have adopted modern methods of production. There is no let up in the improvement of the economic conditions of small and marginal farmer, agricultural labourers, rural artisans, scheduled castes and tribes. An outlay of Rs. 258 crore has been provided for accelerating the integrated rural development programme in 2000 blocks covered by any of the special programmes and in 300 other blocks not covered by any of the special programme so far. A provision of Rs. 10 crore has been made to implement the scheme for extending the subsidy on minor irrigation. Exemption of the Agricultural Refinance and development Corporation from income tax will enable the corporation to reduce by about 1 per cent the loans for minor irrigation and land development. Because of cheaper loans the farmers will be more interested in minor irrigation and land development. This is in line with a similar exemption already available to the industrial Bank of India.

IN CONSONANCE with the declared objective for promotion of distributive justice, relief has been provided to Consumer Co-operative Societies which supply goods to the consumers at reasonable prices. The budget raises the tax exemption profits in the case of such societies from the present level of Rs 20,000 to Rs 40,000. Life-saving drugs have been exempted from the levy of special duty. By a single stroke the budget has struck down a taxation levy, relic of the colonial past going back to 1943. Farmers in the tobacco growing areas will be completely exempted from excise duties on unmanufactured tobacco. Nearly a million of tobacco-growers, curers, small dealers and warehouse licensees will be beneficiaries. It cannot be said that the budget is anti-industry. Reduction of fertiliser price, substantial allocations for rural electrification and investment in items like cement, steel and power will eventually increase the supply of raw materials for industries like cotton-textiles, jute manufacture, oil mills, sugar and tobacco factories. Industry in our country is so much agro-based that investment in agriculture is a booster for industry.

IN certain quarters it has been suggested that the budget represents an alliance between the landlords and the industrialists which will affect adversely the interests of the other classes including the middle and the proletariat. In any case, the heavy doses of indirect taxes will be resented by the consumers and trade unions. There will be growing demands for wage increases both from the working and salaried classes in case an inflationary situation develops. A large uncovered gap of Rs. 1,355 crore is bound to cause anxiety despite assurances of price stability. □

UNION BUDGET 1979-80

Higher Fertiliser Subsidy

Rs. 67 crore more for Agricultural Development

Agricultural Credit at Lower Rate

Water Supply Scheme For More Villages

THE DEPUTY Prime Minister and Finance Minister Shri Charan Singh presented in Parliament on February 28, a Rs. 18,526 crore rural-biased Union Budget for 1979-80 which is marked by a deficit of Rs. 1975 crore despite a massive tax effort designed to bring in an additional revenue of Rs. 665 crore to the Central Exchequer.

The total receipts of the Central Government for 1979-80 will be Rs. 16,551 crore and total expenditure Rs. 18,526 crore.

Shri Charan Singh in his first budget, placed the overall deficit in the current year (1978-79) at Rs. 1,590 crore as against the original estimate of Rs. 1,071 crore. He added that this deficit did not include the additional burden of Rs. 555 crore that was cast on the Centre by way of loans to some States for clearing their past deficits. This being in the nature of a book adjustment was not expected to have any economic impact in the current year.

In the Budget for 1979-80 the defence expenditure is placed at Rs. 3,050 crore as against Rs. 2,845 crore in the current year. This represents an increase of Rs. 205 crore.

The Budget for the coming year has a provision of Rs. 12,511 crore for the Annual Plan of the Centre, States and Union Territories. The provision in the current year was Rs. 11,649 crore. This represents an increase of Rs. 862 crore or 7.4 per cent.

Inquiry into Government Expenditure

Shri Charan Singh announced the decision of the Government to appoint a Commission with suitable terms of reference to conduct a comprehensive inquiry into Government expenditure. The commission would, among other things, examine the impact of public expenditure on the promotion of growth and reduction of poverty and recommend ways and means of making public expenditure more effective in solving the problem of poverty.

The gross tax revenue at the existing rates of taxation in 1979-80 is estimated at Rs. 10,822 crore. This shows an increase of Rs. 658 crore over the Revised Estimates in the current year.

The States' share of Central taxes and duties, after taking into account the larger devolution consequent on the acceptance of the recommendations of the Seventh Finance Commission will be Rs. 3,235 crore. This is Rs. 1,278 crore more than in the current year.

Consequently, Shri Charan Singh said, the Centre's net tax revenue will be only Rs. 7,587 crore, which will be Rs. 620 crore less than the current year.

The Deputy Prime Minister expects an yield of Rs. 1,850 crore by way of market loans. The corresponding figure last year was Rs. 1,653 crore. Net external assistance has been put at Rs. 878 crore after meeting repayment and interest liabilities. By way of small savings, Shri Charan Singh hopes to get Rs. 650 crore. Loan repayments from States are placed at Rs. 554 crore. This shows a decline of Rs. 200 crore because of the debt rescheduling recommended by the Seventh Finance Commission.

Budget Estimates for 1979-80

Presenting the Budget Estimates for 1979-80, Shri Charan Singh said that while in terms of the recommendations of the Seventh Finance Commission, there has been a larger transfer of resources to States, it created serious problems for the Centre's finances in the short run. While transfer of such resources were desirable for strengthening our federal polity, the Centre's budget has to cope with these problems.

While assessing the provision of Rs. 12,511 crore as the total annual plan outlay of the Centre, States and Union Territories, an estimated sum of Rs. 835 crore has been transferred as committed expenditure from the plan side to the non-plan side in the Central and State Plans. If this was taken into account, the step-up in developmental effort in 1979-80 would be of a significant order.

New Development Strategy

Shri Charan Singh outlined Government's new development strategy as one of eradicating poverty and unemployment. This called for a radical restructuring of the priorities in our Plans. As such Agricultural and rural development, have been assigned the pride of place in Indian Planning.

Receipts Rs. 16,551 crore : Expenditure Rs. 18,526 crore

Government also recognises that the requisite degree of orientation of developmental plans can be achieved only over a period of time. However, Government proposes to accelerate the pace and thrust of programmes which has a material bearing on agricultural growth and promotion of employment.

Higher Allocation for Agriculture

The plan outlay on agriculture and rural development has been raised to Rs. 1,811 crore as against 1,754 crore in the current year. For accelerating the integrated development programme in 2,000 blocks, covered by any one of the special programmes and in 300 other blocks not covered so far by such programmes a provision of Rs. 258 crore, has been made in the coming year's budget. The focus would be on the improvement of the economic conditions of small and marginal farmers, agricultural labourers, rural artisans and Scheduled Castes and Scheduled Tribes.

Food for Work Programme

The Finance Minister has provided Rs. 50 crore for the Food for Work Programme for 1979-80. In the light of the encouraging results of the implementation of this programme in the current year, Shri Charan Singh had no doubt that he would have to increase this provision substantially. He, however, assured the members that this increase will have no inflationary impact. He also said that the Food for Work Programme was becoming a major instrument of rural development and employment promotion. As a result, the original provision of Rs. 30 crore made for this programme in the current year's budget was stepped up to Rs. 100 crore. This was expected to generate 40 crore man-day of work during the year.

Four Lakhs More Hectares Under Irrigation

The outlay on major, medium and minor irrigation projects including flood control for 1979-80 wil be Rs. 1,488 crore compared to Rs. 1,401 crore in the current year. The target for the creation of additional irrigation potential in 1979-80 has been fixed at 3.2 million hectares as against 2.8 million hectares in the current year.

The Finance Minister announced a new scheme of extending subsidy to minor irrigation works. He said that in order to increase the pace of development of minor irrigation, a scheme was being worked out for extending the subsidy on minor irrigation which was now being given only to small and marginal farmers. This scheme will, hereafter, cover farmers whose land-holding is between two and four hectares at reduced rates of subsidy. For this purpose, a provision of Rs. 10 crore has been made in the coming year's budget.

The plan provision for minor irrigation will be supplemented with resources available from the Agricultural Refinance and Development Corporation. The finance support from the Centre to this Corporation has been increased to Rs. 159 crore in 1979-80 as against Rs. 133 crore in the current year.

Another concession, the Finance Minister announced, was the exemption from Income-tax to the Agricultural Refinance and Development Corporation. This concession, together with the other measures that the Government was now contemplating, would enable the Agricultural Refinance and Development Corporation to reduce rate of interest at which it refinances loans for minor irrigation and land development by about one per cent. He said that the Reserve Bank of India would also take corresponding steps to ensure that the full benefit of this reduction of about one per cent is passed on to the ultimate borrower by the commercial banks. He, therefore, hoped that the farmers would find it cheaper and more attractive to invest in minor irrigation and land development.

Dairy Development

The Central Plan for 1979-80 contains a provision of Rs. 32 crore for the National Dairy Development Programme known as Operation Flood-II. This programme was expected to raise the nutritional standards of the

Relief At A Glance

The following are the tax concessions announced by Deputy Prime Minister and Finance Minister Charan Singh in the Lok Sabha.

Recent increase in excise duty on confectionary, cocoa powder, chocolates, and biscuits have been withdrawn. These will now bear a duty of only 10 per cent ad valorem.

The duty on lower priced toilet soap will be reduced from 15 per cent to 12.5 per cent ad valorem. On house-hold and laundry soap it will be brought down to 15 per cent ad valorem from the present 20 per cent. The duty on toothpaste will be reduced from 25 to 20 per cent ad valorem. The rate of duty on tooth brushes and locks reduced to eight per cent ad valorem.

Mr. Charan Singh said he proposed to introduce in due course suitable amendments to the Finance Bill to ensure that on and from the enactment of the Bill, these goods were brought back to item 68—central excise tariff, so as to attract duty at only eight per cent ad valorem.

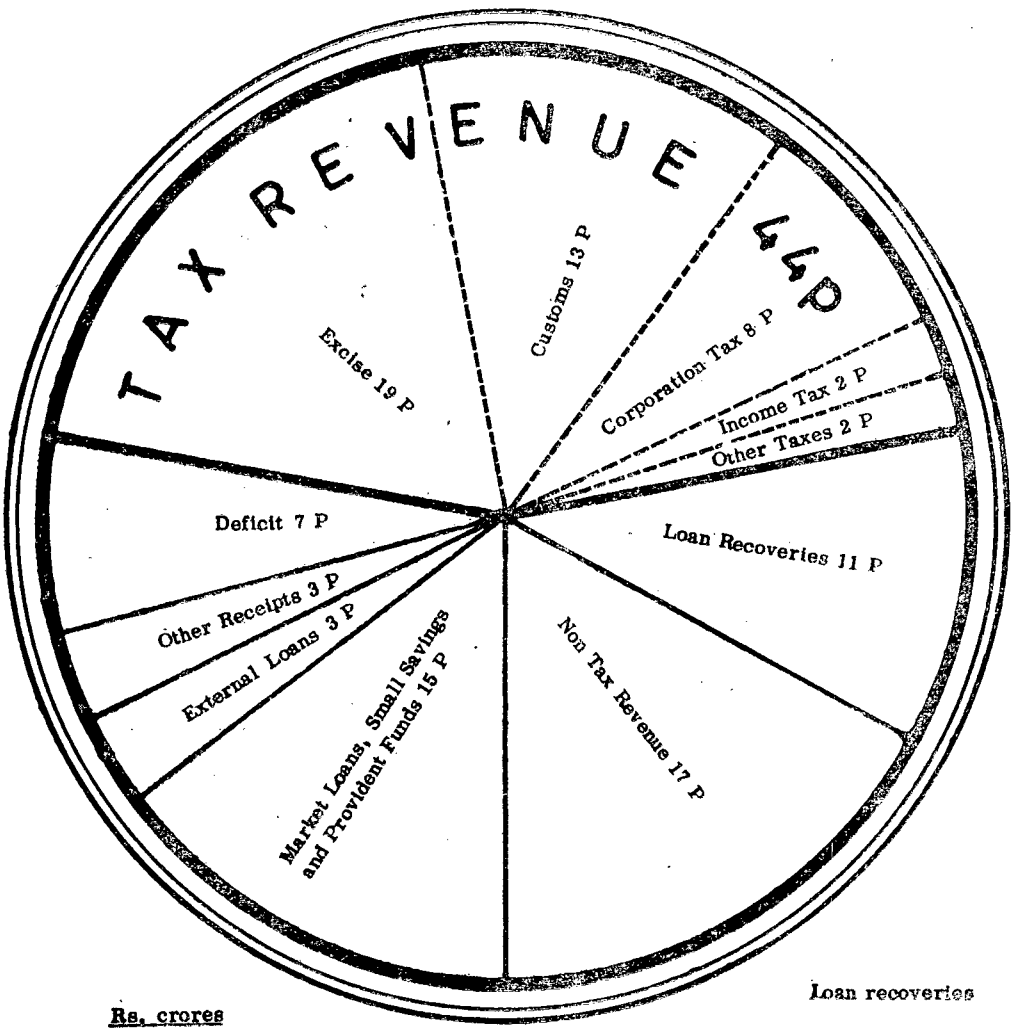
Matches : Excise duty on matches produced in the mechanised sector reduced from Rs. 9.20 to Rs. 7.20 per gross boxes of 50 each.

Footwear : Exemption from payment of excise duties raised from pairs costing Rs. 10 to Rs. 15.

Import duty on specified non-essential vegetable oils imported by the State Trading Corporation reduced from 12.5 per cent to five per cent ad valorem. Import by private parties who had made commitments prior to the canalisation of imports through STC will, however, continue to bear the levy of 12.5 per cent.

BUDGET 1979-80

THE RUPEE COMES FROM



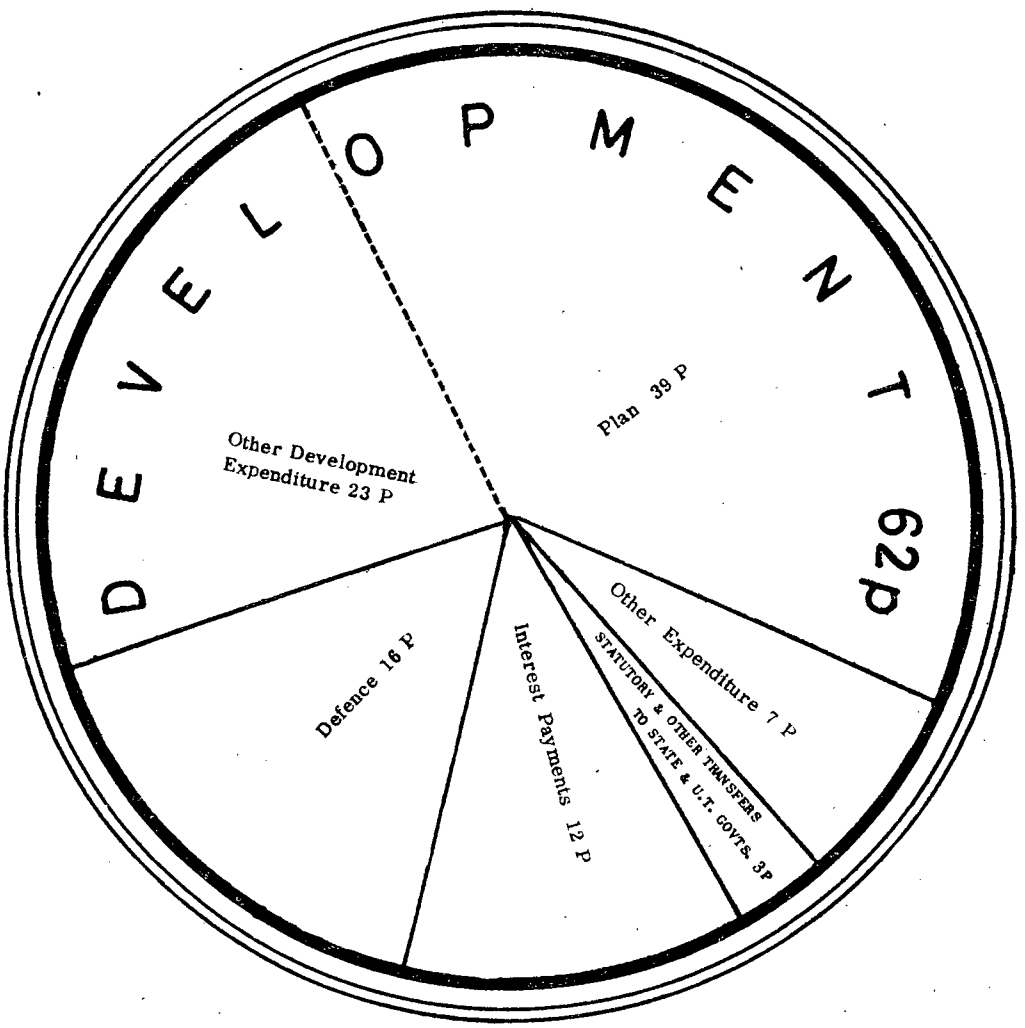
	Rs. crores
Excise	3417
Customs	2401
Corporation Tax	1530
Income Tax	436
Other Taxes	263
Tax Revenue	8047

	Rs. crores
Loan recoveries	2038
Non tax revenue	3162
Market loans, small savings & provident funds	2753
External loans	605
Other receipts	566
Deficit	1355
	10479

Tax revenue is exclusive of States' share of taxes and duties amounting to Rs. 3440 crores.

BUDGET 1979-80

THE RUPEE GOES TO



	Rs. crores	
Plan :		
Central Plan	4808) 7108	
State and U.T. Plans	2300)	
Other Developmental expenditure	4324	
Development	11432	

	Rs. crores
Defence	3050
Interest payments	2161
Statutory & other transfers to State & U.T. Governments	631
Other expenditure	1252
	7094

Transfers to States are exclusive of share of taxes and duties amounting to Rs. 3440 crores.

people, generate employment and augment incomes in rural areas. It is expected to provide gainful employment to ten million farming families.

Rural Electrification

The target for rural electrification in 1979-80 will be 25,000 villages as against 22,000 villages in the current year. The total outlay for the programme will be Rs. 285 crore as against Rs. 277 crore in the current year. An additional sum of Rs. 50 crore will be mobilised through commercial banks, Agricultural Refinance Corporation and Rural Electrification Corporation.

Rural Water Supply

The budget for 1979-80 contains Rs. 20 crore more for rural water supply. This will ensure the availability of drinking water in 27,000 more villages. The provision in the budget for 1979-80 is Rs. 80 crore as against Rs. 60 crore in the current year.

The outlay on the welfare programmes for Scheduled Castes and other backward classes in the coming Year will be Rs. 117 crore. The Central Ministries and State Governments have been asked to incorporate a special component in their plans for 1979-80 for these categories so that there is an adequate flow of benefits from various sectoral programmes.

The Tribal sub-plan for 1979-80 has a provision of Rs. 70 crore. This will also be supplemented by the flow of funds from the State Governments under different heads of development.

Village Industries

The Finance Minister announced that for the development of village industries the budget provision for the coming year has been increased by Rs. 53 crore. The provision under this head for 1979-80 is Rs. 193 crore as against Rs. 140 crore in the current year.

Shri Charan Singh said that in 1979-80, the handloom industry will produce 200 million metres more of cloth. Its target is 2,700 million metres as against 2,500 million metres in the current year. A provision of Rs. 28 crore has been made in the current year's budget to organise weavers' cooperative societies and to improve the functioning of the apex bodies and marketing organisations.

The outlay on telecommunication in the budget for the year 1979-80 will be Rs. 359 crore. It is proposed to open 5,000 new post offices and to provide 10,000 postal counters through mobile post offices.

More Funds for Agricultural Infrastructure

The Finance Minister said that the provision for power, coal, fertilizers and chemicals, minerals, petroleum, steel, roads and railways has been increased from Rs. 2,733 crore in the Central Plan for 1978-79 to Rs. 3,122 crore in 1979-80.

The allocation for the power sector has been stepped up substantially to Rs. 2,466 crore as against Rs. 2,217 crore in the current year. This includes a provision of Rs. 382 crore for projects in the Central sector. A major start in 1979-80 will be the Super Thermal Station at Farakka.

The additional generating capacity in 1979-80 will be 3,000 MW, as against 2,500 MW added in the current year.

The provision for inceased fertiliser production in 1979-80 will be Rs. 254 crore. This will cover expenditure on a number of on-going projects besides providing for a start on the two off-shore gas-based plants on the west coast and an additional gas-based unit in Assam. Fertiliser production in the public sector will go up to 20 lakh tonnes of nutrients.

The budget makes an outlay of Rs. 600 crore for the steel sector. This provision, Shri Charan Singh said, had to be viewed in the context of the rising demand for steel which at present was being met by the mini steel plants. The budget provision will enable the work on the expansion of Bokaro and Bhilai steel plants to be continued besides ensuring progress of the new steel plant at Salem.

The budget allocation for the coal sector has been increased by Rs. 79 crore. It is Rs. 346 crore for 1979-80 as against Rs. 267 crore in the current year.

The budget provides for an expenditure of Rs. 622 crore towards the oil sector.

The Central budget has a provision of Rs. 120 crore for national highways, strategic roads, roads in the border areas in the North and road of inter-State economic importance.

Slum Improvement

The Finance Minister announced Government's decision to step up expenditure on slum improvement. As against a total expenditure of Rs. 43 crore on slum-improvement in 1974—78, an outlay of Rs. 190 crore has been envisaged in 1978—83. He said that if the States undertook to mobilise additional resources for this purpose by taxing the affluent sections in the urban areas, the Central Government would be happy to Supplement their efforts.

Education

In tune with the realigned priorities in the educational sector, Government propose to increase the provision for adult education in the Central Plan for 1979-80 to nearly 20 per cent of the total outlay of Rs. 84 crore for education in the Central Plan.

Shri Charan Singh said that the Government proposed to make financial provision for training rural youth for self employment. The details of this scheme were being worked out.

Family Welfare

The Finance Minister reiterated that it should be their endeavour to put the newly introduced family welfare programme on a sound footing so that the national objective of reducing the birth rate to 30 per thousand by 1982-83 from the current level of 33 per thousand might be achieved. The Community Health Workers Scheme, started in October 1977 in 741 primary health centres will be extended to cover one third of the country in 1979-80 and the entire country by 1982-83.

A sum of Rs. 560 crore has been provided towards food subsidy in the coming year. This is Rs. 10 crore less than in the current year. The amount for the fertilizer subsidy is, however, stepped up to Rs. 448 crore as against Rs. 319 crore in the current year.

The debt service charges at Rs. 2,161 crore for 1979-80 will mark an increase of Rs. 304 crore. The increase is mainly on account of internal debt.

The budget for 1979-80 provides for Rs. 232 crore by way of statutory grants to States as against Rs. 514 crore in the current year. This provision is based on the recommendation of the Seventh Finance Commission. "The Commission has also recommended additional grants to certain States to cover their net interest liability and for upgradation of standards of administration. I have not, at this stage, included any provision for payment of grant-in-aid for these purposes and shall come before the House with request for supplementary funds after the action programmes for schemes of upgradation are drawn up and finalised by the State Governments concerned and the net in-

BUDGET 1979-80 AT A GLANCE

(Rupees in Crore)

	1978-79 Budget	1978-79 Revised	1979-80 Budget
Revenue			
Receipts	10761	11020	10749 (+)460*
Expenditure	10899	11148	11396
	(—)138	(—)128	(—)647 (+)460*
Capital			
Receipts	6585	6554	5802 (+)160*
Expenditure	7518	8571	7130
Total	(—)933	(—)2017	(—)1328 (+)160*
Receipts	17346	17574	16551 (+)620*
Clearance of States' overdrafts as on March, 31, 1978		555	
Expenditure	18417	19719	18526
Overall Deficit	1071	1590	1975 (—)620
Uncovered Deficit			1355

*Effect of Budget proposals.

terest liability assessed as recommended by the Commission", Shri Charan Singh said.

Revised Estimates for 1978-79

Outlining the Revised Budget Estimates for the current year, Shri Charan Singh pointed out that a number of post-budget developments had cast additional burden on the Centre.

The Central Government decided to extend special loans to the States to the tune of Rs. 555 crore to enable them to wipe off their overdrafts from the Reserve Bank of India. This will help them to start with a clean slate and also avoid overdraft in the future.

Additional Expenditure

The provision to assist States to extend gratutious relief to people affected by natural calamities had to be increased to Rs. 40 crore as against the original provision of only Rs. 10 crore. Higher procurement prices entailed an additional expenditure of Rs. 42 crore. Similarly the expenditure on food subsidy during the current year was expected to be Rs. 114 crore more than the Budget Estimates of Rs. 453 crore. Expenditure on export assistance also went up by Rs. 130 crore as against the budget provision of Rs. 251 crore. The loss on sugar exports also went up to Rs. 23 crore as against the original estimate of Rs. 10 crore.

The financial difficulties experienced by a number of public sector units necessitated higher non-plan assistance than what was anticipated at the budget stage; The Coal India will be requiring an assistance of Rs. 173 crore as against the provision of Rs. 90 crore; Fertiliser Corporation of India and National Textile Corporation also stood in need of substantial additional assistance. As a result, non-plan loans to public sector undertakings will be Rs. 159 crore more than the Budget Estimate of Rs. 250 crore.

Higher Small Savings

The small savings fetched to the Central exchequer Rs. 165 crore more than the budget provision of Rs. 300 crore.

Central Plan Expenditure

The Deputy Prime Minister said that the overall budget support for Central Plan expenditure was expected to be less by Rs. 201 crore as compared to the provision of Rs. 4,520 crore more for it. This was because the progress of expenditure was somewhat uneven during the year. Major shortfalls are anticipated in petroleum, fertiliser and tele-communication projects. Oil and Natural Gas Commission would require Rs. 63 crore less because of rechasing and postponement of certain works of its off-shore programmes. Oil Industry Development Board would also require Rs. 50 crore less. Fertiliser projects would also be requiring Rs. 36 crore less as compared to the original provision of Rs. 236 crore. This shortfall related mianly to Trombay-V and Cochin Phase-II Unit and the new gas-based fertiliser plant to be set up in Maharashtra. The outlay on tele-communication projects will also be similarly lower by Rs. 46 crore mainly due to the delay in the receipt of equipment and stores.

The shortfall in regard to the implementation of agricultural schemes will be of the order of Rs. 25 crore. Some schemes under this head had not picked up the necessary tempo; some others had been delayed in the formulation of detailed schemes and inadequate

infrastructure. He assured the House that these problems were being tackeled. Certain schemes had, however, made good progress, he added.

The Finance Minister disclosed that the budget provision for assistance to State and Union Territory plans required to be stepped up by Rs. 325 crore mainly because some States affected by floods this year had suffered serious erosion of resources and were, thus, not able to finance their approved plan outlays without additional assistance. The Rural Electrification Corporation also required higher assistance to the extent of Rs. 39 crore. Therefore, the Revised Estimates for assistance to State and Union Territory plans, would be Rs. 3,112 crore as against Rs. 2,761 crore.

Apart from the increased recepits of Rs. 140 crore from the small savings, the deposits of non-Government Provident Funds were also estimated to be Rs. 75 crore more than the Budget Estimates of Rs. 225 crore. Gold sales had fetched Rs. 86 crore when no credit was taken for this at the budget stage. Recoveries of temporary credits extended in the earlier years also showed improvement of Rs. 75 crore.

Variations in Revenue Receipts

Explaining the variations in the revenue receipts, the Finance Minister said that the receipts from Corporation and Income-tax were estimated to be about Rs. 102 crore less than the Budget Estimates of Rs. 2,577 crore. While Union Excise and Customs Duties taken together show an improvement of Rs. 145 crore, Union Excise Duties would actually be fetching Rs. 105 crore less than the Budget Esitmates of Rs. 5,299 crore. The receipts under Customs Duty are however expected to yield Rs. 250 crore more than the Budget Estimates of Rs. 1,860 crore mainly because of liberalised import policies and consequent larger imports.

Shri Charan Singh disclosed that utilisation of external aid had also slowed down mainly because of the shift from programme to project assistance by multilateral aid-giving agencies and also allocation of greater proportion of bilateral assistance from some countries to specific projects. The result was, the progress on these projects was slow and the gross aid receipts were expected to be Rs. 447 crore less than the Budget Estimates. He, however, assured the House that steps were being taken to accelerate the pace of disbursements.

Price Stability—A world Record

In his opening remarks while presenting the Budget, Shri Charan Singh claimed that the price stability which the Government had achieved during the last two years was a world record. The wholesale price index on February 10, 1979 was only 0.9 per cent above the level a year earlier and 0.4 per cent above the level two years earlier. "Such a record of price stability in a period in which national income growth was about 11 per cent would be difficult to find elsewhere in the world". This had been brought about by well-conceived supply and demand management policies. The Finance Minister underscored, in this connection, the role of increased industrial and agricultural production and liberalised import policy in vital areas. □

Industrial Output Up

INDUSTRIAL output in November 1978 was 10 per cent higher than that in November 1977. The average growth rate of industrial production between April and November 1978 had been 8.3 per cent.

Coal production increased by 12.2 per cent over the previous month and by 5.6 per cent over November 1977. Electricity generation was higher by 13.4 per cent, while steel production from the integrated steel plants rose by about two per cent. The mini-steel plants continued to do well with an increased production of 11 per cent over October 1978 and an increase of 55 per cent over November, 1977.

The output of aluminium, vanaspati, cotton textiles, jute manufactures, fertilisers, commercial vehicles, cars, jeeps and tractors showed a substantial improvement.

Over the corresponding month of 1977 aluminium production increased by 14.7 per cent in November 1978, sugar production by 29 per cent, vanaspati by 30.2 per cent, cotton yarn by 17 per cent, cotton cloth by 12.2 per cent, jute manufactures by 11 per cent, nitrogenous fertilisers by 12.5 per cent, phosphatic fertilisers by 25 per cent, commercial vehicles by 18.5 per cent, cars by 32.7 per cent, jeeps by 146.2 per cent, motor cycles by 56.1 per cent, diesel engines by 41.4 per cent and tractors by 38.3 per cent.

A significant feature in the textile industry has been the record production of cotton yarn which increased by about nine per cent in the first nine months of the current financial year. Yarn output had never before shown an increase of this order in the past.

The production of the 16 public sector undertakings under the Department of Heavy Industry, during the first eight months of 1978-79, was worth Rs. 596.75 crore. This was 33 per cent higher than the production valued at Rs. 449.44 crore in the same period last year. The Engineering projects India Limited had a turnover of Rs. 62.44 crore an increase of Rs. 21.51 crore over the turnover of Rs. 40.93 crore last year.

The total production from the Bharat Heavy Electricals Limited plants, during the same time was worth Rs. 346.91 crore, 27 per cent higher than the production of Rs. 273.83 crore in the same period last year.

The turnover of Hindustan Machine Tools Limited was Rs. 98.38 crore. This is 84 per cent higher than the production of Rs. 53.59 crore last year.

Production at Heavy Engineering Corporation Limited was worth Rs. 39.38 crore which is Rs. 20.68 crore more than the production valued at Rs. 18.68 crore during the eight months last year.

Other undertakings which recorded higher production during the first eight months of 1978-79 are Richardson and Cruddas Limited (72 per cent), Scooters India Limited (27 per cent), Braithwaites & Company (16 per cent), Tungbhadra Steel Products Limited (8 per cent), Mining & Allied Machinery Corporation Limited (23 per cent), Bharat Pumps and Compressors Limited (103 per cent) and Arthur Butler (33 per cent). □

A Socio-Economic Approach to Technological Change and Development

V. K. R.. V. Rao
Economist

ECOLOGICAL IMBALANCE, pollution, over-exploitation of natural resources leading to depletion, and a threat to the stability and safety of current high levels of living are all factors that are coming to the fore in the discussions that are now taking place many in the developed Western world. And as these are directly ascribed to development, a number of persons in the developing world are beginning to look askance at the whole thesis of industrial development, even as their doubts receive positive encouragement from Western commentators who are asking their poorer brethern in the L.D.C.'s to learn from Western experience and refrain from going in for technological change and accelerated rates of economic growth. To add to the picture is the evidence available from centres of modern and accelerated growth in the developing countries themselves, which seem to lend credence to the theory of the Midas touch of development. Where do we go from here, and what should be our policy in India in respect of economic growth, technological development, and ecological balance and environmental harmony?

India has a per capita national income much below current levels in the developed world and a population of several hundred millions, below the poverty-line, variously estimated as between 40 and 60 per cent of its total population. I do not see therefore, how we can give up either economic growth or technological development. At the same time, knowing the experience of the developed world and the hazards and deterioration in the quality of life that has accompanied their accelerated growth and technological advance in recent decades, we certainly cannot afford to go in for a blind imitation of the Western path of development. It is possible to resolve this dilemma and adopt a policy and a programme that will secure for the Indian people the advantages of development without the ills that have accompanied it in the West.

Development without ill-effects

To begin with, it is necessary to unscramble the development egg of the Western world to trace cause and effect of the ills that now effect them. The development that has taken place in these countries is not merely the result of the application of modern technology or the continued expansion but intensification of this technology for bringing about a yet higher growth in the daily output of goods and services that constitutes their level of living. There is no doubt that a good deal of modern technology does contain the potential for disturbing the ecological balance or environment harmony. However, there can be no doubt either than the indiscriminating way in which the technology has been applied and the dominance that has been given to the profit motive and the so-called economic principle of maximisation of output with minimisation of cost has landed the developed world with monster urban settlements, slums and rabit-warrens miscalled mass housing, crimes and suicides, psychological tensions and frustrations, pollution and ecological imbalance, environmental hazards, and a real threat to the future stability and security of its economic well-being. Obviously therefore, the ills that have accompanied development are traceable not merely to the new technology but also to :

(1) leaving the development of technology and its utilisation to private enterprise and its profit motive.

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(2) going in for ideology of unlimited wants and expansion of material output.

(3) having a system of cost accounting that took into account only private costs and private benefits and ignored the relevance of social costs and social benefits.

(4) excessive attention to economies of scale and size of individual plants, and to external economies of concentration of economic activity in large urban centres ; and

(5) giving pride of place to materiality of output and conveniences rather than quality of life in setting the pace for economic activity.

These five factors, while they constituted an essential component of the development process in Western countries, do not constitute either an essential or an inevitable part of the process. It is not necessary therefore to throw out the baby along with the bath water and give up the use of science and technology for development because of the adverse consequences of its mis-application elsewhere. Nor can we afford to give up development, if we want to liquidate mass poverty in our country and give all our people the basic minima of civilised existence.

Our villages have their special problems of environmental pollution with absence of public hygiene, drinking water problems not only of safety but even of availability, non-ventilated and non-sun-receiving housing, and division into dual societies.

Moreover, environmental and ecological problems are not the result merely of modern and sophisticated technology in industry or of accelerated economic development in material terms. Problems of pollution, ecological imbalance, disease, slums and depletion of natural resources are also found in the working of a less developed economy like that of India. Shifting cultivation in tribal areas, short-sighted destruction of woods and trees without any renewal by afforestation thereby leading to soil erosion and undesirable changes in temperature and rainfall, wanton destruction of wildlife, overgrazing and over-cultivation without regard for resulting deterioration in the soil, inadequate attention to drainage in irrigation with consequent rise in salinity and loss of millions of acres of land from active cultivation, growth of slums and bad living conditions are all found present in our country. In addition, our villages have their special problems of environmental pollution with absence of public hygiene, drinking water problems not only of safety but even of availability, non-ventilated and non-sun-receiving housing, and division into dual societies—the socially more backward of which is pushed into the outskirts of the village. All this has resulted in the abundant presence of an unhealthy relation between man and environment in India without even the excuse of its being a result of accelerated industrial and technological development of the type prevalent in the developed countries of the West. Ecological and environmental disturbances in developing countries like India are thus not merely a result of modern industrial development but also, and perhaps primarily so, due to the absence of an articulated socio-economic approach not only in the technology of development but also in the indifference shown to archaic and medieval conditions of living in the areas not subject to industrial development such as the bulk of our villages. The factors that are responsible for the presence of ecological and environmental disturbances in India need to be dealt with. In fact, doing so is itself a part of directing of the process of development. It is necessary therefore to subject our developmental technology as also our rural living conditions to a socio-economic approach directed towards a betterment of the quality of life and ecological harmony.

I believe that what we have to do as a nation is essentially to make up our minds consciously and deliberately about the goal of our developmental activity. Obviously, economic growth and a substantial increase in the output of mass consumption goods and services together with the capital equipment and technology necessary to maintain it and also increase it over time is a must for resolving the problem of mass poverty and enabling our population to have a basic but decent standard of living for all its individual numbers. One way of achieving this is to go in for a highly mechanised and capital intensive production system with large units and economies of scale achievable through concentration of economic activity. This is precisely what the Western developed world has done, and we know with what results on ecological balance, environmental pollution, and psychological ill-bearing. Obviously we cannot desire such a kind of development in spite of its materialist temptations. Nor can be afford it in terms of the capital investment it would require or the metropolitan and large-city based urbanisation it would promote or the gigantic exodus it will stimulate from rural areas or the large and continuing problems of unemployment would create in both rural and urban areas. Our goal of economic development has to follow a path that would take account not only of the environmental and ecological experience of development in the Western world but also of the special features of the Indian scene. Important among these are our large labour

Economic growth and a substantial increase in the output of mass consumption goods and services together with the capital equipment and technology necessary to maintain it and for resolving the problem of mass poverty and enabling our population to hare a decent standard of living for all l

supply, our inadequate capital resources, and the large number of small producing units we have not only in the primary but also in the secondary and teritiary sectors in our economy. Nor can we neglect to take into account our expressed national desire not only to eliminate poverty but also reduce inequalities, prevent concentration of economic power, disperse economic activity, and prevent the continuance or expansion of a dual society in India either in terms of technology and conditions of work or elite and proletarian classes or backward rural and advanced urban areas. Thus the goal and the path have to be dovetailed and harmonised in the development process in India. Our development therefore cannot be a carbon copy of development elsewhere. Development in India has to be specifically Indian and has to fit our economic aims, our cultural heritage, our social attitudes, and our spiritual background. It must place an overriding emphasis

on the quality of life, material betterment being only a means to that and rather than an end in itself. This in broad terms is the socio-economic approach that we should adopt in determining the pace, content, and volume of developmental activity in India. If we do so, we would have gone a long way also in solving the problem of environmental pollution and ecological imbalance that seem to be inseparable accompaniment of industrial and economic development of the Western or Japanese model.

In evolving the details of the socio-economic approach to development indicated above, it is necessary to bear in mind the following facts of the Indian situation :

(1) Our natural resources in terms of climate, water, light, heat, land, minerals, flora and fauna are more than adequate for meeting the requirements of our existing population and some increase therein, but not so if the population continues to grow at its current rate. Even for securing more decent living standards for our existing population, let alone an increase in its number even at a much lower rate than at present, and giving it stability and continuity in the future, we need conservation, economy, and recycling in the use of our natural resources.

(2) Our human resources are abundant in quantity but lack quality in terms of physical fitness, education, training in skills, industrial discipline, social attitudes, scientific temperament, cooperative working, self-sustaining organisation, and enterprise in general. Erosion in the values that make for the quality of life is also a growing and expanding phenomenon amongst the population. Human resources development is therefore a key factor in the Indian developmental process, if it is to result not only in a rise in material standards but also an improvement in the quality of life and avoidance of environmental pollution and ecological imbalance associated with Western development.

(3) Our capital resources are inadequate for bringing about a rise in material amenities comparable to those found in the countries that rank high in economic development such as the United States of America and Canada, Western Europe and Japan or to counter the costs of pollution, depletion and psychological frustration that appears to be an inevitable accompaniment of such development. Indian development therefore has to set its sights to a different horizon that, while securing a decent minima of the material requirements of a civilised existence, does not go in for affluence, extravagance, wasteful consumption, vulgarity of demonstration, and indifference to the social costs of private satisfaction. This also means a deliberate restraint on the way of life of the elite and affluent in Indian society, and a levelling up of the material content in the life of the masses and a levelling down in that of the classes, somewhat on the lines of the still-born economic philosophy underlying the draft Fifth Five Year Plan.

There can be no doubt that spatial, demographic and resource conditions of the Indian economy combined with the need for avoiding the environmental, ecological and social ills associated with an urbanising development require the Indian developmental process to be rural-sited, dispersal and decentralised, using science and technology that will promote such an orientation of developmental activity.

(4) Though our urban population is only about 20 per cent and agriculture is still the dominant partner in the economy in terms of both employment and income, there has been enough industrialisation and blind copying of the Western technology of development to bring us face to face with the problems of pollution, ecological imbalance, large cities with their slums and overcrowding, and deterioration in the quality of life and non-adherence to basic values. Policy-makers are becoming increasingly conscious of the need for restraining urban growth especially of cities and big towns, and creating conditions that will preserve the rural profile of our spatial demography by promoting decentralisation of economic activities, going in for smaller units of production, and deliberately *sitting* them into rural areas and backward regions. In other words, we are trying to break away from the tradition that development means urbanisation ; but I am not sure if we are either aware or accept the implications of a non urbanising developmental process in terms of scientific research technology, volume and product-mix of material output, disincentives of demonstration effect originating from within and without, weakening of centralised power with decentralisation and dispersal of economic activity, and modern defence requirements. But there can be no doubt that spatial, demographic and resource conditions of the Indian economy combined with the need for avoiding the environmental, ecological and social ills associated with an urbanising development require the Indian developmental process to be rural-sited, dispersal and decentralised, using science and technology that will promote such an orientation of developmental activity.

(5) As a nation, we are now committed to the use of science and technology, for economic development. We have not really started using it for betterment of the quality of life in a big way. There is no doubt that the use of science and technology is a must for not only India's economic development but also for an all-round improvement in the quality of life of its masses in both the rural and urban areas of the country. But, even at the risk of repetition, it must be added that the use of science and technology must be in the context of Indian

conditions and suited to Indian requirements. We have the largest number of research institutes of any developing country in the world, and they are well staffed and well equipped. We have also four prestigeous higher institutes of technology and an institute of science and technology of international standard, and a number of regional institutes of engineering, a large number of engineering colleges, and a larger number of polytechnics and industrial training institutes. We have also more than a hundred universities many

Technological Development must be suited to Indian requirements

of which have a strongly developed research activities in science. And we have been talking of a great deal of intermediate technology and the applications of science and technology for rural development, especially the small units in agricultural, secondary and service occupations in rural areas. And yet so far nothing very tangible has been achieved. Copy-book applications of Western technology and concentration on the problems of the larger producing units still seems to dominate the Indian scene. There must be a fundamental and revolutionary change in the thinking and application of science and technology in the direction of low capital intensity, small producer units, decentralisation and dispersal, and use of local manpower with the minimum appropriate training. Local energy resources and local materials should be tapped to the maximum possible extent with avoidance of pollution, minimisation of the use of materials subject to depletion and maximum resort to recycling of used materials. With such a massive change in the direction of science and technology, Indian development will cease to be an imitation of Western development and acquire a quality of Indianness which will at the same time be free from the blemishes that have accompanied development elsewhere.

(6) We must also turn to the vast rural settlements in our country and do something effective to rid them of the pollution and ecological imbalance they are now subject to, even though they have no factories with smoking chimneys or life killing or polluting effluents or even the fumes from the exhausts of modern transport vehicles. Their pollution is due to the absence of personal and more particularly public hygiene, inadequate supply of water for washing purposes and even for drinking, ill-ventilated and badly lighted housing, residential mixing up of men and cattle, and use of smoky fuel without outlet. Pollution of tanks and wells is caused not only by unhygiene usage but also by the polluted material carried to them by bad or nil drainage. Recycling is non-existent with the use of cowdung as manure, and failure to make use of bio-gas possibilities. Ecological imbalance is created by the cutting down of village forests without any attempt at replacement, and cultivable land-lost due to silting and seepage of both irrigation and other water due to absence of drainage. The idyllic character ascribed to villages is a long-standing and much publicised myth at least as far as most of our villages are concerned and accounts in good part for the one-way traffic that prevails between them and our urban areas. The tragedy behind this situation as well as hope that exists for correcting it both stem from the fact that much of this pollution and ecological disturbance in rural areas is man-made and has nothing to do with either industrial development or misuse of technology. It was Mahatma Gandhi, an ardent champion of India's villages but no blind admirer of their way of life, who set about the task of rural reconstruction by

Pollution and ecological disturbance in rural areas is man-made

devising concrete steps for ridding them of pollution, ecological damage, and wasteful use of resources without any attempt at recycling. Unfortunately, Gandhiji's political activity was more conspicuous, his political strength and influence not only more exciting and inspiring but also more useful to all those who were to gain in power, wealth and prestige by the independence that he alone could bring to this country; and his economic ideas and rural betterment programmes were treated as things to be honoured when he was alive and paid lip-service and some token action after he was dead. With independence and planned economic development came gigantic irrigation works, Chemico-genetic technology geared to those who had or could get resources, and even minor irrigation works that favoured the haves and paid scant attention to the have-nots. Agricultural production increased, a newly rich and powerful Kulak class emerged in the rural areas, and affluence with its vulgar and conspicuous consumption ceased to be the monopoly of the urban areas. But the poor in the villages—and they constituted the large majority—remained where they were with but little change in their condition. The improvement in the quality of life of the rural poor without much investment but proper human resources development and with education and organisation that Gandhiji sought for remained but a pale shadow, a remainder of what had still to be achieved by his countrymen. There is no hope for any significant improvement in the quality of life of our vast rural masses unless our developmental process alters its course, shies away from giganticism, and macro results in material terms, and gives higher priority to better human resources utilisation in an integrated development of our rural areas and a betterment in the quality of life of our rural masses.

(7). The last but not least, as part of the facts of the Indian situation, though it does not certainly exhaust the list, is the haphazard, unplanned, pollution-laded and slums-infested growth of our cities and big towns. While this is partly a result of the type of industrial development we have had and the kind of life it has promoted in urban areas, it is also partly the result of leaving these urban centres to grow on their own without direction or adequate regulation. The result is what has even been officially described as urban chaos. It is now quite clear that we cannot afford either the economic or the social costs of such urban growth. While awareness of this situation is there both in Government and the public, and town-planning departments and urban development authorities have been set up in many towns and cities, the problem continues to grow. And effective action to prevent the growth of cities or even to prevent their haphazard development seem to be eluding the grasp of our planners and decision-makers. There is no doubt however that a national human settlement policy, oriented to the dangers of urban growth, the need for betterment of rural areas and the prevention of environmental hazards and ecological disturbances, is badly needed to be spelt out ; and the necessary machinery set up to implement it in all the States of the Indian Union, if we are to avoid the ills that have accompanied industrial and technological development elsewhere.

In the light of the discussion above, below are a few examples of concrete programmes and policies that would save Indian development from the ills of Western development and at the same time orient it to Indian resources and requirements so as to give the country a higher level of living and a better quality of life. These examples are only illustrative and not exhaustive.

1. While extension of irrigation is a must, it should be accompanied by a proper drainage system that would not only save land from getting out of cultivation but also serve recycling purposes either through wells or tanks that could be built up as an ancillary and complement to canal irrigation. It is also necessary to plan the working of our catchment areas, prevent deforestation and soil erosion, and avoid the carrying of silt in the flow of water.

2. Regulate the use of chemical fertilizers and combine it with appropriate additions of organic manure.

3. Organise a nation-wide movement for the restructuring of our villages, especially their roads, drainage, water supply and housing, in order to free them from pollution and better their quality of life.

4. Organise a nation-wide movement for utilisation of wastes and recycling of used materials so as to increase the material output of both agricultural and non-agricultural activity in India's villages.

5. Organise and implement a nation-wide campaign for the planting of trees and afforestation of areas on the basis of climatic and environmental requirements.

6. Effectively implement a programme of providing every village with its own fuel wood forests and the use of smokeless fuel in their kitchens and industrial establishments.

7. Organise a nation-wide campaign of adult education for the promotion of public hygiene, optiumum use of local materials, improvement of environment and use of recycling used materials in our villages with simultaneous reorienting primary education to serve the same purpose.

8. Put a ceiling on the growth of individual urban centres by banning the establishment of new industries within the city limits or in their vicinity, disperse industrial and other establishments to small towns and rural areas, and actively promote a policy of favouring the growth of small towns, medium towns and villages not only through fiscal incentives but also by improving their infrastructure and giving them better conditions for human habitation.

9. Effectively change the choice of technology in favour of labour intensive decentralised and small producing units, using local materials and local manpower and avoiding the use of techniques that lead to pollution or ecological imbalance.

10. Effectively reorient the use of science and technological for promoting smaller producing units, labour intensive in production, and dispersal of industrial and other establishments over small towns, medium towns and rural areas.

11. Include in our educational syllabuses from the lowest to the highest stages material on environment and ecology that would sharpen the awareness of environmental and ecological hazards of haphazard or private profit oriented development and produce the necessary public opinion for keeping our development path on the right lines.

12. Severely penalise vulgar and ostentatious consumption or a way of life on the part of the elite and the well-to-do requiring production that cause pollution and environmental damage and ecological imbalance.

13. Promote a nation-wide consciousness of the futility of seeking constantly rising material output and private services and shift the emphasis to a betterment in the quality of life as the goal of development and not a mere increase in the gross domestic product or an attempt to reach Western countries in levels of per capita national income.

In conclusion, I would affirm that the problems of pollution, environmental hazards and ecological imbalance and the type of development these are linked which cannot be solved except by the adoption of a socio-economic approach on the lines indicated above to the development process in India. □

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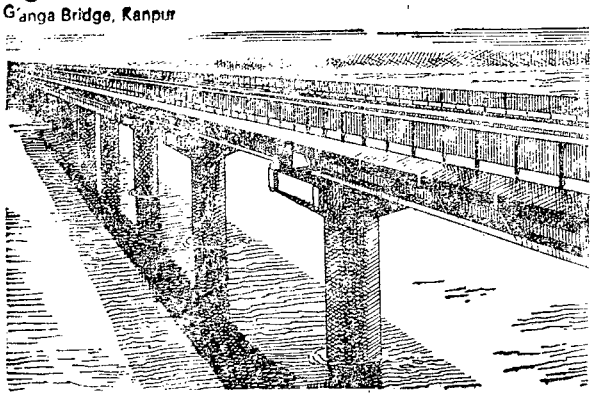
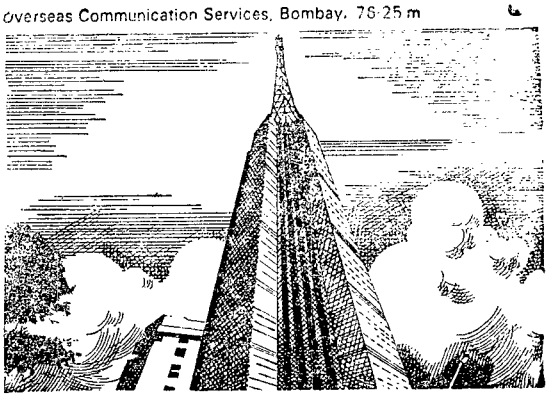
Ganga Bridge, Kanpur



A bridge over the Ganga

Overseas Communication Services, Bombay, 78·25 m



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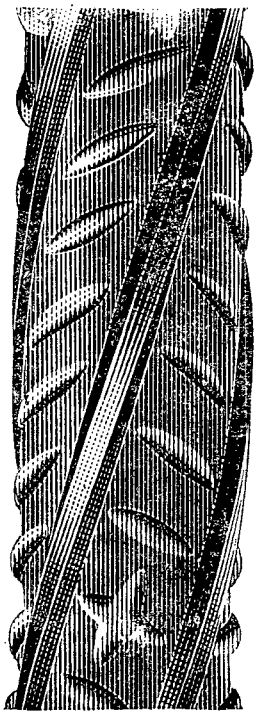

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TN 9984A

Khadi and Village Industries Programme

Somdutt,
Chairman, Khadi Village Industries Commission

KHADI and Village Industries Commission was established in 1957 by the Government of India under an Act of Parliament. Its functions are generally to plan, organise and implement the programmes for the development of khadi and village industries.

There are 24 industries in the schedule of the Commission including khadi. The important among them are ; (i) Khadi-cotton, woollen and silk, (ii) processing of cereals & pulses, (iii) ghani oil, (iv) manufacture of canegur & khandsari, (v) palmgur making and other palm products, (vi) cottage match and manufacture of fireworks and agarbattis, (vii) NEO soap, (viii) Forest based industries, (ix) gobar gas, (x) village pottery, (xi) village leather, (xii) carpentry and blacksmithy, (xiii) Beekeeping etc.

KVIC is implementing its development programmes through State Khadi & V. I. Boards set up under State Acts, Institutions registered under the Societies Registration Act of 1860, Industrial Cooperatives registered under State Cooperative Acts, and individual artisans. In 1977-78 there were 20 State Statutory Boards, about 700 registered institutions and over 24,000 cooperatives in the field, which took KVIC programmes to about one lakh villages.

The Industrial Policy Statement of the Government has accorded an important place to labour intensive industries mainly represented by khadi and village industries. In the context of unemployment and underemployment situation in the country a new planning strategy has been devised for KVI sector with the twin objective of arresting the displacement of labour from the existing crafts and creation of new work opportunities in the rural areas.

Immediately, after assuming office in April 1977 the new Commission appointed two committees, one for formulating Six Year Plan (1978-1984) for khadi and village industries and the other, to examine the organisational structure to give shape to the strategy of development. These committees submitted a joint report in August 1977. They made specific recommendations regarding the nature of Government support including lines of reservation.

In May 1977 the Government sanctioned a comprehensive scheme of Interest Subsidy to KVIC for loans raised from various types of financial institutions (nationalised/cooperative banks, State Finance Corporations etc). The scheme also covers capital expenditure and working capital loans raised from the financial institutions. By 31st March 1978 KVIC had obtained a cash credit limit of Rs. 10.05 crore, from three banks (viz. State Bank of India, Allahabad Bank, Punjab National Bank) for puchase of cotton and raw wool. Under the same scheme, institutions and State Boards have approached various banks for obtaining their working capital requirements for an amount of Rs. 8.73 crore.

The Government of India released an amount of Rs. 44.65 crores for 1977-78 (including the interest subsidy and Science and Technology schemes) to various agencies. The breakup of this amount is depicted in table 1 :

In 1976-77, KVIC received Rs. 28.45 crore (including interest subsidy). Compared to that the step up in expenditure in 1977-78 was of the order of 57 per cent. This is over and above the bank finance made available under the interest subsidy scheme.

In October, 1977 the Government of India under the Ministry of Industry appointed a Working Group on Khadi and village industries under the Chairmanship of Joint Secretary of the Ministry inter-alia, to critically review the performance and recommend future strategy of development including policy support. KVIC was associated with this Working Group, which submitted its final report on 2-12-1978.

The Sixth Plan (1978-79 to 1982-83) envisages the total outlay at Rs. 1,295.66 crore with a provision of employment to 55.17 lakh persons and production level of Rs. 1,231.56 crore.

In pursuance of the Industrial Policy Statement, KVIC has taken up measures for faster development in hand-spinning, NEO & Soap, cottage match and village leather. The action plans have been formulated keeping in view the Government policies of encouraging these industries in the decentralised sector.

Table-1

(Rs. crore)

	Grant	Loan	Total
Khadi	9.00	16.20	25.20
V.I.	2.40	7.58	9.98
Interest Subsidy . .	9.47		9.47
Total	20.97	23.78	44.65

Similarly, for Uttar Pradesh, KVIC has drawnup a programme to provide work opportunities to tappers in palmgur activities who may become jobless in the wake of prohibition. With a view to reach the lowest in the community through the programmes of khadi and village industries, the commission has formulated "Antyodaya" scheme. In Rajasthan it is expected to provide employment to about 20,000 families in selected villages during 1978-79. There are special programme for the North Eastern States also. It has, therefore, set up an Office at Manipur to provide drive and direction. In order to develop the activities in these States, patterns of financial assistance have also been liberalised.

It has been experienced that various industries' artisans working in the self-employment sector can best be assisted by direct financial support depending upon their genuine requirements. KVIC has, therefore, prepared a scheme to assist the individual artisans through the implementing agencies. Instructions in this regard have already been issued and scheme is in progress

The Commission have approached the Government for effecting amendment to the KVIC Act, which seeks mixing of synthetic fibre in khadi manufacture as it aims at providing work opportunities to large number of people in the rural areas. It imposes to produce mixed fabric of comparable quality and price in the decentralised sector.

The Government has decided to set up District Industries Centres (DIC) giving drive and direction to the processes of rural industrialisation. In conformity with the policy of promoting decentralised development through labour intensive technology, KVIC constituted a "Panel for Decentralised Economy" under the Chairmanship of Shri Siddharaj Dhadha, President,

Sarva Seva Sangh. This panel constitutes representatives of Sarva Seva Sangh, KVIC, Gandhi Peace Foundation and certain voluntary agencies.

KVIC has also issued instructions that Khadi Gramodyog Bhandars may be utilised as outlets for distribution of essential commodities and other consumer goods not covered by the KVIC's Act. It has a net work of about 3,500 Bhandars, 12 emporia and about 10,000 sales points with the production centres in the length and breadth of the country and in remote areas as well. This step may enable to ensure the supplies of essential and pure commodities at reasonable rates to the lower strata of the community.

To meet the requirement of trained personnel, regional Vidyalayas have been opened in the State of Haryana, Tamil Nadu, Bihar and Uttar Pradesh.

The Finance Act 1977 provides for income tax exemption to the corporate sector for undertaking the schemes of rural development, which includes programmes for promoting social and economic welfare and upliftment of the rural people.

The production of all the varieties of khadi was 68.4 million sq. metres in 1977-78 as compared to 64.05 million sq. metres in 1976-77 registering an increase of 6 per cent in terms of quantity. In terms of value it has touched the level of Rs. 64.89 crores. There was considerable increase in sales activities. The Government of India sanctioned additional sales rebate for a period of 3 months in different spells for different varieties of khadi. The employment in khadi increased from 8.53 lakh in 1976-77 to 9.22 lakh in 1977-78, i.e. by 0.69 lakh. In village industries the production reached a level of Rs. 192.54 crore in 1977-78 from 1976-77 level of Rs. 171.73 crore i.e. by 12 per cent. The employment reached to 14.93 lakh persons from 11.72 lakh in 1976-77 i.e. by 27 per cent. In other words, the total employment increased by 3.90 lakh whereas production by Rs. 29.67 crore. The table below furnishes the comparative progress during 1976-77, 1977-78 and targets for 1978-79.

The programme for 1978-79 inter-alia proposes attaining a production level of Rs. 314.73 crore (khadi Rs. 82.00 crore and village industries Rs. 232.73 crore) with an employment of 28.50 lakh (khadi 11.28 lakh and village industries 17.22 lakh). The Government has earmarked an allocation of Rs 65.73 crore in 1978-79 including interest subsidy.

Table

Item	1966-77 (Actual)	1977-78 (Actual)	1978-79 (Targets) R.E.
I. Khadi			
A. Additional Outlay (Rs. crores) Government releases	15.06	25.20	57.60
B. Production :			
(i) Qty. (lakhs. sq. metres)	644.74	684.12	850.00
(ii) Value (Rs. crores)	56.03	64.89	82.00
C. Employment (lakh persons)	8.53	9.22	11.28
II. Village Industries			
A. Addtional Outlay (Rs. crores) Government releases	6.13	9.28	36.07
B. Production (Value Rs. crores)	171.73	192.73	232.73
C. Employment (lakhs persons)	11.72	14.93	17.22

While the total sales in khadi and village industries increased from Rs. 226.68 crores in 1976-77 to Rs. 256.81 crore in 1977-78, khadi sales alone has recorded an increase from Rs. 51.97 crore in 1976-77 to Rs. 66.52 crore in 1977-78. The break-up of khadi sales shows that there is an increase in cotton khadi from Rs. 34.54 crore in 1976-77 to Rs. 45.58 crore in 1977-78, woollen khadi from Rs. 12.77 crores in 1976-77 to Rs. 14.37 crore in 1977-78 and silk khadi from Rs. 4.6 crore to Rs. 6.57 crore.

In village industries also, there is a rising trend in sales activities. It registered a rise from Rs. 174.71 crore in 1976-77 to Rs. 19.30 crore in 1977-78. Target of sales in khadi and village industries of 1978-79 are Rs. 82.00 crore and Rs. 232.73 crore respectively. □

A Case Study :

Agriculture Labour Utilisation

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THE PHENOMENON of unemployment and underemployment among rural labour in an underdeveloped economy is caused by the scarcity of non-labour resources, land and capital in relation to rural labour force. In an undeveloped economy, with large agricultural population, land and capital are too inadequate, at least at the present level of agricultural practices and rural based economic activities, to generate enough employment opportunities so as to absorb the entire rural labour force. Consequently a significant part of the total labour force remains either unemployed or underemployed. This constitutes a reserve of unutilized human resources, which if properly utilised can greatly contribute to development of rural areas as also to improvement of socio-economic conditions of rural masses. Identification and measurement of such idle rural manpower are pre-requisite for envolving and adopting a more pragmatic approach to the problem.

Despite a good many efforts both at official and non-official levels to evolve Standard Concepts and methods more relevant for the measurement of nature and extent of unemployment and underemployment in the context of Indian rural scene, there are still serious

doubts with regard to relevance of prevalent concepts,, methodology.

The problem of idle labour in agriculture is in the form of two major elements :

(i) Seasonal Labour surplus which is peculiar to agricultural production, since agriculture itself is a seasonal industry, and

(ii) Labour surplus when the supply of agricultural labour exceeds the demand for various agricultural operations under the existing method of cultivation.

Underemployment among workers is agriculture is the result of the above situation which exists in the farming sector. But how it should be measured and what should be the requirement of labour for particular agricultural operation, are controversial issues in the developing economics.

To estimate the surplus agricultural labour force in Fingeshwar, one of the Community Development Blocks of Bindranawagarh Tehsil in Madhya Pradesh, the author conducted a study. The study is based on data relating to land utilisation, cropping pattern, size of land holdings, occupational pattern etc. collected from revenue officials, block officials and Census reports. Its area according to 1971 Census is 68.4 thousand hectares with 85.4 thousand population. Out of the total population 46.2 per cent workers and of the workers 92.5 per cent are classified as cultivators and agricultural labourers. Agriculture is thus the basic and major source of employment in the area. There is considerable scope for the development of Agri-forest based industries.

While the efficacy of all these measures to tackle the problem of surplus agricultural labour force cannot be denied, the development of village industries needs our immediate attention.

The village industries can only solve the problem of the people engaged in agriculture. While planning for industries we have to consider three main points viz., (a) the location of industries, (b) the type of industries, (c) the scale of production.

Regarding the location of industries it is necessary that it is identified on a scientific manner. For this the following main points should be taken into consideration : (a) Land Utilisation pattern, (b) Cropping pattern, (c) Marketable surplus of food/nonfood crops, (d) Hinterland area of the identified locations, (e) Maximum travel distance of each settlement under the complementary region of the identified location, (f) Transportation routes, (g) Type of workers available skilled/unskillled, (h) Number of days and period for which the workers can be available as per 'Agricultural Employment Calender'.

Regarding the type of industries, all agri-forest based industries which receive their raw materials from forest/agriculture may profitably be located in this block. Oil expellers, rice haulars and small rice mills, food processing, furniture making, agricultural tools, bidi making industries are some of the type which can be developed in this area. Besides this, soap making, leather tanning and shoe making cottage industries can also be gradually developed. Since raw materials are available in this block for all the above mentioned industries, it is necessary that proper immediate action should be taken up to estabilish these industries.

The scale of production has to be restricted to create employment opportunity. Small scale household industries with low capital intensity should be developed. It is so because smaller the scale of production, greater will be the employment.

The author has done a micro-study of Fingeshwar Block in context of the pattern of surplus labour, its periodic availability and has put forth the strong case for befitting and suitable village industries after investigating the available local raw materials etc. One cannot remain but recollect recent emphasis on the significance of village inustries as a panacea to the surplus labour problem in villages. Researches of the micro-level can further recommend how and what village industries can be established in Fingeshwar Block.

Demand and Supply of Labour Force

The nature and volume of underemployment in agriculture generally depends on the total supply of agricultural labour, size-distribution of land holdings cropping pattern and prevailing agricultural practices. While the requirement of manpower in agriculture is dependent on the total cultivated area or the gross cropped area, the supply of manpower is dependant on the existing labour force and the days for which they are prepared to work.

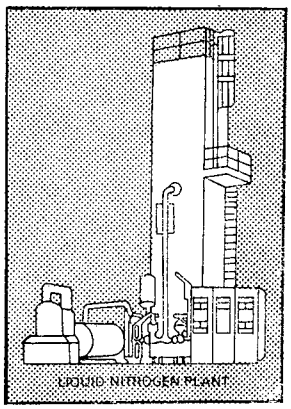
Thus the demand for labour force in farming will be the product of the required labour input per hectare and the total area covered under different cropping season. On the other hand the supply of the labour force will be the product of the total days required for agricultural operation and the population employed primarily in agriculture. Because of the time limit operations of sowing and harvesting farmers in this block remain engaged only 220 days in a year. For remaining 145 days they are either free or require employment.

Elemination of seasonal unemployment in agriculture is, therefore, the first problem to be solved for improving the employment conditions and the income levels of the local population. For this we have to create periodic employment opportunities in such a manner so as to absorb the surplus mandays.

The second major problem of surplus labour force arises because given the present technique and organisation, to produce the present yield the actual labour employed is much higher than what needed. The object of employment policy is not only to provide full employment but to achieve full employment in such a way as to maximise their income and output and thereby increase their consumption level. The study reveals that for 220 days of agricultural operation, 330 mandays, per hectare, are required. This means that for cultivating 0.65 hectares of land one person will be engaged for 220 days. If we calculate the net income from 0.65 hectare we find that one worker is getting only Rs. 2.65 per day. Thus per family's in come, which constitute 2 adults 3 children, per day comes to Rs. 4.30. Whether this meagre earning can provide them two times of bread, when they consume 4 Kg. of rice (Rs. 2 per Kg. of current prices) per day? Now the question arises as to how the income can be raised from Rs. 4.30 per day per family to atleast Rs. 8.00 or if possible to Rs. 8.60. This can only be done by creating such a situation in which the surplus farm labour of the economy can be withdrawn without reducing its farm production, which means transfer of a pool, of labour force from the farming sector without reducing its output. □

A hundred years ago,
air was liquefied for the first time.

BHPV celebrates the event... by handing over a 40 litre per hour capacity Liquid Nitrogen Plant to Andhra Pradesh Animal Husbandry Department



During the Centenary Year of 'liquefaction of air', BHPV ushers in a new era of cryogenic activity in the country.

One Hundred Years of Liquefaction:

The year was 1863. And Andrews described his classical experiment on the condensation of Carbon dioxide. This was then followed by the splendid discovery of Joule and Thomson which is now popularly known as "Joule-Thomson Expansion".

Cailletat observed a thick mist when compressing Oxygen at −30 C. And Pictet liquefied Oxygen in bulk quantity by the process which bears his name. This was in 1877.

These events were followed by an era of major breakthroughs in the liquefaction of gases. Dr. Karlvon Linde of Germany was the first to realise the industrial application of liquefaction of air and its separation during the same period. Dr. Georges Claude of France experimented on liquefaction of air and separation of Oxygen and Nitrogen, which finally led to the invention of Claude Cycle to liquefy air with the help of expansion engine. This was in 1902. The last of known inert gases - Helium - was liquefied by H. Kamerlingh Ouues of Holland. This was in 1908.

Our Humble Homage :.
In this Centenary Year of Liquefaction of air, we at BHPV pay our humble homage to all the pioneers, and renew our resolve to maintain pioneering lead in the matter of cryogenics in the country: With full support of L'Air Liquide of France.

Major Accomplishments of BHPV include :

- 2 Plants each to produce 550 tonnes of Oxygen/day for Bokaro Steel Ltd.
- 2 Plants each to produce 550 tonnes of Oxygen/day for Bhilai Steel Ltd.
- 1 Plant of 890 tonnes/day oxygen capacity for National Fertilizers, Panipat.
- 1 Plant of 700 tonnes/day oxygen capacity for Hindustan Chemicals & Fertilizers, Haldia Unit.
- 1 Nitrogen Washing Unit of 900 tonnes/day capacity for National Fertilizers, Panipat.
- 1 Nitrogen Washing Unit of 620 tonnes/day capacity for Hindustan Chemicals & Fertilizers, Haldia Unit.
- 1 High Purity Nitrogen Plant of 2500 Nm3/Hr. capacity for IPCL, Baroda.
- 15 other Oxygen Plants of sizes 58 Nm3/Hr. and 140 Nm3/Hr.

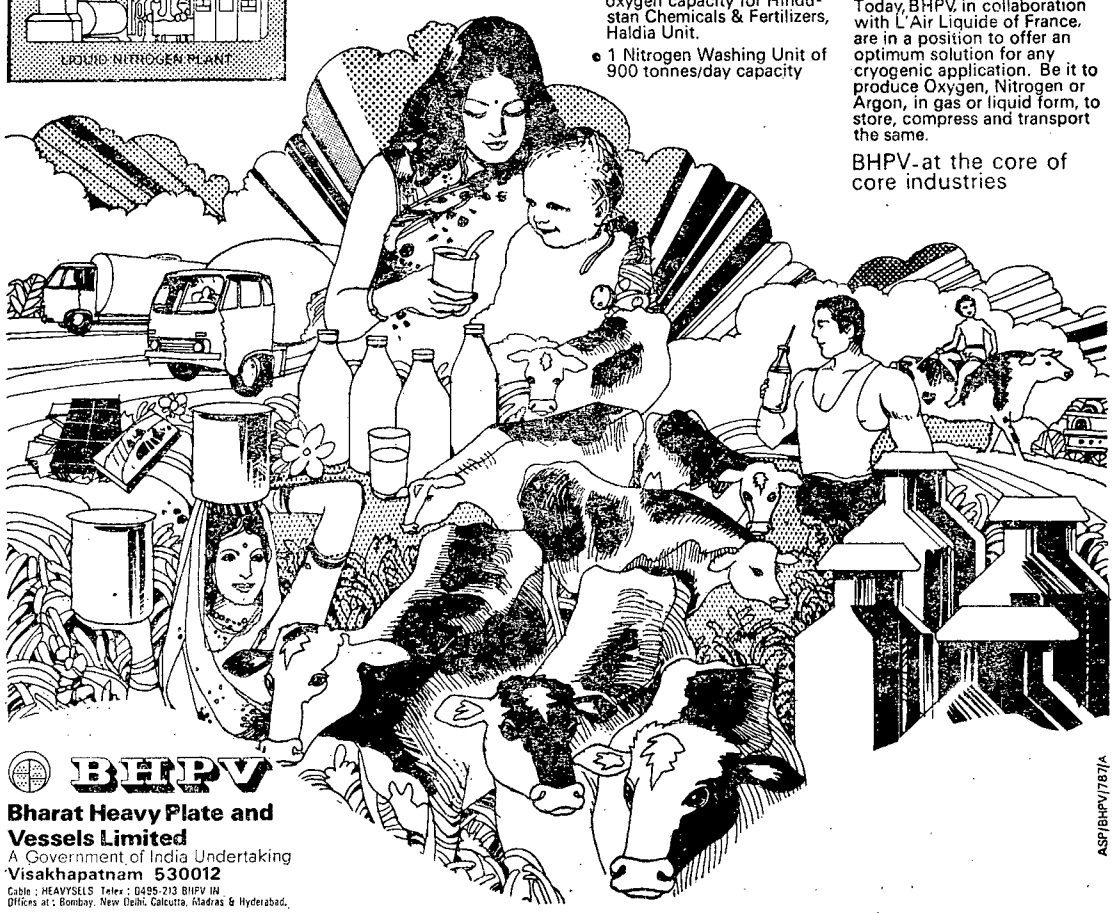
We at BHPV are justifiably proud of our role in heralding the concept of self-reliance in the matter of air and gas separation plants in the country.

New Fields, New Products :
This is not all. BHPV supplied Cryogenic Storage tanks of various sizes to customers in the country.

As a special tribute to the founding fathers of 'liquefaction of air' during this Centenary Year, we at **BHPV have successfully manufactured and supplied a Plant to produce 40 litres/Hr. Liquid Nitrogen for the Animal Husbandry Department, Government of Andhra Pradesh, to help their efforts in improving the breed stock of the cows. Ultimately to usher in an era of plentiful milk.**

Today, BHPV, in collaboration with L'Air Liquide of France, are in a position to offer an optimum solution for any cryogenic application. Be it to produce Oxygen, Nitrogen or Argon, in gas or liquid form, to store, compress and transport the same.

BHPV-at the core of core industries



BHPV

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ASP/BHPV/787/A

BLAZING NEW TRAIL IN EXPORT MARKETING

N. K. Bhardwaj
Executive Director
Trade Development Authority

THE TRADE Development Authority (TDA) symbolising a new concept in export marketing development, has established a bridge of business trust between the overseas buyers and competent Indian Manufacturers and exporters. Its object has been to identify viable production units, particularly in the small and medium sectors, provide meaningful assistance in the expansion of export-oriented production facilities in selected product areas ; stimulate product development and adaptation and help enhance the technological level of industrial exports.

This innovative style in export management has helped export growth of many non-traditional products. That the rate of growth of the export value of products taken up for promotion by the TDA has continuously recorded an upward trend, higher than that of other products, is convincing evidence of the helpful role played by the TDA.

TDA provides micro level, personalised services to its clients. Its role is both in the field of product and market development. (One outstanding fact is that it has brought a new style in the management of the task of export promotion). TDA is neither a manufacturer nor an exporter. It is a catalyst of export promotion.

As an instrument of growth for the products of small and medium scale industries in the sphere of non-traditional exports, TDA has considerably enlarged its area of operation. Thailand, Indonesia, Singapore, Malaysia, the Philippines, Hong Kong, South Korea, Saudi Arabia, Iran, Kuwait and Iraq are the new additions to the existing targst markets comprising the US, Canada, West Europe including UK, Japan, Australia and New Zealand. The List of product groups taken up for export promotion has also been enlarged by adding tele-communication equipment, mechanical handling equipment, basketry, garden tools, garden furniture, carpeting, heating and cooling equipment, scooters and mopeds.

BROADLY speaking, TDA adopts a two-pronged approach to export promotion. The first is to identify selectively competent and viable production units with export capabilities and export conscious managements. The size of the unit is not the deciding factor. It is the export-worthiness of the unit which counts for its selection for enrolment as TDA client. TDA extends its services to nearly 625 such manufacturer-exporters. Out of these more than 65 per cent are from the small scale sector.

The second is to identify the interested foreign buyers and importers. Over a period of time, TDA has been able to cultivate over 10,000 such overseas buyers and importers who made TDA as their reliable shopping guide in India. They get in touch with TDA's foreign offices, write to TDA or contact the TDA clients directly to meet their requirements. Buyers' Missions visit India, at TDA's invitation and at their own. They are introduced to reliable supply sources in this country. Mini-displays are also organised for them by TDA. During the last 18 months over 40 buyer's missions from abroad visited India at TDA's invitation. Many of these buyers visited India for the first time and placed orders for Indian goods. Orders for new products like mopeds and scooters, water pumps, oil pumps, dog chains, axel shafts, night latches, aluminium paste, rain coats, materalised for the first time with TDA's help.

THIS YEAR, TDA introduced the scheme of group membership. Its object is to extend TDA's services to small scale units handicapped by capacity constraints, locational disadvantage, organisational limitations etc., and provide encouragement to them to participate in the export efforts of the country. The small scale industries, under this scheme, can avail of TDA's services and expertise through the State Export Corporations, State Small Industries Development Corporations, and industry and trade associations. The organisations should enroll themselves as TDA clients and pay the annual fee on the basis of number of units associated with them. The trade enquiries, marketing leads and joint ventures proposals monitored by TDA would be transmitted by them to their

members and they would be able to provide them information and other inputs locally.

New Market, New Buyers

Through sustained efforts, TDA has developed new markets, new buyers and new products for exports. Similarly, it has achieved notable success in the sphere of demand creation in the target markets for the products of its clients. For this, a number of effective techniques of export promotion have been developed and perfected. To name a few : organisation of buyer-seller meets, contact promotion programme, commercial development programme, mini displays for the client's products, participation in specialised trade fair and exhibitions, invitation to identified buyers for product exploration etc.

Buyer-Seller Meets

Buyer-Seller Meet is a technique evolved by TDA for bringing the buyers and sellers together for trade contact and promotion. Reflecting a micro approach to a macro problem of export development. This is an integrated programme which combines supply assessment in India (by identification of products on the basis of factor endowment and selection of capable manufacturers) and demand assessment abroad (through test marketing and market surveys). It finally culminates into organisation of a trade fair where the sellers meet the buyers. So far, six such Buyer-Seller Meets have been held in the UK and the US. Two Buyer-Seller Meets have been held in Europe in Cologne, West Germany and Cophenhagen, Denmark, last October.

Product Development

TDA initiated schemes for upgradation of technology and processes, procurement of samples, catalogues, drawings and patterns for making counter-samples and prototypes for buyers' approval. Efforts are under way to seek recognition of Indian testing facilities for electronics in the US, Canada and Sweden. Programmes have been initiated for provision of services of product technologists and designers, training of personnel in the maintenance of machinery and equipment, transfer of complete plants and machinery to India, preparation of product catalogues and organisation of fashion shows.

New Products

The list of non-traditional products with export potential has been continuosuly expanding. Similarly there are products whose export demand has shown an upward trend. For instance, products such as hand gloves, locks and padlocks, garden tools, garden furniture, precision hand tools, vices, wood screws, self-tapping screws, electronic software, sports goods and woollen knit-wear have been identified for capacity creation and product development. India's traditional base of production in leather and cotton gloves and sports goods is sought to be diversified through various programmes.

Teams of product specialists, already manufacturing traditional range of products, will be taken to developed markets (in which there is a demand and expertise available) to identify new items in these fields and arrange long-term marketing tieups with producers, who will supply the technology, and the trading houses having distribution net-work.

Through sustained efforts, TDA has developed new markets, new buyers and new products for exports.

PRODUCT development and adaptation of designs to suit the demands of sophisticated consumers in western world is most crucial for increasing the per unit value realisation of export items, TDA developed a programme for providing testing facilities for hand tools and bicycles in Jullundur and Ludhiana respectively and for setting up a Testing Room and a Central Finishing Centre for handicrafts in Moradabad.

Professional technical services will be provided to selected small scale units in the fields of handicrafts, hand tools and bicycles. A break-through in electronic testing facilities was achieved recently when Sweden authorised the Controllerate of Inspection Electronics, Bangalore, to issue quality certification for electronic components for export from India. This institutional arrangement was made possible through the initiative and efforts of TDA. It has removed one of the biggest bottleneck in boosting export of electronic components from India to Sweden. TDA also initiated action on getting the Indian electrical and electronic items approved through Underwriters Laboratory in the US and Canadian Standards Association in Canada.

A seminar for training personnel in the maintenance of machinery and equipment will be organised later this year and two Swedish experts are to visit India for this purpose. About 250 samples, catalogues and drawings were procured from abroad for preparing counter-samples and proto-types in India. Services of product technicians and designers for a number of items are in the pipeline. TDA is also building up a Library of Catalogues of leading world manufacturers and importers for guidence of its clients.

With a view to enhancing confidence among foreign buyers about Indian companies, TDA entered into a specific arrangement with Dun and Breadstreet Inc., USA, for listing TDA clients free of cost. This world renowned organisation provides credit-worthy information on companies to a subscriber. Through TDA's efforts, about 500 Indian companies are at present listed with D & B. □

The Sheet Glass Industry of India.

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Dept. of Commerce, Hindu College, Moradabad

THE SHEET glass includes glass sheets, figured and wired glass and also covers subsequent processing of sheet glass, viz., toughened glass, laminated safety glass, mirror glass and insulite glass. The sheet glass industry being export oriented occupies a significant place in the economy of the country. About one-fifth of the total finished products of the industry are exported every year. The proportion of exports of sheet glass to total glass exports is about one-fourth.

The history of the sheet glass manufacture in India begins with the setting up of the U. P. Glass Works Ltd., Bahjoi (Distt. Moradabad in U. P.) in 1928, as a pure indigenous unit. But the era of its development began with the Second World War, which provided a golden opportunity for its development because of the restriction imposed on imports of sheet glass. During this period another manufacturing unit was set up in U. P. and protection was granted to the industry. Consequently, the imports of sheet glass declined a lot and industry could develop without foreign competition. The position remained unchanged till independence of the country.

After independence, proper place was assigned to the industry in our successive five year plans and it could develop steadily. This developing trend of the industry is depicted with the help of table below :

An analysis of the table reveals that :—

(i) The sheet glass industry of the country showed a constant progress and its installed capacity increased by more than five times within a period of 25 years from 1950-51 to 1975-76;

(ii) In India, the manufacture of figured and wired glass started in 1963 i.e. during the Third Five Year Plan ;

(iii) The number of units manufacturing sheet glass increased from 3 to 8 during this period of 25 years, out of these 5 new units, one was set up during the Second Plan, other two during the third plan period and the rest in the last decade ;

(iv) The capacity utilisation has also been showing an increasing trend, having been gone up from15 percent in 1950-51 to as high as 82.1 in 1975-76 with the exception of 1965-66, when it was only 40.4 percent. It might have been because of the China attack over India and consequent economic crisis;

(v) The annual rate of growth, which was as high as 27 percent during the first plan period decreased to 16.7 percent during the second and to only 4.7 percent during the third plan period. Later on its trend took a turn and it was 12.5 percent 1965-66.

(vi) The imports of sheet glass declined a lot and the exports, started in 1956-57, showed a constant increase; and

(vii) The manufacture of sheet glass by P.P.G. process was introduced during the third plan period and thus the industry reached a new phase of its development.

Where does the Industry stand now ?

The sheet glass industry of the country has been maintaining the tempo of development even in the present decade. There are 8 industrial units engaged in the manufacture of sheet glass with an installed capacity of 27.31 million sq. mtrs. of sheet glass and 5.74 million Sq. mtrs. of figured and wired glass. (The same is dipicted in Table 2)

Besides, 5 more industrial units with an installed capacity of 28.70 million square meters to manufacture sheet glass as well as figured and wired glass have also been set up recently.

The installed capacity to manufacture sheet glass in the country is only 61.75 million Square meters. Really it is very low in comparision to the installed capacity of sheet glass manufacture in other countries like U.S.A., Europe, U. K. and U. S. S. R., where the

TABLE 1

Years	Manufcturing units	Capacity in Mln. Sq. Mtrs	Capacity Utilisation in Percentage	Annual rate of Growht in percentage
1950-51	3	6.10	15.0	27.0
1955-56	3	6.50(a)	58.0	16.7
1960-61	4	10.30	82.0	4.7
1965-66	6	20.13 2.56*	40.4	12.5
1971-72	6	22.00	77.3	..
1975-76	8	27.31 5.74*	82.1	5.0

(a) Estimated figure,
*Manufacture of figured and wired glass.

TABLE-2

Installed Capacity of Existing Sheet Glass Units

Name of the Industrial Unit	Installed Capacity in Mln. Sq. Mtrs.	
	Sheet Glass	Figured and Wired Glass
1. M/S. Hindustan Pilkington Glass Works Ltd., Asansol (West Bengal)	5.00	0.90
2. M/S. Indo Asahi Glass Co. Ltd., Bhadani Nagar, (Bihar)	4.60	..
3. M/S. Shree Vallabh Glass Works Ltd., Vallabh Vidhya Nagar (Guj-Gujarat)	4.80	3.50
4. M/S. U. P. Glass Works Ltd., Bahjoi (U.P.)	1.67	..
5. M/S. Saraikella Glass Works Pvt. Ltd., Kandra (Bihar)	4.32	..
6. M/S. Madras Sheet Glass Works Pvt. Ltd., Tiruvottiyar (Tamilnadu)	1.92	..
7. M/S. Window Glass Works Ltd., Clacutta (West Bengal)	..	1.34
8. M/S. Triveni Sheet Glass Works Ltd., Allahabad (U.P.)	5.00	..
TOTAL	27.31	5.74

average annual installed capacity is about 300 million sq. mtrs. Besides in India the sheet glass units, are only 13, scattered in the country and deprived off the advantage of localisation. The installed capacity of sheet glass manufacture in the country is not enough to meet the requirements of the ever increasing demand for sheet glass in the markets in India and abroad. All the units manufacturing sheet glass are in private sector and no effort has so far been made in the public sector in this direction.

Though the manufacture of sheet glass has gone up by more than 60 percent within a period of five years from 1971-72 to 1975-76, it is not enough to cope with the demand in India and abroad. Therefore, it should be increased by using the installed capacity of the existing units to the fullest extent and also by setting up new sheet glass manufacturing units.

Export Performance

This industry of the country has also become export oriented, having entered in the field of exports in 1956-57. Table below gives the export performance of sheet glass alongwith its percentage to total glass products :—

TABLE-3

Exports of Sheet Glass

(Rs in Lakhs)

Year	Total Exports of Glass	Exports of Sheet Glass	Percentage Share of Sheet Glaws to total
1973-74	475.8	104.0	21.9
1974-75	589.1	109.4	18.6
1975-76	800.1	155.1	19.4

The exports of sheet glass have gone up to more than one and a half time in 1975-76 as against the figures of 1973-74. About 1/5th of the total exports of glass are sheet glass products. There is great potential for the exports of our sheet glass, specially for figured and wired glass, in almost all the Arabian and African countries, provided we are in a position to manufacture a better quality and lower the cost of manufacture.

Problems

The sheet glass industry of India is still in its initial stage and almost all of its units are working with low capacity. Consequently, they are facing certain problems.

(i) The units, being small, are not in a position to use their capacity in full. Consequently, they are deprived off the advantages of large production ;

(ii) It is a well known factor of the cost analysis that more the quantum of production, lower will be the portaing and administrative costs. The analysis of the cost of sheet glass industry in the country reveals that the ration of fuel consumption and overheads is about 50 percent higher than in U. S. A. and other developing countries of the world;

(iii) Modernisation is a problem being faced by almost all the industries in India. In case of sheet glass industry, it is much acute. Since all these units are running in the private sector, the enterpreneurs are not in a position to modernise their machinery and introduce new techniques of sheet glass manufacture, because of the shortage of funds;

(iv) Another serious problem being faced by the industry is the absence of the Research And Designs Department and the consequent unawareness of the Indian manufacturers about the new designs of sheet glass specially of figures and wired glass;

(v) The Indian manufacturers do not have pro-

per informations about the demand pattern of sheet glass in the markets abroad. Being their scale of production too small, they are not in a position to appoint representatives and to participate in the exhibitions etc.

(vi) The problem of transportation to this industry is also much acute. Since sheet glass industry is spread over throughout the country, the transportation cost comes very high. Besides, Sheet glass being very delicate, requires the most careful packing. Thus on one hand, the cost of packing and on the other unavoidable breakage in transit further increase the transportation cost; and

(vii) In India figured glass is made of only 4 feet width while it is of 8 feet width in other developing countries and 12 feet width in Europe and U. S. A. Naturally it affects the demand for Indian figured sheet glass in the markets abroad.

In brief, the sheet glass industry of India is still in its infancy and requires a drastic change and stern remedial measures for its development. The Industry can only develop by combine efforts of the intrepreneurs government and the technical institutions like Central Glass and Ceramic Research Institute, Indian Standards Institute and other glass Councils. Most of the problems, being faced by this industry, shall be solved autometically, if the installed capacity of the existing units is increased and used in full, as the advantages of large scale production will definitely lower down the cost of manufacture and will extend the scope for modernisation and evolving new research and designs. There is need to pool the expertise experience and researches of different organisations connected with the industry. The formation of a Central Coordination Committee with representatives of the industrialists, government and other concerned organisations shall be of great advantage. Besides, the industry should also adopt the latest management techniques to ensure its economical and efficient operation by improving the quality and quantity of sheet glass. □

National Handloom Expo'79

Tasks Ahead

S. K. Ray
Sr. Correspondent, Yojana
Calcutta

"SPINNING wheel is a handmaid of agriculture and the handloom is the nation's second lung". Symbolic are these words of Mahatma Gandhi which epitomise the role that handloom plays in our national economy. This biggest cottage industry of the country that provides livelihood to 23 million people, the largest number in a single sector next only to agriculture, and accounts for a third of the country's total production of cotton textiles and of the total cotton textile exports, offered to the public a panoramic view of the wide spectrum of its products at the National Handloom Expo'79 which opened in Calcutta on 15th February and lasted for a month.

Tastefully decorated with handloom motifs, an imposing gateway led the visitor to a spacious 3 lakh square-foot-enclosure lined with thirty pavilions and stalls which had on display all that was latest in handloom fabrics—cotton, art silk, silk and woollen. It was a riot of colours in a wide variety of designs on an equally wide range of textures, befitting the theme of the Expo : "Handloom for everyone, for every taste, at every price".

As part of its massive programme of Publicity and Consumer Information the Development Commissioner for Handlooms of the Union Ministry of Industry, in collaboration with the Government of West Bengal organised this mammoth exhibition, the first of its kind to be held in the eastern region, at which almost all the State Governments and Union Territorries through their Handloom Apex Societies and Development Corporations put on show and for sale their choicest handloom products. The age-old skills in handloom weaving consummated through generations were graphically illustrated under one umbrella in the Calcutta maidan which wore a truly handloom look.

Fairs of this kind form an important plank of the handloom marketing strategy of the Ministry of Industry aimed at bringing an ever widening range of handloom fabrics within the purview of wider sections of consumers. Conversely, the fairs provide a forum for knowing at first hand the changing patterns of consumer preferences. And it is these trends in demand that serve as useful guidelines for suitably adapting future plans of production. There is also an educative and informative aspect. The challenges and opportunities inherent in this industry are brought to the fore as much for the benefit of the weave as for the enlightenment of the public. So are the Government's efforts to overcome the challenges and exploit the opportunities not only to give the weaver a better deal but also to ensure consumer satisfaction. The first full-fledged handloom exihibition called the National Handloom Fair was held in Delhi in April '77. Madras was the venue of the next National Handloom Expo' in December '77-January '78. Soon after, in March-April '78, the Handloom Spring Bazar was organised in Delhi. The Calcutta Fair was the latest in the series. Agri. Expo '77 and the National Small Industries Fair '78, both held in Delhi also provided occasions for building up the image of handloom.

Theme Pavilion

The centre of attraction in the National Handloom Expo'79 was the Theme Pavilion set up by the Development Commissioner for Handlooms which projected to the visitor a complete picture of the potential of the industry for unlimited growth. Placed on display were handloom products ranging from Janata Dhotis and Janata Sarees, a subsidised controlled cloth meant for people of small means being too cheap for their quality and durability, to such exclusive and highly expensive sarees as the Patola, Bichitrapuri and Baluchar, so flattering to the instinct of the affluent. The Theme Pavilion sought to dispel the popular notion that handlooms were coarse, shrink-prone and of limited utility and assure the visitor that the versatility of textures and of designs which had been evolved could well meet the diverse needs as much of a person of simple habits as of the most sophisticated and discriminating.

Charts, maps and graphs hung around the Theme Pavilion highlighted the pivotal place that handloom has occupied in the rural economy through the ages and proclaimed the commanding position of this industry as enunciated in the Industrial Policy Statement made in Lok Sabha on December 23, 1977 and in the Integrated Textile Policy announced in Parliament on August 7, 1978. The technological advances in the handloom industry and the measures that are under way to ensure for handloom a pride of place in the national economy were also effectively

brought to the notice of the visitor. What was of special attraction was the live demonstrations given by skilled craftsmen of the various techniques and processes of weaving, dyeing, printing and block-making. The Exports Corner with its models draped in glamorous fabrics which are in great demand in foreign countries and the Children's Corner with equally attractive models clothed in fascinating garments also proved to be big draws.

Other Pavilions

Different States brought their classic and characteristic products which have already earned a name and also newer products which have a great promise. On display were bedspread, scarves, jackets, gowns and overcoats made of Lysamphee, a glossy surfaced quilted cotton fabric with a soft feel from Manipur, Assam and Tripura; a new range of Tie and Dye sarees and dress material cotton, silk and tassar-from Orissa and Andhra; lovely woollen pashmina shawls from Himachal Pradesh and Jammu & Kashmir; gorgeous kancheepuram silk sarees interwoven with golden threads and a variety of polyester blends for shirting from Tamil Nadu; carpets and tapestry made of jute yarn from Uttar Pradesh; varieties of bed materials and furnishings from Punjab and Haryana and block-print bedspread of attractive colours from Rajasthan. And West Bengal, the traditional home of exquisite textiles, needs no introduction. Fabulous Jamdani, Baluchar, Tangail, Dhaniakhali and Shantipur sarees, elegant dhoties and beautiful utility fabrics adorned their pavilion. Superb texture and flawless workmanship spoke for themselves.

Handloom Programme

To any keen observer the message of the Expo was clear—the handloom industry is a commercially viable forwardlooking industry which can stand up to and overcome the challenge of the mechanised textile industry in respect of price, durability and utility. The break-through achieved in the area of technology was explicity. As for elegance and dignity, handloom fabrics have lived upto thier age-old reputation of being something unique, unsurpassed by any products of even the most sophisticated machine. Almost all the silk fabrics in the country are woven on handloom and the most exclusive fabrics, whether cotton or silk, are handwoven and handcrafted.

Yet the handloom industry has miles to go to attain the requisite level of development and diversification and fulfil the role cast for it in the new formulation of the textile policy. It has been decided that the clothing needs of the masses will be progressively met through the development of the handloom sector along with khadi and to that end, no expansion of the weaving capacity in the organised mill and powerloom sector will be permitted and the policy of reserving certain items of cotton textiles for the handloom sector will be effectively implemented. The objective is to revamp the decadent handloom industry and exploit its full potential for generating employment in the rural areas.

To attain the objective it is imperative to implement a well-knit comprehensive package programme that will extend to all weavers every possible assistance in the use of improved techniques of weaving, printing and dyeing, supply of the necessary inputs including yarn, dyes and chemicals, and of easy credit and lastly, in marketing their products. The 25 Intensive Development Projects and the 21 Export Production Projects set up in different areas form a nucleus of a chain of growth centres all over the country. An increase in their number will certainly go a long way in increasing the out-put of the handloom sector to meet the growing internal demand and the export needs. These projects are located in areas where there are concentrations of weavers and the idea is to develop their full capacity for optimum production. Steps are being taken to increase the number of the existing Weavers Service Centres to extend complete technological support to the weavers and promote design development. The pace of dissemination of the improved techniques of weaving will be accelerated if such weavers service centres are set up in greater numbers.

A substantial expansion of credit for handloom weavers through the commerical banks and cooperative credit institutions is another highlight of the new handloom development programme. As for yarn, the Government will ensure that the handloom sector has precedence in the allocation of yarn spun in the organised sector. Steps are under way to bring into operation new spindlage to meet the full demand of weavers for yarn. The National Textile Corporation will also give this aspect priority attention and increased availability of yarn from the public sector will help maintain reasonable prices. Special assistance is being given through the National Cooperative Development Corporation for augmenting the spinning capacity, processing facilities and marketing arrangements.

In order to pool the resources and make the best use of them, weavers are being brought more and more within the cooperative fold by strengthening the primary and the apex cooperative institutions. Cooperatives will free the weavers from the yoke of the master weavers and help them reap full value for their labour. Plans for modernisation of looms, training of weavers on improved techniques, diversification of production and extension of the network of sales outlets are other aspects of the Development programme now under implementation.

The biggest challenge facing the handloom industry today is how to achieve standardisation and ensure quality control. Marketability of any product depends on the goodwill it enjoys in the market and goodwill in its turn is dependent on the level of standardisation and quality control, the two indispensable aspects of any promotional scheme. Handlooms in general will carve out a niche in peoples mind if every handloom product has a hall-mark of quality. A great deal more remains to be done to help handlooms because, in the words of Shri George Fernandes, the Union Ministry of Industry, 'it is mainstay of our rural economy along with agriculture". □

Planning Forums in social transformation

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THE AIM of this article is primarily two-fold : to assess the working of the College Planning Forums with special reference to Tamil Nadu and to suggest some new measures to render their contribution to economic development more productive and purposeful.

The Planning Commission conceived the idea of establishing Planning Forums in Universities and Colleges in 1955 while formulating the Second Five Year Plan, initiated the scheme in 1956 and transferred it to the Ministry of Education in 1968. The scheme was started with the object of fostering an awareness of the need for planned development of the nation and spreading plan consciousness among students and teachers and through them among the general public. Over the years the scope of the objectives and activities has been progressively enlarged as a result of periodic reviews of their functioning.

The general guidelines issued by the Ministry of Education, Government of India, in 1977 envisage and encompass a wide spectrum of functions for the planning forums which include :

1. promoting intellectual understanding of the plans and the plan processes by arranging discussions and debates ;
2. functioning as Information Centres and displaying the developmental activities ;
3. conducting socio-economic surveys in urban and rural areas ;
4. cooperating with other developmental youth programmes ;
5. Forging close links with the developmental machinery at district and block levels and actively participating in development projects ;
6. Providing constructive and positive suggestions for plan formulation, implementation, and evaluation.

Organisation and Funding

A Planning Forum must be registered with the State Government in order to become eligible to receive financial aid. It is operated by an Executive Committee consisting of professors and student representatives under the overall guidance of the Principal. A senior academician is to be in charge of the forum and a senior student, its secretary. At the initial stages the planning forum was, for all practical purposes, in the exclusive domain of economics and commerce students. But eventually steps had been taken to enrol students belonging to all disciplines with the view to ensure widest possible participation in the activities of the forum.

All the registered planning forums receive a basic grant of Rs. 400 per year. But about a dozen select planning forums in the State which have exhibited keen enthusiasm, formulated and implemented significant projects, and whose performance has been of a high order are given higher grant upto Rs. 1600 per year. The forums are also permitted and encouraged to raise local resources of their own to supplement the government grant. The Union Government, in addition to such grants, is also prepared to provide financial assistance upto Rs. 15,000 for organising regional meetings and seminars.

Activties Undertaken

The movement, small as it was in 1956, has taken big strides and struck deep roots in the colleges of Tamil Nadu over the last two decades and now almost every college has a planning forum. There are altogether 201 college planning forums of which 62 and 139 are in Government and private colleges respectively. Of these 46 are functioning in Women colleges.

The planning forums have become the intellectual catchment area of the colleges ; they have not only opened up new frontiers of knowledge for students but given them new avenues of service. They have brought into clear focus the importance of planned development and enlightened the students and the faculty on the planning processes and strategies and their successes and shortcomings. All the planning forums have set up permanent Plan Information Centres where plan literature and charts and posters depicting the economic and social progress of the nation are displayed. Every year they conduct debates and seminars and organize inter-collegiate essay, elocution and chart-drawing competitions on different aspects of planning. They also celebrate the 'Plan Week', arrange extension lectures by experts and undertake educational visits to plan projects.

Educational institutions have a vital role to play in the social and economic transformation of the nation. They can successfully play this role only by identifying the needs of the people and suggesting possible solutions for such pressing problems as poverty, unemployment and illiteracy. The colleges depend to a large extent on their planning forums to deal with such issues and the latter undertake socio-economic surveys for analysis and action. It must be admitted, however, that the value of such surveys varies directly with the competence, skill and sincerety with which they are conducted. One cannot expect uniformly high-quality research surveys from all colleges. There is indeed an element of truth in the charge that some or many of the surveys have turned out to be colourless, stale and ritualistic exercises. But even such surveys may be

useful in the limited sense that they enable the students to learn some rudimentary research techniques and transmit the message of planning to the people of urban and rural areas surveyed. But, what is more significant is that some of the superior planning forums working under imaginative and innovative leadership have moved away from dreary and dead uniformity and broken new ground by conducting meaningful and pinpointed surveys on saving, investment and consumption patterns, changes in attitudes and cost-benefit analysis of select projects.

Learning by doing

One of the objectives of the planning forums is to cooperate with other developmental youth programmes like the NSS, for they both have the same ultimate objective of national development and the youth participation therein. The planning forums and the NSS are truly complementary to each other. The National Conference of Planning Forums held in 1976 has emphasised that the planning forums must become instruments for motivating programmes of community service. A number of planning forums in Tamil Nadu have worked in close collaboration with the NSS in adopting a village and working out and executing a plan for village improvement. They have together undertaken such works as construction of roads, clearing tanks, helping build schools, conducting adult education classes and organising cultural programmes. The planning forums and the NSS do contribute a great deal towards rectifying some of the serious defects of formal education : the gap between the educated and the uneducated as regards attitudes and values is narrowed ; the dignity of labour is practised, not just preached ; the uneducated are educated and, in the process, the educated too are educated. The students and teachers come into direct contact with the actual problems of the uneducated villagers for which the textbooks do not provide solutions. They understand the valuable lesson of "learning by doing".

Recently great emphasis has been laid on the need to make the educational system more purposive and relevant to the needs of the country and reorient it with rural bias, since the vast majority of the poor are found in the countryside. As a result of this thinking, community and social service has been made an integral part of the university curriculum for which separate marks are awarded. One of the benefits of the social service activities undertaken by the forums is that they are useful in evaluating the contribution made by the students to the welfare of the society.

Need for New Dimensions

While the planning forums have done commendable work towards realising some of the objectives listed in the beginning, they have not been very successful in forging close links with the developmental machinery at district and block levels and in providing positive suggestions for the plan formulation, implementation and evaluation. The work of the planning forums needs to be greatly strengthened in these areas. Various planning forums have been functioning almost in isolation with little contact and coordination with each other and with the State planning machinery at different levels. No State Level Conference of the Planning Forums has been organised since 1967 although their number has steadily increased. Tamil Nadu is the first State in establishing a State Planning Commission. The commission should and can provide effective and continuing leadership and coordinate and guide the activities of the planning forums along useful and productive channels. It is suggested for this purpose that the State Planning Commission may convene a State Level Conference of all the planning forums which may be attended by the representatives of the forums as well as the representatives of the district and block level development agencies. The required expenditure can be met from the grant of the Central Government which is prepared to provide funds upto Rs. 15,000 for organising regional conferences. Such conferences must be held regularly once in two or three years with the following broad objectives :

1. A critical examination and evaluation of the activities so far undertaken by the planning forums ;
2. Identification of the activities, particularly pertaining to research surveys, to be undertaken by each of the planning forums in accordance with the needs of the State Planning Commission ;
3. Organisation of workshops on research techniques for the representatives of the planning forums and of the district and block developmental agencies ;
4. Exploration of the ways and means of establishing close and effective cooperation between the forums and the development agencies on a continuing basis :
5. Avoidance of duplication of work among the various forums ;
6. Publication of a News Bulletin to serve as a medium of communication and exchange of ideas among the planning Forums.

Realisation of the above objectives is bound to instil fresh and renewed vigour and provide a feeling of genuine and purposeful participation in the adventure of the social and economic transformation of the society among the members of the planning forums and thereby make them effective instruments of the dynamics of social and economic progress. □

The planning Forums have become the intellectual catchment area of the colleges ; they have not only opened up new frontiers of knowledge for students but given them new advenues of service. They have brought into clear focus the importance of planned development and enlightened the students and the faculty on the planning processes and strategies and their successes and shortcomings.

A Review

Planning for Futureless Economy

Bipin Behari
Joint Director
Planning Commission

ALFRED MARSHALL has stated that "the economist needs imagination especially in order that he may develop his ideals. But most of all he needs caution and reserve in order that his advocacy of ideas may not outrun his grasp of the future". Professor P.R. Brahmanand is a senior economist of India who has earned kudos from different parts of the globe. His latest book "*Planning For A Futureless Economy*" is however a different dessert. In this work, the author has shown plenty of imagination but the same cannot be said of caution and reserve. His love for acronyms has taken better part of his judgement ; the Narcisus in him has overwhelmed the Zeus.

Professor P. R. Brahmanand has successfully shown that the generally accepted objectives of the planning process have failed in India. Judging the performance of Indian planning on ten counts, the Professor has adduced statistical evidence to prove the futility of planing techniue in solving the national problems. He has shown that the accelerated increase in growth rates and supplies of essential consumption goods, improvements in employability—state and distribution of real income, maintenance of price stability and such other objectives of planning have not been achieved in India. The Planning Commission has failed to correctly assess the quantum of unemployment and suggest remedial measures. Therefore he states that " the Employment Chapter in the Draft Plan is the weakest portion of the entire Document. It raises more questions than what it has solved" (page 56). Emphasis on feasibility rather than accelerated high growth-rate, adoption of labour intensive projects instead of setting up of Mahalanobisian basic industries and inbuilt inflationary potential of the order of 14 to 22 per cent per year, according to Brahmanand, contradict the objectives and claims made in the Draft Plan. Empirical support for the strategy recommended for eradicating unemployment and under-employment has been very thin; in fact, all the measures contemplated by the Planning Commission, according to the author, "appeared to augment rural unemployment". Technical coefficients assumed for the econometric models based on the input-output tables for 1968-69 have been faulty ; in the note on allocation of capacity in the sugar industry which attempted an exercise in relative advantages of alternative technologies, the Commission has made "a serious error, which even elementary students in economics may not commit" (page 56). The inclusion of various industrial programmes seems inconsistent with the Commission' advocacy for labour-intensive projects. On such considerations, Professor Brahmanand thinks that the Planning Commission has "misled the political leaders ; it has promised what it cannot accomplish. And has made the futureless promising" (page 60). In another context, he stated, "Members of the Planning Commission may come and go but since the technicians are the same, one should not be surprised if the methodology also remains the same". (page 38). Such invectives in a serious analytical study leaves the reviewer flabbergasted.

Professor Brahmanand has prescribed three important remedies for the deep-rooted Indian economic malaise. His prescriptions are : HOPERASHMI, FULLMANGAL, and extended wage-goods strategy of development. Hoperashmi stands for Halting Our Population Explosion Roughly At Seven Hundred Million and Fullmangal for Five per cent Upper Linear Limit on Money's Annual Growth Rate As per Law. Even on a superficial examination of these suggestions, one could decide for oneself whether they are worth the salt. The author thinks that the essential requirement for improving the lot of the people lies in a comprehensive population control policy decision. By 2000 AD, the Indian population is expected to reach a level of 1,000 million which would wipe out all the gains of economic progress. In order to restrict this progress of denudation, it is necessary to halt population by 1980 to 700 million limit. For this purpose, he has suggested a 15-point strategy which shows that the doctor is suffering from a disease worse than what he is attempting to cure ! This strategy involves a plan outlay of Rs. 2,000 crore per annum for the next 15 years wherein each village could have a population control clinic with facilities for abortion, supply of contraceptives, and post operative nursing fcilities after spending Rs. 20,000 per annum. Every fresh couple has to be assured of guaranteed employment at a minimum income of Rs. 3,600 per year for a child, if the couple undertook not to have another child. A group of every five villages should be equipped with a hostel for maintaining old couples; property rights over land and other property; as well as promotions in the private and public sectors should according to Professor Brahmanand, be limited only to those who had only two children. To crown all these, there should be compulsory sterilisation after 1980 of every couple who has more than two children. These are the suggestions on which the Professor pins his faith and consider them practical and necessary for the success of his new development strategy. Leave aside the huge outlay for such a programme, one wonders whether Professor Brahmanand needs a greater dose of imagination, or of caution and reserve in view of what happened in our country in recent years.

(Contd. on page 35)

Planning for a futureless economy : A critique of the 6th Plan and Development Strategy, *Prof. P. R. Brahmanand, Himalaya Publishing House, Bombay, November* 1978, pp xvi + 224, Price Rs. 35.00.

BOOKS

Towards rejuvenating the old Lion

Britain's Economic Problem : Too few Producers (*second edition*). *Robert Bacon and Walter Eltis*: *The Macmillan Press Ltd., London,* 1978, *pages XV*—255 : *Price not given.*

FROM ALL evidences Britain with her mixed economy and nationalised industries accounting for more than one-tenth of the national product and about one-fifth of total fixed investment has had remarkable experience in managing her manufacturing industry that accounts for about 28 per cent of gross domestic product and services for 45 per cent. The authors of this stimulating book have laboured to demonstrate that all has not been well with Britain since 1974 with overmanning and underproduction in the leading manufacturing sectors (e.g. automobile industry), public services etc. These have contributed to deterioration of the British economy. The book supplies proof to their view points largely shared by many economists and policy-makers, through empirical exercises posited on economic theory.

In the first two chapters the authors are concerned with exploring and demonstrating 'where Britain went wrong' and what were her 'lost opportunities'. The burden of their argument is that British economy has become unviable due to her high non-market expenditure and low investment and the policy of spending excessively on welfare and/or defence without adequate productive investment. The shrinkage of the productive sector to a small size has been further aggravated by inflation, structural unemployment, perpetual balance of payments crisis and dependence on aid. Labour troubles and the tentatives to become a multiracial society are not without their side effects. But let us admit that the British people are brave and it will be many decades before the zoomorphic transformation of lion takes place into a mouse.

According to the analysis as stated in chapter 3, the fundamental problem relates to the fact that since 1961 Britain started to become unwittingly one of the world's high non-market expenditure and low investment economies. This conclusion was reached by the authors evidently not by probing official statistics expressed in constant prices, excluding much of the relative price effect but by recognizing the need for treating the division of the economy into market and non-market sectors rather than in terms of public and private sectors of current parlance in most western countries and also in India. In Britain what had actually happened was that the actual transfer of resources from the market to the non-market sector became very heavy during the last two decades.

The 'First steps towards a solution', as given in chapter five, to the above problems, according to the authors, lie in the direction of vigorously pursuing the strategy of exported growth followed by the use of oil revenues to finance industrialisation. We may recall here that with her abundant resources of coal and the discovery and exploitation of oil and gas in the British sector of the continental shelf under the North Sea, Britain is expected to become, on authoritative forecasts, self-sufficient in energy in 1980 with substantial reduction in oil imports and balance of payment difficulties. The present level of exports of goods and services representing about 30 per cent of GDP offers scope for a leap forward with the assistance of India.

The last two chapters are taken up with an analysis of similar besetting economic problems faced by Canada and USA and also a statement of the underlying economic theory, highlighting the implications for inflation, employment and growth of a fall in the share of output that is marketed. These two analyses are of exceptional merit based on empirical exercises of a high quality. The presentation of the propositions by the authors is clear, straight forward and intensely thought provoking in the field of economic analysis. The last portion giving statistical background and the derivation of charts supplies valuable insights to the profession as it tackles the area of definitions as well. Needless to state, the contents of the book will be appreciated by all those concerned with similar endeavours in India, both in Government and the public, for a more realistic assessment of our economic policies in 1980's.

B. N. Nair

Planning

Planning For Weaker Sections *by Prof. Madhukar V. Namjoshi and Dr. Madhusudan D. Sathe ; published by Centre of Studies in Social Sciences, Pune ; Pages* 275 ; *price Rs.* 55.

THE BOOK has made a timely appearance when India's planning effort is taking a leap forward to reach the grassroot level. It aims at highlighting two aspects of planning (a) planning from below, and (b) planning for weaker sections. As a case-study of planning at Pune district in Maharashtra, it presents an analysis of the dynamics of population growth, land-use, investment potentialities in the different sub-regions of the district. Each sub-region has its unique problems and the policies and priorities vary accordingly.

The study attempts to give a new direction to the efforts aimed at solving problems of social equity but the streaks of imperfection and unrealism are obvious at places. It envisages drastic changes in the prevailing institutional structure in Pune district but it might take ages to come. Our planning cannot afford to wait that long. It has to start playing its role within the existing institutional structure. The authors opine that a master-plan for minor irrigation needs to be prepared at the district level so that local politics at the village level is ruled out. This seems to be an optimistic view because vested interests can operate even at the district level.

Neela Sengupta

Management

"Managerial Economics" *by R. L. Varshney and K. L. Maheshwari. Published by Sultan Chand and Sons New Delhi. Page* 425; *Price Rs.* 17.

PROMOTING A deeper understanding of the functioning of our economic system and operation of economic laws is an aspect of management development that is increasingly being recognised. Training courses designed to foster management development and especially aimed at functioning personnel seek to equip them with the knowledge of application of economic concepts but limited to specific decision-making situations. In the context of increasing professionalisation of management, there is growing and urgent need for an integrated and inter-disciplinary approach in management education. Present publication fulfils an important need in this direction, providing both to the students and practitioners, a compendium of useful concepts and techniques.

This is a revised and enlarged edition of the earlier book on Managerial Economics. Considerable additional material has been incorporated in this ' edition and unlike most earlier publications which are heavily drawn on western experience, the present one includes many cases and problem areas illustrative of the indian situation. The book is divided into 37 chapters spread over eight sections, in addtion a number of Appendices with review questions and practical problems with their solutions.

The scope of managerial economics, for which no standard pattern seems to exist, has been described by the authors as relating to demand analysis and forecast-cost and production analysis, pricing decisions policies and practices, profit and capital management. In the treatment of these topics, the authors with their long experience at Lucknow University have succeeded in presenting a judicious combination of theoretical and operational aspects. The pricing problem, seems to have caught their special fancy in so far as seven chapters have been devoted to this topic alone. Profit and capital management, an area which attracts managers like fish to water have however been relegated to a secondary place in the scheme of the book. This is not to say that some very interesting examples of a popular tool like the break-even analysis has not been discussed to interest the beginner and the more advanced alike. Economic and accounting concepts for management decisions have been carefully analysed and discussed with case situations from Indian industry. Tariff Commission etc. The subtle difference to profitability of investment by the use of alternate methods have been clearly brought out. The latter discussion on linear programming methods and input and output analysis will particularly be useful in situations where optimum allocation of resources is called for.

The authors have spared no pains to present a wide array of concepts and cases. Even so, the volume could do with some further effort at concise narration, if only to improve the readability and make it less manual like. The elaborate examples and problem situations clouding the main argument could have been shifted to suitable appendices or supplementary chapters. Students concerned with public investment decisions, would note the lack of reference to useful decision tools like the sensitivity analysis in considerations of profitablity and external economies. The section on Macro economics has left out important problems like social accounting and income distribution which increasingly figure in public investment decisions. These apart, the present publication is a distinct improvement over earlier similar ones and caters to students and trainers alike.

K. S. V. Sanjeeva Rao

Rural Developments

"Situation of Agriculture, Food and Nutrition in Rural India" *by Ali Mohammad—Concept Publishing Company New Delhi, Price Rs.* 50.

THE BOOK deals with the problems of agriculture, food and nutritional status in rural areas of Uttar Pradesh one of the most densely populated states in India. The study establishes that Eastern U.P. has got favourable natural conditions for growing two to three crops a year. Farming conditions are also satisfactory but water supply is very much uncertain. In comparison to easten U.P., irrigation facilities and per head share of cultivable land is more in Western U.P. The author has also observed that in the field of technological inputs such as tractors, fertilisers, pumping sets, high yielding varieties of seed etc., more progress has been made resulting in regional disparities in the field of yield in food grains.

Field surveys have also been undertaken to analyse the level of nutrition and carrying capacity of agricultural land under the existing level of exploitation of land resources for food production.

The result of the survey undertaken indicates that most of the calorie intake comes from cereal and sugar rather than from foods rich in other nutrients such as proteins, fats, vitamin-A, vitamin of B Group, iron etc. thereby showing that the existing cropping pattern is responsible for mal-nourishment in the rural areas of the State. The study also proves that dietary deficiencies are not only quantitative but qualitative in character. The survey was undertaken on the consumption of food at household level as well as per head per day level.

The author has rightly employed the "Weighment method" in his study of Diet Survey considering the un-suitability of the "Food Balance Sheet" method which has got its own limitations of utility and reliance.

The results of the Dietary Survey identifying different deficiency diseases, appear to be based on mere physical examinations. Clinical investigations have perhaps not been under taken in this context. Therefore, any findings based on the aspect of investigation are liable to suffer from certain limitations.

There are six chapters in the book. Chapter-1 discusses the nature of food problem in general, significance of the study etc. Chapter-2 deals with the sources of variations in agricultural productivity such as soil rating, variation of rainfalls and other geographical background and also the effect of different technological advancement on agricultural productivity such as effect of tractors, fertilizers, high yielding variety

seeds, pumping sets and irrigation. The author has shown that intensified progress has been made in Western U.P. while Eastern U.P. remained neglected.

In Chapter-3, the levels and growth of agricultural productivity for whole of Utter Pradesh at district level has been analysed. The author has shown as to how increase in total production is related to increase in area, and in changing cropping pattern etc.

Growth of population has been compared with growth of food grains production in Chapter-4 to know whether food grain production was higher than population growth. To conduct village level study, a few villages for the central U.P. were taken to find out the actual picture of the problem.

Field enquiries relating to land utilisation and pressure of population at village level were made and analysed in Chapter-5. Study was undertaken to assess : (1) the nutritional status of the village people, (2) agricultural development of the villages. The field work also includes a study undertaken to find out the nutrient available per day, per head and the nature of deficiency diseases prevailing in the area of study.

In Chapter-6, the author has drawn the conclusions and offered suggestions.

The book will be useful for policy makers, planners, and the Government officials concerned with the integrated development of rural areas.

S. Chakrabarty

Village Labour

Village Society And Labour Use
By Biplap Das Gupta and Others,
Oxford University Press, Delhi.
P. 229+*vi—Price Rs.* 40

THE GROWTH potential of each region should be fully developed, but the precise manner in which this goal is achieved and the stages of growth will not be identical. Some regional factors, such as those connected with physical freatures and geographical location cannot be easily altered, but there are others which can be influenced by raising level of education and skill. It is this aspect which makes the study of labour use in a village society of some importance. The author has done well in drawing attention to those aspects of village labour force which need much greater attention in any programme of creating employment potential.

The study is based on 2.000 village studies assembled by the village studies programme at the Institute of Development Studies, Brighton. The main draw back of the data is that it relates to early 1960s. The last ten years have seen good change in village economy particularly with the introduction of high yielding varieties. Secondly with the development of communication, the village today is not such a closed economy as it used to be.

The study is divided into five chapters. The first chapter gives the general idea about the scope of the study, data used for the study and the results arrived at. The second chapter surveys the literature on participation, duration and various alternative uses of labour and also indicates the relationship revealed by correlation matrix. Particular importance has been given to examine the factors which determine specialisation of job and a participation of intermittant worker in work. The third chapter deals with the list of labour utilisation and environmental variables, the statistical techniques employed in quantitative analysis and other methodological issues. The fourth chapter has been devoted to subject the data to principal-component analysis based on various sets of labour utilisation variables corresponding to participation, self-employed agriculturist and non-agriculturist variables. These classifications are then tested by discriminant analysis based on a set of environmental variable. In the final chapter, a typology has been developed of village socio-economic system based on 14 key variables when two contrasting village types A and B exhibit interesting differences in terms of labour utilisation characteristics and discusses the major implications of this typology.

The author has laboured to come to the conclusion that there is close correspondence between the demographic and ecological characteristics of a village and its labour utilisation pattern. With a grasp of above characteristics, it is possible to work out a typology of village job situation based on various alternative uses of village labour force such as work on the family form, hired agriculture work, non-farm activities, jobs outside the village and leisure. The above factors confirm a typology of village based on ecological and environmental characteristics.

The study gives valuable insight into the village labour force. It is well known that Indian village male workers put more hours of work on farm than women. In African village economy, the case is opposite. In Africa, women are more actively involved in agricultural production. In Asia, their degree of involvement is usually relatively low. The overall time spent by male labour in farm and non-farm work of various types covers barely half of a standard working day of eight hours in the case of Africa and about two-third of such day in Asia. The female workers in Africa are much more hard-working and they cover the gap left by male worker by their own hard work.

One major drawback in Asia is that illness makes a heavy demand on an average person's time. This is mainly due to neglect of village economy from the point of view of medical care. Most of the medical care is confined to cities and a villager is forced to shift to the city only in acute conditions. It brings us to the point that to improve agriculture production, it is essential to establish medical facilities in the village. But precaution is better than cure and much can be achieved by improving sanitary conditions of the village.

The study also throws light on the land distribution aspect. It is said that participation is consistantly higher in self-employed village as opposed to hired agriculture labour. This brings us to land reforms. The neglect of land reforms had effected adversely the participation ratio and to improve employment potential it is essential to give utmost emphasis to land reforms. Without land reform it is difficult to create more employment opportunities in the agriculture sector.

Further the present education is also defective as the educated villagers do not want to stay in villages. They usually migrate to cities or the educated villagers prefer to employ hired labour on the farm rather than to take up the work himself. The result is that educationally advanced and more accessible and commercialised villages have low ratio, of participation. Our education system does not impart the dignity of labour. It rather creates a sort of hatred for the physical labour, and makes educated villager unfit for the farm work. This calls for an urgent need to change the education system.

Even with the higher productivity resulting from irrigation facilities and multiple cropping, participation of family labour has gone down. But the demand for hired labour goes up. Thus, overall participation ratio does not improve. At present we are faced with the problem of migration of the villagers to the city in search of livelihood. We are told that the land shortage, low fertility of land, skewed distribution of land and a higher proportion of landless agriculturist are responsible for this phenomena. There again the remedy lies in land reforms. A hired agriculturist hardly thinks of improving the fertility of land.

No doubt the improvement in technology has increased the demand for labour as new varieties have encouraged a shift in the cropping pattern from low labour intensive crops e.g. barley and gram to high labour intensive crops e.g. rice and wheat. But it has also caused a significant increase in the supply of labour partly through the process of polarisation of the poor peasantry and large scale migration of agricultural labourers from other areas. The study concludes that the "increased labour demand should not be equated with demand for more workers; empirical evidence suggests a decline with the introduction of the new technology in the overall participation rate, especially for intermittant worker." In the case of Kota, Rajasthan, there was 75.6 per cent decline in the female participation rate within five years of the introduction of high yielding varieties.

The village economy was considered to be simple at one time. Now it is becoming more and more complex as the introduction of mechanisation in agricultural sector has widened the scope for non-agricultural employment in the village. There are shops which sell fertilizers and other commercial inputs and trade in surplus food-production. Repair workshops are mushrooming in areas known for large scale application of farm machinery. Any new plan for the creation of raw jobs must take into account the factors brought out by this study. The author has done a good service by providing an analysis of labour use structure and this study is of considerable use.

Rabindra Nath

(*Continued from page* 30)

Planing for Futureless Economy

Fullmangal is a policy measure as a result of which Professor Brahmanand hopes to control inflationary pressure in the economy. Under this proposal wishes to "regulate the growth of money supply at about the same average at which output and supply of wage-goods are growing". (page 176). The recommendations made under Fulmangal stipulated that the rate of growth of the proportion of money used as liquid-money would be limited by 1 aw to 5 per cent. Under conditions of fluctuating rates of growth of the economy because of uncertainties beyond human and institutional controls, the restricted elasticity of the money supply may even paralyse the economy. It is already known that the Reserve Bank as well as other financial institutions have to devote considerable time evolving suitable rules to meet the seasonal, regional and sectoral requirements of liquid money, yet it has been difficult to satisfy all the concerned. A general fiat will not only be unpractical, it would also fail to meet the need of the economy.

The alternative strategy of Professor suggested under the extended wage-goods approach rests on programming their growth "at a substantially higher rate than population to absorb openly disguisedly unemployed into the production process". (page 176). The author has been working on it since 1956. But details of the approach either with regard to the identification of the items to be included in this category, or of the supporting policy measures have not so far been concreatised. Author's attempt to indicate the differences of his strategy with that of the Revised Minimum Needs Programme included in the Draft Plan could have highlighted its special features. But he has not done so. On the other hand, the suggestion that the outlays on defence, law and order, tax collection, and on political and administrative procedures are non-productive and non-basic which should be eliminated (or greatly reduced) to make the extended wage-goods strategy a success should be taken with much caution. A precondition for its success is a high level of "moral and ethical code in society, the convention of discipline and norms in functioning of the political process (page 185). Such an ideal condition may have existed only in the state prior to man committing the Original Sin. Assumptions relating to human nature have radically altered now. The pre-conditions of the extended wage-goods strategy suggested by Professor Brahmanand are not only nebulous, but too idealistic.

Having completed reading the book several times, the reviewer has been baffled by the prognosis of the author. In spite of several brilliant flashes of technica. analysis, the author seems to be lost in the world of fantasy, romanticism and is concerted soliloques. When the reviewer comes to the end, he wonders as to the reason for such a great hurry in bringing out such a highly undigested and amateurish study from such a profound economist ! □

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Development Notes

HMT (1) ' s big breakthrough

HMT INTERNATIONAL (1) a subsidiary of the Hindustan Machine Tools Ltd. to handle the exports of HMT products and services, has netted in Rs. 8 crore the year against a mere Rs. 2.5 crores two years ago.

A Rs. 1.8 crore contract for providing technical services to a factory in Beghdad is the latest deal.

HMT (I)'s recent arrangement with Kenya, Algeria, Negeria, Iran, Sri Lanka and Nepal, offering a variety of project services, total nearly Rs. 80 crore.

Among the projects being set up in other countries is a Rs. 4-crore machine tools factory at Kenya, a joint venture with the Kenyan Government.

Machinery and other products are being shipped for setting up a Rs. 11-crore factory in Algeria for producing gas metres, gas regulators and water metres. The contract includes the purchase of materials, supply, and erection besides the training of the personnel needed.

HMT (I) recently entered into a service contract for Rs. 0.6 crore with a state-owned Machinery Manufacturing Company in Algeria. Ten HMT experts are to be sent there to build up the productivity of this factory.

The Nigerian Govenment has signed a memorandum with HMT (I) for setting up a machine tool complex with Indian know-how. Work on the project estimated to cost Rs. 52 crore is expected to start by the middle of 1979.

Setting up of a polytechnic, a training centre and a common facility centre for an industrial estate in Nepal totally costing Rs. 8 crore had been agreed upon.

As far as product orders are concerned, Indonesia recently placed an order for machine tools worth Rs. 3 crore. The first breakthrough in the South Korean market was made by securing an order for machine tools worth Rs. 25 crore.

A number of trained technicians and skilled workers are also out in several countries.

HMT (I) strength is derived from its parent company, HMT, which is one among the world's 10 largest machine tool houses. The HMT's work force of 22,000 people, spread over in nine factories, has generated a vast reservoir of first hand experience in executing start to finish projects in a developing country environment.

Per Capita Income Up

THE NATIONAL income registered on increase of 7.4 per cent in 1977-78 over the previous year. The net national income stood at Rs. 43395 crore as against Rs. 40395 crore in the previous year.

The per capita income during 1977-78 at 1970-71 prices, stands at Rs. 690 as against Rs. 656 in 1976-77, indicating an increase of 5.2 per cent. The increase during 1977-78 is more than three times the average increase of 1.47 per cent during the last 28 years.

The remarkable increase in growth rate has been mainly due to the large increase in foodgrain production from 111.2 million tonnes in 1976-77 to 125.6 million tonnes in 1977-78. In addition to other sectors, banking and insurance registered a growth of 5.8 per cent and public administration, 5.7 per cent. □

Indian Railways Achievements

The original estimate of a surplus of Rs. 32.5 crore by the end of the financial year 1977-78 has now been revised and the new projected surplus is Rs. 89 crore. For the second year in succession of surplus of Rs. 65 crore has been protected for the current financial year, once again without any increase in freight and fare.

The first double decker train in the country, raising the passenger carrying capacity from 90 to 148 in each coach, was run from Bombay to Pune on 12th April. The Railways have given concessions to the second class passengers in the form of reduced sleeper and reservation charges, reduction in surcharge on superfast trains etc. Packets of 'Janata Khana' priced at Re 1/- per packet has been arranged.

In this connection track circuiting has been completed at 70 stations by March 31, 1978 to ensure safety. Beginning with hardly 33 kms of track in 1853, the Railways have now grown into a vast and complex undertaking stretching to about 61,000 route kilometres or over a lakh track kilometres, and employing more than 17 lakh men and women. The degree of indigenisation has increased to a very great extent after Independence. In 1947, the Railways' dependence on imports was of the order of 60 per cent. Now it has been brought down to mere 7 per cent. The three production units on the railways not only achieved a greater degree of self-sufficiency, but also been exporting our equipment, as well as expertise, to several developing countries.

HOC Performs Well

Hindustan Organic Chemicals Limited, a public sector undertaking has maintained the upward trend in its production and sales records. For the first quarter ended June 1978, its gross production was over 17,000 tonnes, registering an increase of 31 per cent over the corresponding period of the previous year (12,962 crore.

HOC also recorded an increase of nearly 14 per cent in its sales during the first quarter of the current year valued at Rs. 5.65 crore compared to its corresponding period of last year which was Rs. 4.96 crore.

In tune with its avowed policy of holding the price line, HOC will be absorbing all the additional costs in its manufacturing operations by way of increases in excise, electricity and wages thus benefitting its innumerable consumers, especially in the small scale sector.

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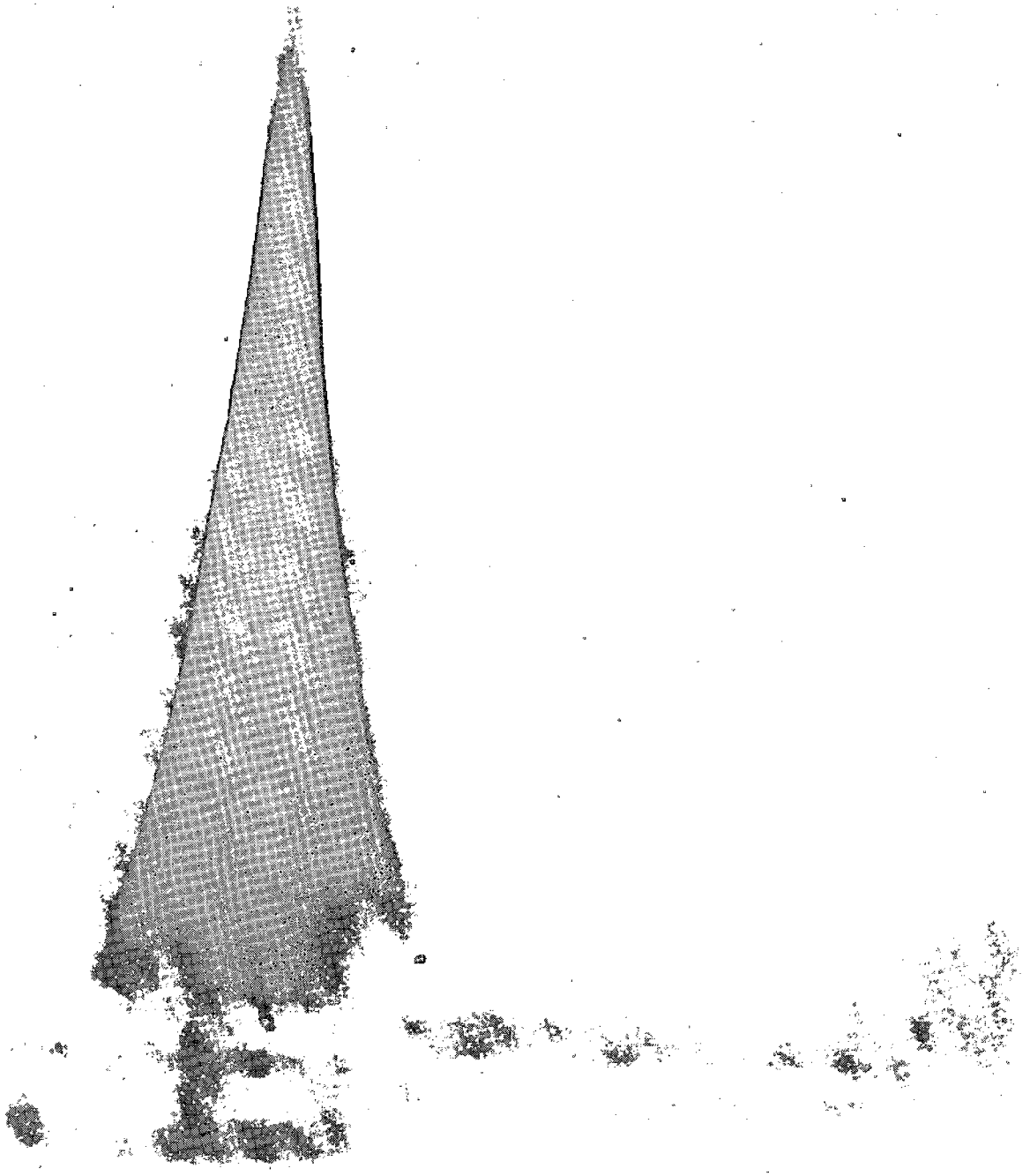

ENERGY MANAGEMENT

POPULATION PROBLEM IN THIRD WORLD

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Editorial

Profitability in Public Enterprises

THE PARLIAMENTARY Committee on Public Undertaking is reported to have expressed surprise at the appointment of an officer on special duty without any specific job assigned to him, resulting in an "avoidable expenditure of about Rs. 1.8 lakh". This is perhaps only a symptom of the great malady which is steadily sapping the vitality of the public enterprises, intended to assume control of the commanding heights of the economy.

The total investment in various public sector undertakings makes a neat total of Rs. 15,000 crore but it has yielded a loss of 14.36 crore in 1977-78. The failure of the public enterprises, by and large, to earn profit has attracted wide attention and adverse criticism. It has been reasonably argued that better performance by them would have wiped out the huge budgetary deficit and consequent necessity for imposing the galling taxes on articles for daily consumption by the people. The public sector managers have surely failed inspite of the advantages they enjoy on several counts. On account of Government ownership and privileges accruing therefrom the public sectors can raise funds more easily than their counter-parts in the private sectors. Some of them have a monopolistic position with a captive market for the goods manufactured by them. In a way they have greater freedom to expand, diversify, modernise and innovate. Yet the public enterprises failed to play the expected role of providers of resources and goods badly needed by the economy. As catalytic agents for the transformation of our aspirations for economic development, they could not reach the level expected although their contribution to make the country the tenth leading industrial nation can hardly be overestimated.

The blame naturally is laid on the shoulders of the public sector managers. They have bungled and blundered, scattering to the winds the advantages they possessed. In some cases their selections to the topmost positions have been questioned. For inexplicable reasons some of them opted for public sector jobs even though their pay and perquisites in private sector by far exceeded the maximum the former could afford to pay. As a rule it is now held that a public sector managers ability will be judged by his capacity to earn profit. A well-managed enterprise means a profit-making body. The compelling need of the hour is to boost the profit performance in public undertakings.

In view of this emerging situation it is time for the planners to consider whether the public sector managers should persue other socially important and desirable objectives like performance of developmental tasks and service orientation. As the economic objective will ultimately predominate, it is high time to underline that the public sector enterprises, as trading and manufacturing bodies, should not think in terms of social benefits. There is no need to reduce the price of manufactured goods unless warranted by the cost of production. Developmental agencies may be financed independently to give shape to socially desirable objectives. At the same time maximum freedom has to be guaranteed to the public sector managers keeping in view the constraints of political interference, bureaucratic control, administrative pressures and parliamentary accountability which are alleged to have affected their style of functioning.

ENERGY MANAGEMENT

TOGETHER WITH rural development and appropriate technology, energy is clearly the 'in' subject today.

In fact it is industry which, being by far the largest consumer of commercial energy, must devote the greatest attention to the energy problem and it is encouraging that the industrialists have felt the need for discussing it. The views I express however, are my personal ones and not necessarily those of the Planning Commission or the Government.

Reading the background papers, I get the impression that there is an underlying presumption that our energy problem could be solved if : firstly, we were able to choose the proper mix of coal, oil and power in developing our energy sources; secondly, we were able to plan liberally for meeting our demand and thirdly we were able to implement our projects and operate our power system more efficiently. I wish I could share this view because if it were so the task, difficult though it is, would be relatively less formidable. Learning from our past mistakes, our techniques for estimating the quality and quantum of power demand are being steadily refind, as are our models for choosing the optimal fuel mix. Although, there are a few weak spots, the expertise in the country for putting up and operating power systems is improving. If all this could solve our problems I would venture to suggest that after five or at the most ten years the energy problem would be overcome. This is not to suggest that all the useful recommendations made in the paper do not need to be vigorously implemented. Indeed they do and in the short term these must be our primary goals.

Real Problem

I would however point out that the real energy problem facing our country is not only much larger but also much more complex requiring hard decisions at both the State and Central levels, and we do not have too much time to face up to them. What they entail is a basic examination of the profile and technology of our programmes of growth in all the major sectors of the economy—agriculture, industry and transport.

Inaugural address by Shri V. G. Rajadhyaksha Member, Planning Commission at the FICCI Workshop on Energy Management, New Delhi

Let me first of all dispel the popular notion that as a country we are exceptionally well-endowed with large reserves of possible fuels. In absolute terms perhaps 'yes' but in terms of our population and its needs emphatically 'no'. Take coal, our largest fossil fuel resource. Going to lower depths and exploiting narrower seams than we have so far been doing our reserves of coal are estimated at 1,10,000 million tonnes. Even at a modest growth rate of five to six per cent if our energy policy continues unchanged, this coal will last for about 75 years. If however, we get to growth rates of 10 per cent, which many developing countries have achieved, the reserves would last for about 50 years.

Another way to look at the problem is to see the difference between countries of comparable size and population and ourselves. USSR has 36 times our per capita reserves of coal, USA ten times and China three times. Our present estimated oil and gas reserves are only 1/10th of the USA's, 1/26th of the

V. G. Rajadhyaksha

Member, Planning Commission

USSR's and 1/7th of China's. No doubt, as exploration proceeds, we shall find more but, as of today, we have taken the only sensible decision possible, namely that our gas reserves are so precious that they will be used as a feed stock for chemical plants and not as a fuel as is the case in many parts of the world.

We have to come to terms very quickly with the fact that the per capita consumption of commercial energy mainly coal, petroleum and power is today approximately 57 times higher in the USA and 26 times higher in the USSR than in India whereas our total fossil fuel reserves, the principal source of commercial energy (excluding hydel and nuclear), are only 1/13 and 1/11 as much respectively. A second point to be borne in mind is that roughly 50 per cent of our total energy is non-commercial—dung, timebr, crop residues and so on. Our reserves of forests are fast declining with environmental consequences of which we are all aware.

Attempts to save our forests and dung by replacing them with commercial energy sources like coal and kerosene, would not only pose difficult financial, administrative and logistical problems but would bring the energy crisis even nearer. What then are the conclusions we must draw from all this? To my mind, they all point the same way—that we cannot blindly follow the developed world's model of economic growth if it also means accepting its pattern of energy demand.

There are many people who argue that by the year 2000 we shall make a breakthrough either in developing fast breeder reactors based on thorium or what, is even less likely in controlled nuclear fusion, showing us the vista of limitless energy. I am sure, we all hope that this will happen but would it be wise for us to bank on it, and given our current experience of nuclear power, are we certain that we can handle its environmental hazards? We must also remember that with our present technology, the most economic route to the production of a range of vital organic compounds such as fertilizers, drugs and pesticides are fossil fuels and we shall increasingly have to conserve our fossil fuels as raw materials for chemicals. We have already decided that after gas our next option as a feedstock for fertilizer plants will be coal and not naptha or crude oil.

Model of Economic Growth

Is the model of economic growth that we have been following so far consistent with the constraints on energy presources that loom ahead of us. The indications are precisely the reverse. Over the past 20 years the rate of consumption of commercial energy is growing twice as fast as our gross demestic product. Within the commercial energy sector the single most important sector, namely power, is growing the fastest. Whereas in 1960-61 the power input in kwh per rupee of added value was 0.13, it went up to 0.31 in 1975-76. We no doubt began with a very low base but what is alarming is that between 1970-75, the figures show that our consumption of power per unit increase of GNP was amongst the highest in the world-over twice that of countries like France Japan, U.K., Pakistan and Brazil and well above countries like Germany and the USA.

You may well ask what do all these macro statistical figures have to do with the hard matter of fact world that we are living in today? Let me give you one implication in terms we all understand namely money. During the Fourth Plan, power took about 15 per cent of the public sector outlay; in the Fifth Plan, it started of at 17 per cent and ended at 18.5 per cent and in the Draft Plan 1978—83, it has started of at 23 per cent. When you consider that the public sector investment is estimated to be about Rs. 70,000 crore at 1977-78 prices, we shall be spending proportionally nearly Rs. 3.500 crore more on power than in the Fifth Plan. This means less for other sectors, both public and private, including industries agriculture, transport and communications—in short, lower targets in these sectors and lower rates of growth. In many of our discussions of the State Plans, the disproportionately large outlay on power is a cause of concern not only to the Planning Commission but especially to State Governments who have many other equally important developmental objectives set before them but which get pre-empted by the demands of the so-called core sectors, namely power and irrigation.

Why is this happenig? There is no doubt that agriculture with the growing emphasis on rural electrification is absorbing power faster than other sectors. However, even for transport and industry, the consumption of power per unit of aded value has almost doubled in 1975-76 as compared to 1960-61. Let us take industry, the area of the most direct concern to this audience and by far the largest consumer of power. Power consumption is estimated to have risen from 0.47 kwh/unit of added value in 1960-61 to 0.84 in 1975-76. Can one argue that all that we are doing is catching up with the rest of the world? I am afraid, we have not only caught up but we are forging ahead. The power consumption per unit of added value in 1971 in India was over twice that of the U.S., France, U.K. and 70 to 80 per cent higher than in the USSR and Italy. While this is partly due to the fact that compared to these countries we may have a somewhat higher proportion of power intensive and heavy industries in the total industrial mix, there is also no doubt that in many industries like steel, paper, cement etc. our consumption of power per unit of production is higher than the rest of the world. This is due to a variety of reasons not to the least of which is slack energy management fostered by the low price of power, protected markets and so on.

I hope that these figures will highlight the vital importance of looking very closely at the energy input the way we plan our economic growth. Let me hasten to say once again that all the energy conservation measures referred to in the background paper are very important. They are clearly the first step in any energy management plan and must be pursued actively. There is however no dearth of data to suggest that energy consciousness has yet to become a part of the ethos of Indian industry regardless of the lip service we all pay to the concept. Except in a few energy intensive industries such as non-ferrous metals, caustic soda, mini-steel and alloy-steel plants, the cost of energy is sufficiently insignificant to take it out of the class of inputs which cost conscious managers really bother about.

Energy Conservation

The question we have to address ourselves to is—how does one create the requisite degree of awareness about the compelling need for energy conservation in a free society? It is clearly not practicable to achieve this purpose through regulatory or legislative measures and we are left with only economic levers. One such lever is to selectively raise energy prices to levels which begin to make a significant dent on margins. This would result in the more efficient energy users surviving and prospering while the rest will either be forced to improve or fall by the wayside. The stimulus that the OPEC price rise in 1973 gave to energy conservation and recovery measures in the world as a whole is a clear pointer to the

impact of such a measure. A second lever is to provide incentives for such capital investment as is required to encourage new ways of conserving energy—cogeneration, adoption of the total energy concepts in plant design and so on—an area in which countries like West Germany have made significant progress.

There are other equally compelling reasons why, in my view, a substantial hike in prices of fuels as a whole, especially power and coal, and to a lesser extent petroleum products is necessary. At the kind of costs required to produce them today, power and coal are heavily under-priced and as a result large subsidies are being provided by the State which in the long run are no less inflationary than higher prices, if they have to be found, as they are today, through deficit financing. Petroleum products should be priced so as to encourage their substitution by coal or renewable resources.

Inefficiency of Utilities

There is a reference in the paper to the inefficiency of utilities like State Electricity Boards and the coal producing companies. I fully endorse the view that there can be no justification for power utilities to pass on excessively high overheads and inefficiencies in power system operation and construction to the consumer. However, as in the case of fertilizer plants and several other industries where administered prices have been fixed, the general principle enunciated in the Plan of providing for all commercial activities a fair return on capital, based on reasonable norms of efficiency must also be applied to energy producers. The implementation of the Baveja Committee's report on Coal to which reference has been made in the background paper will lead to savings only when the surplus labour is absorbed, a process which is bound to take time. However, as stated earlier, even more important than the much needed resources which these prices will generate for the utility companies is the consciousness that higher energy costs they will bring about amongst consumers, especially industrial consumers, who account for the bulk of the power consumed today.

Efficiency in energy production and more attention to energy saving is however only a partial solution because there are obvious limits to the extent one can go. This brings me then to some of the more basic aspects of the structure of our economic growth. Can we proceed as we are doing or must we look at a structure which, while maintaining our basic objectives of tackling the employment problem, reducing income disparities, and increasing our self-reliance reduces our dependence on energy, especially commercial energy? For instance, can we allow our usage of middle distillates and in particular kerosene and diesel oil to grow at the same pace as in the past? Even by conservative estimates if the current trends continue, it will mean that we shall require over 90 million tonnes of crude by the year 2000 only 20 years with imports ranging from 60 to 70 million tonnes. If crude oil prices continue to rise modestly as has been predicted and exports continue to grow at six per cent per year, by the turn of the century only 20 years from now we shall be spending more than 60 per cent of our export earnings on imports of crude oil as compared to 30 per cent as at present. This is not a situation which we can look upon with equanimity especially as a steep hike in oil prices could bring on a real crisis. While my colleague, Prof. Raj Krishna has questioned the use of tractors on the grounds of labour displacement, I am no less concerned about the effects of a spread of tractorisation on fuel consumption. It is not generally realised that the work animals on the farms of India on traction alone are estimated to generate the equivalent of 40 million H.P. or 30,000 M.W. excluding their potential to generate dung based biogas and fertilizers. This is the equivalent of approximately one million tractors and the fuel bill required to operate these would be colossal. The importance of developing more efficient bullock-carts, ploughs and improved breeds of draught animals cannot thus be underestimated.

Less Energy Intensive Growth

The only conclusion we can come to is that we shall need to look much harder at less energy intensive modes of economic growth and also turn increasingly to non-commercial sources of energy as well as renewable conventional and new energy sources.

For example, we must obviously exploit our hydel resources much more fully—something we have not done adequately in the past. Hydel projects are however financially not very attractive as they have long gestation periods and are highly capital intensive. However, even assuming we do this, hydel power will at best contribute the equivalent of 135 million tonnes of coal by the turn of the century, not nearly enough to solve our problems. This leaves us only three presently known sources of energy which excluding nuclear fusion and breeder reactors can see us through. These are solar energy, biogas and other biomass conversion techniques. Wind, geothermal and tidal energy are unlikely to make a significant contribution to the total energy problem. All these sources based on our current knowledge of technological progress are more applicable to widely dispersed and small units using relatively low levels of power intensity rather than to large power intensive consumers.

The various applications of these forms of renewable energy are well known for example, cooking, pumping water, drying of grain and possibly generating small quantities of power for lighting and running light industry.

I would be pertinent to point out at this stage that there has been considerable criticism of Government's policy to decentralise industry and increase the range of products reserved for the small cottage and handloom sector. This criticism is based on the belief that although this policy may increase employment, it may also increase costs due to the loss of economies of scale. However, one major advantage of this policy which has been insufficiently recognised is the fact that this form of production is generally for more human and animal energy intensive—much less dependent on conventional commercial energy inputs and generally better suited to utilising the kind of decentralised low quality energy, that the renewable energy sources, to which I have referred, can gene-

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rate, I would, therefore, pose the question—whether when commercial energy prices are raised to reflect their true economic costs, centralised production in many sectors, especially a wide range of mass consumer goods which relay much more on energy intensive production and transport systems, are necessarily going to be more economic. I would go even further. If simple logic shows that the energy crisis will overtake us if we do not do something drastics about bringing down the proportion of commercial energy input into our economic activity as a whole, then it must become a part of policy to make energy intensive options increasingly uneconomic. I would however not wish to be misunderstood. There are a number of activities which are essential and in which large scale energy intensive centralised units e.g., steel plants, oil refineries, cement factories etc., do represent the optimal route from the energy conservation point of view also and obviously 'small is beautiful' has many limits. But for each industry a thorough study is essential before we come to a decision. In our 1978-83 Plan it will be observed that there is a significant gap in certain sectors between local supply and demand. A moment's examination will show that these gaps are in products which have a disproportionately large energy content, zinc, copper, aluminium, alloy steels and so on. This is not accidental.

I am not suggested for a moment that there are not immense technological and organisational problems to solve in moving to a disaggregated economy operating increasingly on renewable energy resources in which I include animal and human energy. But fortunately unlike many parts of the world, which have already got locked into highly commercial energy intensive systems, we still have technological options. We also have an unusually high incidence of sunshine, water resources, and much land on which to absorb them. There is also impressive evidence to suggest that a breakthrough in producing economically viable decentralised energy sources based on solar energy and bio-mass may be a lot nearer than say a breakthrough in fusion energy.

Time to Readjust

The time at our disposal to readjust to the realities of the energy problem is probably just enough to make this transition without getting into a crisis. We have no time to lose. Fortunately, in some sectors financial pressures are helping us along this path. Take for instance rural electrification in remote and scattered villages in States like Rajasthan and Madhya Pradesh. The true incremental commercial cost of taking power from large central power stations to remote, sparsely populated villages and maintaining these systems will probably, at a guess, be at last Re. 1.00 per unit, a price which no Government of State Electricity Board could possibly charge its consumers in such areas. Simple and sturdy solar energy or bio-gased devices while presently costly may soon prove to be a more economic option. This is one of the areas which the High-level Committee on Power will analyse in some depth.

There is also no doubt that our earlier concepts of progressively replacing firewood as a fuel in the rural areas by coal or petroleum products will need to be re-examined. There is just not enough crude oil or coal around to do so. The only practicable course is really intensive social and farm forestry, properly organised and scientifically managed. The stress on timber conservation and forestry development is not only necessary for promoting population-free energy sources but the resulting increasing forest cover may do much to bring back the ecological balance we are in danger of losing, Other options like quick growing shrubs and algae are yet to be fully developed but the prospects are promising more efficient bullock-carts, ploughs and improved much nearer than fusion.

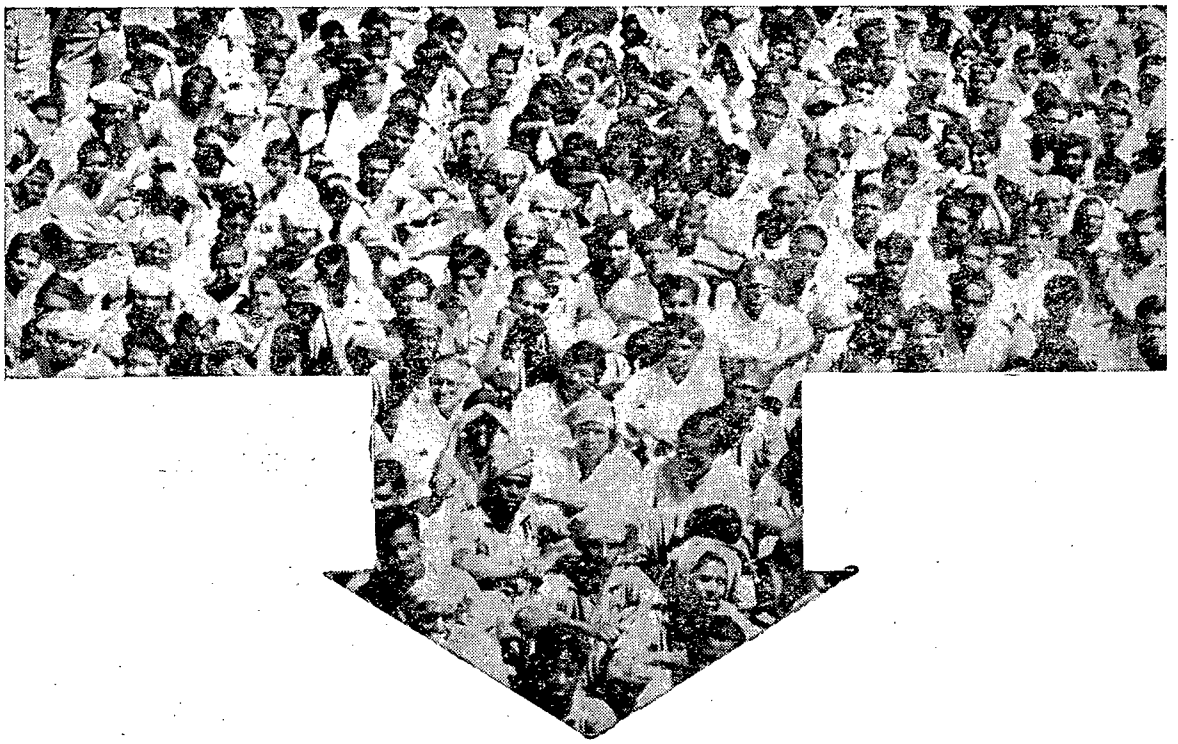
The third major benefit of this strategy would be on the environment. The frightening impact of the current pattern of industrialisation and urban development policies on the quality of life and environment of cities like Calcutta, Bombay and increasingly all the larger cities for the lower income groups in particular requires no elaboration. These cities seem to be turning into eye sores before our very eyes besides necessitating the growth of highly energy intensive infra-structural inputs. Even if the obvious degradation to which we are forcing out fellow human beings is not enough to arouse our conscience at least the energy implications of the growth of metropolitan cities could be a decisive force in making us re-think our whole approach to urban development. Should we not take positive measures, both legislative and fiscal, to stop and reverse the growth of large cities and stimulate the growth of our smaller towns which must become the focal point of our strategy of integrated rural development.

A challenge

Is all this that I have been saying a prophecy of doom and despair for the large industrial sector? On the contrary, I would say it represents a challenge, in meeting which, the large professionally managed organised sector has an important role to play. The major effort in energy conservation for instance will have to come from the organised sector engaged in industry and transportation because this is where the greatest scope for energy saving lies. But, in addition, the opportunities in the field of new energy sources are immense. Already some forward thinking organisations in places like Ahmedabad are showing the way. Developing the equipment and the systems for moving to a more decentralised, low energy economic system will require the best managerial, research and technological inputs the country can generate. In many cases, the technology involved in these systems is something which only organised industry may be able to do economically like solar cells, storage batteries, solar water pumps, construction materials which consume low inputs of fuel like water-proofed pressed boards, better raw materials for bio-gas plants and so on. The scope is vast and the opportunities for the exercise of ingenuity enormous.

In conclusion, let me briefly summerise what I have tried to convey. Firstly, that our fossil fuel reserves and conventional non-renewable energy sources are not sufficient to last for more than a few decades and that conservation of these resources is a matter requiring immediate national attention. Secondly, that the prospects of abundant commercial energy from sources such as breeder reactors and fusion are far from being developed and may even when developed present unacceptably high environmental hazards and costs.

(*Continued on page* 18)



Population Problem in Third World

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POPULATION statistics reveal that the accretion to world population growth is largely the result of the high growth rate of population in the less developed countries of the world. It is necessary that any development oriented population policy of a developing country must relate the problem of population growth to the social environmental and technological phenomena and the changes that can easily and speedily be brought about in them. This may be done in terms of the country as a whole or on an inter-regional basis within the country. Any transformation in the prevailing pattern on fertility depends on changing the existing values and social customs as also in fostering accelerated economic, medical and educational progress.

It is worth noting that today the world population has increased to more than 3.5 thousand million and is having an annual growth rate of two per cent. Three fourths of this population live in the underdeveloped countries where the rate of increase is twice that of the rich countries. It is estimated that by the year 2000 AD there will be 4 persons living in underdeveloped countries for every one person in the developed world. Surely, this is going to have serious implications for the global distribution of income, utilisation of resources and economic welfare.

Changes in the population pattern within a country also do not take place merely by enforcing some techniques upon the people. Rather, a kind of holistic approach seems to be necessary for intermeshing population policy in the totality of the development plan of the country and with accent on a regional balance in economic development. It is common knowledge that in the kinds of people living in developing countries, demographic issues have not yet been integrated in their conception of life. To most of them, vitalism is dominant and life is sacred. It is not appreciated that any strategy of population policy will serve in a more effective manner only by emphasising upon the people for achieving a better quality of life. For the economic planners, an understanding of the socio-economic determinants of population trends is essential in the formulation of appropriate measures and strategies to raise the levels of living. Thus, while rapid population growth in developing countries is fundamentally brought about by the salutary effects of development on mortality and morbidity, rapid population growth itself affects the development process.

High rates of population growth may reduce the growth rate of per capita income. It may be argued that in capital abundant rich industrial countries, if the demographic increase is faster and the supply curve of labour to the manufacturing sector is more elastic, the rate of rise in productivity will be more rapid. Given the conditions of full employment, if

acute labour scarcity and increasing returns to scale are available in the manufacturing sector, provision of a high growth rate of labour supply either through immigration or through natural increases may lead to a more than proportionate rise in the growth rate of GNP. But then, in the underdeveloped countries, conditions under which this process operates just do not exist.

It is therefore critical for developing countries not only to lower the general mortality rate but also to bring down the current high level of fertility. It is wrong to think that the high level of fertility is linked to specific cultural mores and religious sensitivities and that the behaviour of the people is based on irrational considerations. This is an erroneous view because the factors that influence the behaviour patterns of people of developing countries make it eminently rational to have more children since infant mortality tends to be so high and human life at its beginning so precarious. Naturally, people are motivated to practise responsible parenthood only if there is transformation of the social and economic conditions in which they and their families have to live.

Albert Hirschman and Colin Clark, the two great demographers of the world, suggest that even in underdeveloped nations rapid population growth may stimulate economic development. Hirschman believes that population pressure on living standards leads to counter-pressure. According to him, population pressure poses a challenge to the abilities of communities and it elicits a strong response for accelerating economic development. Colin Clark opines that population growth brings economic hardship to communities living by traditional methods of agriculture. This acts powerfully enough to make these communities change their methods and ways of doing things.

In the ultimate analysis, any policy for solving the population problem must emphasise the primacy of qualitative change to be brought about in the nation's manpower. Unfortunately, however, developing countries have not recognised this crucial aspect. Demographic upsurge has a substantial impact on the demands for housing, education, employment, health and social services. Such demands cannot be met with the existing resources and priorities. We need to appreciate that population increases took place in developed countries after they had adequately developed economically. As such, increase in population facilitated their further development by providing both labour and effective demand that development required.

In the poor countries of today, apart from the absolute ever increasing growth in population, modern medicine has sharply reduced death rates. And this has happened before self-sustaining development could be initiated. In the developed countries, rapid development required labour-saving technology and therefore, inventions have been in this direction. In the poor countries, due to the abundance of labour, the use of labour-intensive technology has aggravated the problem of unemployment and under-employment. The developed countries witnessed a high rate of saving due to the frugality of their rich masses. On the contrary, in the poor countries demonstration effects emanating from the rich countries have resulted in both the capitalistic class and the labour class aspire for higher levels of consumption. This has tended to curtail drastically the savings potential for purposes of their development.

Needless to say, the unfavourable tendencies and trends in population growth need to be offset by rapid technical progress and a high rate of capital accumulation. Since there is relatively less income with an increase in the number of mouths to feed, households are induced to save less and spend a larger portion of their incomes on current consumption. Hence a rapid population growth rate will cause private savings to fall. Rapid population growth also increases domestic consumption leading to a decline in the surplus available for export while also increasing the demand for imports. The governments of underdeveloped countries will be compelled to reduce imports of capital goods and curtail their investment programmes and projects.

The contemporary theory of economic growth tells us that increases of labour and capital, unaccompanied by technical progress and improvements in economic organisations, may add to domestic product but not to productivity or to per capita income. The latter is a function of advances in technology and efficiency of the economy, both of which depend on improvements in the quality of factor inputs and not on the accretion of their quantity. Therefore, improvement in the quality of labour and economic organisations should take place through education including scientific research and technical training. And, above all, as health measures will have to increase from day to day, family planning assumes greater importance. As for India, population increases have been from 1.25 per cent in 1950-61 to 2.5 per cent in 1975. An expenditure of over Rs. 500 crore on family planning could avoid only 15 million births during the period 1951-75 while we added 14 millions a year to our population.

Demographic upsurge has substantial impact on the demands for housing, education, employment, health and social services.

In sum, it should be recognised that improvement in conditions of health and sanitation will further lower the death rate, especially the rate of infant mortality and may for a time even tend to raise the birth rate. The objective of stabilising the growth of population over a reasonable period has therefore a key place in the scheme of planned development. The programme of family planning involving intensive education, provision of facilities and advice on the largest scale possible and widespread popular effort in every rural and urban community needs to be given a very high priority. In fact, controlling the rate of growth of population through wider adoption of family planning practices, can serve as an important instrument for improving the distribution of income over the long run. If the income redistributional objective of economic planning is to be achieved, it is essential that these programmes should reach as wide a section of our population as possible. □

Rural Banking :

Some Organisational Problems

Subhash J. Rele

Journalist

WITH THE inaguration of five regional banks on October 2, 1975, at Muradabad and Gorakhpur in Uttar Pradesh, Lavan in Rajasthan, Malda in West Bengal and Bhiwani in Haryana, Indian banking has entered a new era.. The concept or regional rural banks was thought of because the picture regarding the provision of early and soft credit to small farmers was dismal. Moneylenders were charging interest ranging from 30 to 50 per cent. Moreover, the small and margi -nal farmers have been unable to take advantage of modern methods of cultivation due to lack of finance. The rural banks would concentrate on meeting the credit needs of not only the small marginal farmers, but also agricultural labourers and artisans. They would step into areas where district central cooperative banks have proved inadequate. They would get finance from the commercial banks and engage in direct lending to farmers but not to members of cooperative societies, for they have to ensure that the cooperative structure is not weakened. The Working Group on Rural Banks appointed by the Government under the chairmanship of M. Narasimhan identified the various weaknesses of the cooperative credit agencies and the commercial banks, fell that the existing institutions as they are presently structured, would not be able to fill the regional and functional gap in the rural credit institutional system within a reasonable period of time, even with such adaptation, reorganisation and restructuring as may be considered. The Group observed that "in a country of the size and regional diversity as ours, no single pattern, be it commercial banks or cooperative credit, can be expected to meet all the emerging requirements in all areas. A degree of adaptation and improvisation is called for and the range of institutional alternatives widened. It is in this context that we have come to the conclusion that a new type of institution is necessary".

Revolution in Rural Areas

The present Government aims at bringing about revolutionary changes in the rural areas, so as to end rural poverty and unemployment. Banks have become important catalytic agents for promoting employment and income in the rural areas. The first and foremost step that banks took was to make their prsence felt in the rural areas by taking steps to reach banking to the doorsteps of the rural masses. As a result, there was a spectacular increase in the number of rural branches of commercial banks. This phenomenal branch expansion helped in the rapid rise in priority sector advances, especially in the matter of advances to agriculture because the branches do not generally have much scope for giving any type of advances other than priority sector advances.

Banks have adopted an area-based-approach by adopting villages as it has been found that scattered lending makes recovery difficult. Commercial banks are providing both short-term loans and term loans. They are also giving loans to agencies for the supply of production inputs like fertilisers, loans to State Electricity Boards for financing the well energisation programme. Moreover they are financing plantation and other allied agriculture activities such as poultry, fishery, dairy and horticulture.

Very recently the importance of branch expansion on systematic lines by concentrating on unbanked rural areas and by establishing at least one branch in each Community Development Block has been emphasised. Today there are over 24,000 bank branches as compared with only about 8,8000 in 1969. Of these, 8,000 are located in rural areas. Branches cost money for staff and premises and these costs must be justified by the scale of their operations in terms of advances and deposits. According to the last annual report of the Reserve Bank on Currency and Finance rural bank branches which constitute one-third of the total, had mobilised only 8 per cent of all deposits by June 1977 and had provided barely 6 per cent of the total volume of advances. It is now suggested that by the end of March 1979 the nationalised would extend one third of their advances to agriculture, small industries and other neglected sectors or the economy, especially in the rural areas. Banks have been also told to extend term loans to agriculture at interest in the range of 10.5 to 11 per cent.

The Dantwala Committee which was asked to "evaluate the performance of rural banks in the light of objectives for which they were set up" has come to the conclusion that regional rural banks are suited to the purpose of progressively filling up the credit gap and therefore the programme for the establishment of RRBs deserves to be accelerated. It observes that inspite of the handicaps any innovation has to face initially, within a short span of two years, "the RRBs have demonstrated their capability to serve the purpose for which they were established. They have projected their image as a new type of institution catering to the credit needs of a class of borrowers to whom institutional credit was hitherto not available. According to the Committee the most relevant criterion for the selective extension of the RRB system is the state of the cooperative credit structure at the district level. In as many as 182 districts, the DCCBs are weak. The 48 RRBs cover 55 of these districts. To start with, the Committee wants the programme of establishing new RRBs to be implemented in the remaining 127 districts. It further argues that "the superiority of the RRBs as an agency of rural credit over the rural branches of

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commercial banks is derived from its relatively lower cost of operation, its simplicity and low profile, local participation in management, with due safeguards against domination by vested interests, feel and familiarity of the local staff and close association of the district level agricultural and rural development agencies and personnel."

Referring to jurisdiction of the RRBs, the Committee feels that a rural bank should be confined to one district. A district is a well-established administrative entity. The identification of RRB with the local people and their problems may suffer if its jurisdiction becomes unduly large. Confining the jurisdiction to one district will also help it to remain in close contact with the development programmes of the district and with the cooperative and commercial banking institutions operating in that area. The Committee, however, suggests that since the size and the state of economic development of districts vary a great deal, it would be advisable to retain some flexibility in this and other related matters. Normally, one RRB should cover a population of 10 to 15 banks.

Another important recommendation made by the Committee relates to Control and Regulation. The scheme of RRBs is being administered at present through a variety of control mechanism. While the major responsibility of setting up a rural bank is on the sponsoring commercial bank—including the deputation of its officers to man the key posts in the RRB and providing financial support—on many crucial points such as location and licence, the decisions rest with (i) the Steering Committee appointed by the Central Government; (2) the State Government concerned and (3) the RBI. In Committee's view this "system is needlessly cumbrous". As a first step in the process of simplification, it suggests the withdrawal of the Central Government from the operational aspect of the scheme by winding up the Steering Committee. It avers that in the initial stage, since the concept of the RRB was new, a Steering Committee at the central level was necessary to ensure that the Scheme was properly understood and implemented. Now that the scheme is fully operative, there is no longer any need to retain the steering function at the Central Government's level. It further contends that such direction and guidance as the Central Government may like to provide can be done through the instrumentality of the RRB, which in any case is charged with the responsibility of overseeing the functioning of the commercial banks as well as the cooperative credit system.

Problems of Organisation

Not that RRBs do not have any problems. The main problem is one of organisation. Manpower planning, infrastructure and the like are areas of constraint. The suggestion that they should be set up in those areas where adequate infrastructural facilities exist economically sound. In areas where special agencies, namely the SFDA, MFAL and THDA (Tribal and Hill Development Agencies) have already been set up and some favourable climate created, these banks would be in a better position to start functioning. The success would depend on the personnel appointed to run them.

They would have to identify able men in the area and train them to take over responsibility of managing the banks instead of depending on the personnel from urban areas. It is, however, suggested that the training for employees should be organised at the field level training centres of the State Governments so as to enable the staff recruited to have a deep insight into clear appreciation of the rural conditions apart from banking concepts and proceedings. As pointed out by the Estimates Committee as early as 1974, the rural branch expansion programme of banks can not be feasible without a preconceived model of a viable rural office, more decentralised power and authority, structure and viable administrative linkage of these branches with selected centres where expertise and experience are readily available. Neither the concepts of rural banking nor the concessionary rates of interest to priority sector have elements of univiability. Much of the "cost of development" emerges from the extension of urban model into the rural setting marked with avoidable expenses on staff salaries, stationery, travelling expenses and premises

Differential Rate of Interest

It is argued in some circles that credit and refinance should be made available to RRBs either by the Central banking authority or by sponsoring banks at a lower rate of interest. It is pertinent to draw the attention to the conclusions of an official study undertaken in October 1976 to review the working of 20 regional rural banks. The Study found that in the matter of deposit mobilisation, the rural banks, despite having an advantage of giving 1/2 per cent more interest rate than that offered by the other financial institutions, were not able to show more promising trend. The Study highlighted the difficulty which the RRBs face in lending to marginal farmers, small businessmen and traders, landless labourers and rural artisans. This difficulty arose due to divergence in lending rates of the RRBs, cooperatives and commercial banks. At the time of their establishment, cooperative banks' lending rates as well as those of the RRBs and those of public sector banks were presumed to remain in one alignment. It was found that at some places the rates charged by cooperative banks on their lendings were a bit lower than those charged to similar types of customers, by the RRBs. The RRBs lending would have gone up if cooperative societies working in the command area of the RRBs had been ceded to them. In reality this did not happen as the vested interests would not like to divert their hold from the cooperative societies and would not prefer to hand them over to the RRBs.

As a result of this limitation on lending, the Study pointed out that RRBs could not take advantage to multiply their credit on the basis of the deposits collected by them as well as from the sponsored banks and state authorities. The RRBs have been permitted to lend Rs. 1 crore for every Rs. 15 lakh which they raised themselves and the balance of Rs. 85 lakh of deposits came from sponsored banks and States. The view is valid that the constraints imposed on lending of the RRBs is working unfavourably on their viability. □

National Information System for planning

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A NATIONAL Informatic Centre (NIC) is proposed to be set up in New Delhi to coordinate and systematize the information collected at different levels by various departments and agencies so that their effective utilization for planning and decision making can be achived. This centre is supposed to serve as a data bank and provide data processing facility for the various departments of Government of India located in New Delhi. This note is an attempt to outline certain aspects involved in design of such an information system. which need to be elaborately debated before finalisation of NIC.

The Need

The necessity for reliable and timely information for decision making becomes increasingly important as an orgnization grows. Many large scale private organizations have successfully developed business information system to plan, monitor and control their activities and have increased their profits many folds. However, for the Governmental administration, the situation is very different. The concepts of modern management information system need to be considered in an entirely different perspective as the task of the central departments are very complex. Apart from suggesting appropriate solutions to the problems in planning, monitoring, allocation, control and coordination of the departmental programmes, they have to consider the spatial distribution of these programmes. The implementation of these programmes involve a number of department, regional units and local bodies, project administration etc.,

Planning

Planning information systems and services involves, at the minimum, several major activities, identifying the information needs of the potential users of the systems. identifying or predicting the uses to which the information wil be put, and designing systems that can meet the requirements identified.

A planning information system is simply an orgnized flow of information from sources to users. Information systems are built for two general reasons (i) to aid decision making and (ii) to aid research. Decision making focuses on choosing optimum courses of action, research in contrast, attempts to find new insights into natural and man-made processes.

Effective approaches for planning require proper information. While information is collected by various agencies, it is in a form which can be used only after extensive manipulation. Such operations result in considerable time loss and thus declerate planning process at all levels of decision making. The proposal for a NIC is very timely. The NIC can play a vital role in implementing the multi-level planning process that had been envisaged in the first five year plan.

The volume of data collected by various organizations in our country is unbelievable. Many of the Government departments prepare various statistics which are generally sent at a higher level for collection and processing.

Data and information

Despite this, it is common of most of the research reports (and sometime Governmental reports) to mention that due to severe data limitation they had to resort to primary data colloction. This is generally the case because either the departments have not collected the right information or that the required information may be collected by some other departmental agencies about which not many are familiar.

This brings us to two aspects for discussion. First is the distinction between 'data' and 'information'; and the second is the coordination of organisation in the Governmental administration. 'Information' can be defined as data necessary for planning purposes (which will include plan formulation, implementation, monitoring and control). The rest is data which for all practical purposes are useless. So instead of collecting all the data that are possible, identification of essential information should be the first priority. In S. Chakravarty's words, "information can be collected only at a cost. Since information is widely dispersed over the economy the costs of collecting information can in some cases be so high that the value of information, net of costs can be negative".

In our context this task may not be very easy because the data collection agency (the Census or National Sample Survey) and the users are different. Attempts are made by the former to call a meeting of the users prior to the commencement of their surveys. Nevertheless, lack of information is a frequently cited problem in the Government reports. The problem is more relevant to the 'age' of the information rather than the type of information. The lag between data collection and publication of reports is so severe that in most of the cases the information is out-dated The case in point here is the agricultural census undertaken by many states every five years. In most of the states it takes more than five years to publish the report after data collection. With the dynamic nature of agricultural sector in many part of the country, it is imperative that information be made available within a year or two at the most. The advent of high speed digital computer has made this possible. In fact the general census tables for 1971 were available after just two years. It is not only important to collect the right kind of information but it is also important to make it available to users as early as possible.

Multiple Agencies

The second problem of co-ordination, of organizations in the governmental administration has often been talked about. The 'departmentalism' in public offices is so strong that it is difficult for two departments to coordinate their activities. Lack of such co-ordination amongst the public works department, telephones department and the electric companies is evident in our metropolitan cities; with many of the major roads perpetually in excavated conditions. This problem is compounded by the fact that agencies with overlapping jurisdictions and functions have grown like mushroom, espcially in the urban areas. The classic case is of Delhi. We have DMG, NDMC, DDA and Delhi administration of union territory. The situation is not very different in Calcutta, Bombay and Madras. The occurence of the same phenomena at the State or National level complicates the issue to the extent that it is next to impossible to be clear about role of every agency. The Governmental organisation has grown so much that Prof. Vakil asserts that nearly 60 per cent of funds allocated for rural development is used just to pay salaries to staff. With a proper information system design one can reduce the number of multiple agencies and curb the expansion of bureaucracy.

NIC and Planning

The major aspect of design of Planning information system is that how far will it be able to aid the 'decentralized' planning approach advocated all along in Indian Planning. Under the existing system, information collected at vaillage level is processed at Taluka (Tehsil) level and only aggregates are sent to the district level and so on until it comes to the Centre, where the information available is in such an aggregate form that its usefulness is minimal. It is unclear at this stage regarding the 'level' of information which will be stored in the data bank of NIC. It certainly cannot be settlement level information as the storage space requirement will be preposterous. On the other hand if it plans to store the aggregate form of the information available at present to the Central Government administration, it will serve little purpose as far as plan formluations are concerned.

Planning in India has been highly centralized, despite intention of incorporating the 'Grass Roots' planning approach. Neither the formulation of the plan for its implementation involves any multi-level dialogue, other than political pressures from all possible quarters. Micro-level planning, area planning, block planning, these are the phrases currently used by politicians, planners and the like. It is this author's contention that a national information system can be designed in a manner which will encourage micro-level planning and bring about co-ordination between central and local plans on one hand and sectoral and spatial planning on the other hand.

It will be essential to devise a system of information flows, and delegation of responsibilities coupled with suitable provisions for the financial aspects at various levels. Unless the domain of decision making powers is specified, lot of confusion, duplications and inefficiencies will enter into the system.

With recent advance in Computer Science, an Integrated National Planning information system in India does not seem far-fetched. Many firms have started manfacturing computers of various sizes with indigenous materials. In a few years the costs are likely to be reduced substantially. If centre, state and district are taken as the levels of decision-making for planning purposes, then one can visualize a system of computers at these levels. A micro processor or a mini-computer costing Rs. 20—50 thousands can be placed at a district level. The identified village level information can be stored and processed for district planning.

Many of the states' statistical offices at present have computer facility. The processed information from the district level as well as certain state level information can be stored at these state computer centres. The Central computer at NIC will have to process the state level information of various departments as well store national level informations. One crucial aspect of this hierarchical system will be adequate manpower planning to ensure that proper personnel are available at all levels.

To make the 'decentralized' planning a reality. NIC will have to first identify the relevant information to be collected at various level and establish a hierarchy of processing facilities at various levels so that information is made available without much delay. □

Handloom project gave new life

HANDLOOM industry have given hope and new life to the families of 400 weavers in the Gadag—Betageri area of Dharwal district. The families are enthusiastically looking for bright days in their lives, which they consider are not far off.

Thanks to the handloom development project and the timely initiative of Gadag branch of the State Bank of India. Over 2,000 handlooms and 1600 framed looms have been given to the weavers in the area who gave up the job years ago. Over a decade the small weavers had given up the hope of eking out a decent livelihood from their weaving profession on account of the unhelpful attitude of vested interests and the exploitation of money lenders and big weaving masters.

The financial assistance from the bank and the technical guidance from the handloom development project had given the weavers, a new life. More than 4.50 lakhs worth of modern looms and yarn have been supplied to the needy weavers on credit. Each family is now able to produce 26 to 28 sarees a week and earn an income of Rs. 100 every week. They have a great relief. A job worth noted indeed.

-F.P.O. Dharwal

Employment Wages and Workers

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AN ATTEMPT WOULD be made in this article to study the growth of employment in the organised manufacturing industries sector and the fluctuations in the share of salaries and wages in "income originating" in this sector, as also to examine the movements in the per-worker-wages earned, in real terms. The main idea is to find out if over the last sixteen years (relevant data relating to which are readily available), the income earned by the labour in this modern industrial sector had grown as fast as its employment content, or has recorded a fall in its share. The results arrived at are of topical interest and some analysis has also been made to arrive at important indicators for the organised industrial sector.

Annual Survey of Industries

The main source of data on employment, wages, total emoluments, etc., has been the Annual Survey of Industries, (ASI), conducted by the Central Statistical Organisation, which covers the total factory sector in India. Large, medium and small registered factory units are covered by this survey. Factory units include manufacturing as well as some "servicing" units, such as distribution of electricity, water and gas, cold-storage, sanitary services, motion picture production, laundry and job-dyeing service, etc. but excludes units under the control of the Ministry of Defence, oil storage depots and technical training institutions. However, servicing industries like sanitary services, motion picture production etc., are excluded from the tabulated results in order to conform to international conventions. All units employing 50 or more workers, working with the aid of power, and 100 or more workers working without the aid of power, are completely enumerated in the "census" sector. All units in the electric light and power industry are also included in the census sector. The remaining registered factory units, i.e. units employing 10 to 49 workers, working with power, and units with 20 to 99 workers without power, are covered on a probability sampling basis. Commencing from 1966 ASI, some specified industries in the sample sector are being completely surveyed every year. For example, metal and metal based industries were covered during 1966 and 1967 chemical group in 1968, textile group in 1969 and the remaining industries in 1970. Since 1973-74, the non-census sector factories are covered on a 50 per cent sample basis, so that the entire non-census sector is fully covered in a period of two years. The National Industrial Classification (NIC), 1970, was used for the first time in ASI 1973-74, for classifying the factory units, while earlier the ASI industrial classification was being utilised. Thus, industry-wise aggregates do not bear a one-to-one correspondence with earlier years' results.

ASI was started in 1959 and the latest summary results are available only upto 1975-76. There had not been any survey during 1972-73. Some provisional results for 1976-77 are also available. From 1959 to 1965, the reference period for the ASI was calendar year. Since 1966, the results are based on data collected according to the financial year, (i.e. accounting year of the factory ending between April to March, instead of January to December, as done earlier). However, the broad comparability of the aggregates studies in this article are not affected by this change over from calender to financial year reference period. The basic information is presented in Table I, where "workers" refer to all persons defined as workers under the Factories Act (1948), but excludes all other employees in supervisory, managerial and administrative work. "Total employment" included workers and all other employees engaged in supervisory, managerial, technical, administrative and sales work. "Wages" refer to all remuneration in terms of money paid to workers, more or less regularly including regular bonuses while "total emoluments" consists of salaries, wages, festival and other bonuses to all employees and imputed value of benefits given in kind, but excludes employers' contribution to P.F., Pension, Gratuity etc. Some adjustments have been made in the "total emoluments" figures for earlier years, (as these included employers' contribution figures also) on the basis of separate data available for 1965 and 1966. "Value added" provides a measures of the total contribution made by resources of labour and capital equipment in producing the output, and is obtained by deducting from total value of output, the total value of input and depreciation.

Trends in Employment Growth

The growth trends in employment, earning and total value added are shown in Table II. While total employment had gone up by 82 per cent between 1960 and 1976-77, the corresponding total emoluments went up by 159 per cent, in real terms, over the same period. On the other hand employment of "workers" recorded an increase of 61 per cent, compared to 96 per cent rise in their total wages, in real terms, over

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TABLE I

Employment, Wages, etc, for registered manufacturing industries in India.

Year	Employment (000)		Total wages (Rs. crore)	Total emoluments (Rs. crore).	Total value added (Rs. crore)
	Workers	Total			
1	2	3	4	5	6
1959 . . .	3104	3568	342.36	427.50	892.62
1960 . . .	3x28	3644	387.95	470.42	1017.26
1961 . . .	3340	3729	436.13	525.27	1171.81
1962 . . .	3534	4017	495.33	616.80	1280.56
1963 . . .	3682	4208	543.16	695.28	1460.35
1964 . . .	3866	4521	604.10	820.45	1669.21
1965 . . .	3919	4696	679.85	955.39	1883.42
1966-67 . . .	3921	4750	744.39	1083.03	2045.05
1967-68 . . .	3884	4716	812.51	1204.17	2113.40
1968-69 . . .	3952	4825	878.58	1355.50	2304.65
1969-70 . . .	4103	5031	966.35	1478.21	2776.22
1970-71 . . .	4231	5216	1079.92	1674.34	3149.25
1971-72 . . .	4393	5436	1213.24	18884.55	3437.85
1973-74 . . .	4660	5820	1567.59	2498.74	4632.86
1974-75 . . .	4762	6053	1822.96	3051.67	6081.03
1975-76 . . .	4996	6381	2146.60	3462.96	6386.68
1976-77(P) . .	5211	6649	2270.22	3636.68	7310.71

*1959 to 1964 adjusted for excluding P. F., Pension, Gratuity etc. for the sake of comparability.
(P) Provisional.
NOTE : total emoluments consists of salaries, wages, etc., to all employees.

the same period. Both "wages" and "total emoluments" have been deflated with the help of All India Industrial Workers Consumer Price Index series (with 1960 base). Thus total employment had gone up at a much slower rate than total emoluments at constant prices. Income earned by the "workers" had also increased faster than the growth of employment of workers, but at a comparatively slower rate than total emoluments. Further, employment among non-workers (white-collars, technicians and others), had recorded a faster rate of increase during the period, than among the wage earning "workers" in the factory sector.

Per Capita Annual Wages

Statistics on per capita annual wages, emoluments and value added are furnished in Table III, at current as well as at constant prices, (i.e. in real terms). Corresponding growth trends are presented in Table IV. At current, i.e. prevailing prices, per capita average wages went up by 262 per cent during 1960 and 1976-77, while the increase had been 324 per cent and 294 per cent respectively, in per capita total emoluments and value added per person, over the same period at the prevailing prices. However, it would be interesting to find out how much of these sharp increases in these average values were due to price factor and what had been the real increase in these growth indicators. The "wages" component and "total earnings" component, have been deflated with the help of All India Industrial Workers' Consumer Price Index numbers, with 1960 as base, and the value added has been deflated by the implicit income deflator of the registered manufacturing sector from official national accounts statistics. In real terms, per worker average annual wages had gone up by only 21 per cent, during 1960 and 1976-77, while the corresponding growth in average annual emoluments for all employed persons, recorded an increase of 42 per cent, and per person (employed) value added went up by 44 per cent, during the same period, (both at comparable constant prices). Thus, though total emoluments per employee at prevailing prices has gone up by 324 per cent, (from Rs. 1290 in 1960 to Rs. 5469 in 1976-77), in real terms they have gained by 42 per cent only, as compared to 44 per cent increase in value added per employee at constant prices, (while the current price increase was 294 per cent), and only 21 per cent increase in average wages per workers, in real terms, (with current price increase of 262 per cent).

The total net domestic product in India registered an increase of 67 per cent during 1960 and 1976-77, at 1960-61 prices, and per capita income by only 18 per cent, during the same period. Compared to the average per capita income rise of 18 per cent over the period under study, the average per capita wages in the modern industrial sector went up by 21 per cent and the average earnings by 42 per cent. Though at current prices both total earnings per employee and total wages per worker in the factory sector registered sharp increasing trends, over the period under study, when deflated by the increase in their cost of living indices, the trends had been quite erratic registering sharp falls from mid-sixties, for a couple of years, and again in 1973-74 and 1974-75. Thereafter, both average wages and average earnings picked up their rising trends.

Share of Employees

The movement of the share of total emoluments, which can be taken as "compensation of employees", in the total income orginating in the registered manufacturing industries sector, over the years under study at current and at constant prices, would be an interesting study (Table V). Data on net domestic product are official estimates, which are mainly based on ASI and on Index of Industrial Production statistics, with necessary adjustments for non-responding units and for imputed bank charges, (the latter is de-

TABLE II

Indecies of Important aggregates

Year	Index of employment		Index of total	
	Workers	total	Wages	emoluments
	(1960=100)		(1960=100)	
1960	100.0	100.0	100.0	100.0
1961	103.5	102.3	108.1	107.4
1962	109.5	110.2	119.3	122.5
1963	114.1	115.5	127.3	134.4
1964	119.8	124.1	124.4	139.5
1965	121.4	128.9	127.9	148.2
1966-67	121.5	130.4	123.0	147.6
1967-68	120.3	129.4	121.1	148.0
1968-69	122.4	132.4	128.7	163.7
1969-70	127.1	138.1	140.7	177.5
1970-71	131.1	143.1	149.7	191.4
1971-72	136.1	149.2	162.0	207.6
1973-74	144.4	159.7	156.6	205.9
1974.75	147.5	166.1	152.6	210.6
1975-76	154.8	175.1	175.7	233.7
1976-77(P)	161.4	182.5	195.7	258.6

ducted from the net value added as it forms a part of the income originating in the banking and insurance sector). Some adjustments have also been made for the emoluments that had originated from Defence manufacturing establishments and the non-responding units to make this series comparable with the NDP in this sector.

At current prices, the share of employees registered some upward trend from 44 per cent in 1960-61 to 52 per cent in 1976-77, but there has been wide fluctuation in the employees' share in the net domestic product in the registered factory sector (inclusive of electricity, gas etc.), and the trend had been quite erratic. Thus the highest share (about 60 per cent) was obtained during 1968-69, and during the seventies the lowest were recorded in 1974-75 as well as in 1976-77. However, the picture is not clear as similar series could not be obtained at constant prices. The erratic increase in the proportion of NDP in the modern industries sector, going to the employees perhaps was wiped off by the sharp increase in the prices, as recorded by their CPI numbers. However, the above figures on compensation did not include all benefits from free or subsidised food, fuel, accommodation, medical attention and other welfare measures specially those which could not be evaluated in terms of money. These also did not include P.F., Pension, Gratuity and Social Welfare measures financed by the employers. ASI may attempt to collect complete information on all expenses incurred by the factory owners for the workers and non-workers separately, so that a more meaningful analysis can be made to check which section of the employees are benefitted by these measures. With only 21 per cent increase in per capita wages, in real terms, over the last sixteen years, compared to 42 per cent rise for all employees, it can be safely inferred that the lower paid "workers" fared worse than the comparatively well-off section of

TABLE III

Annual average wages earnings and value added. (at current and constant prices)

Year	Annual average wage per worker (at current Prices : Rs.)	Annual average emoluments per employee (at current prices Rs.)	Annual average value added per employee (at current prices : Rs.)	Annual average wage per worker (at 1960 Prices Rs)*	Annual average emoluments per employee (at 1960 prices : Rs.)*	Annual average value added per employee** (at 1960-61 prices : Rs)
1959	1103	1198	2507	n.a.	n.a.	n.a.
1960	1202	1290	2792	1202	1290	2792
1961	1306	1407	3142	1256	1353	3174
1962	1402	1534	3188	1310	1435	3188
1963	1475	1652	3470	1341	1502	3243
1964	1563	1815	3692	1250	1452	3387
1965	1735	2034	4011	1266	1485	3488
1966-67	1898	2280	4305	1217	1462	3312
1967-68	2092	2553	4481	1209	1476	3295
1968-69	2223	2809	4776	1263	1596	3411
1969-70	2355	2938	5518	1331	1659	3728
1970-71	2552	3210	6038	1372	1726	3871
1971-72	2762	3467	6324	1431	1796	3787
1973-74	3364	4293	7960	1304	1664	4041
1974-75	3828	5042	10046	1243	1637	3864
1975-76	4297	5427	10009	1364	1723	3721
1976-77 (P)	4357	5467	10995	1457	1829	4027

(P) Provisional.

* deflated by Industrial Worker's CPI numbers base 1960

**deflated by implicit income deflator of the registered manufacturing sector

TABLE IV

Growth rates in wages, Earnings and Value added.

(at current and constant prices)

Year	average wage per worker	average emolument per employee (at current prices)	average value added per employee	average wage per worker	average emolument per employee (at constant prices)	average value added per employee
1960	100.0	100.0	100.0	100.0	100.0	100.0
1961	108.7	109.2	112.5	104.5	105.0	113.7
1962	116.6	119.0	114.2	109.0	111.2	114.2
1963	122.7	128.1	124.3	111.6	116.4	116.2
1964	130.0	140.7	132.2	104.0	112.6	121.3
1965	144.3	157.7	143.7	105.3	115.1	124.9
1966-67	157.0	176.7	154.2	101.2	113.3	118.6
1967-68	174.0	197.9	160.5	100.6	114.4	118.0
1968-69	184.9	217.8	171.1	105.1	123.7	122.2
1969-70	195.9	227.8	197.6	110.7	128.6	138.5
1970-71	212.3	248.8	216.3	114.1	133.8	133.6
1971-72	229.8	268.8	226.5	119.1	139.2	135.2
1973-74	279.9	332.8	285.1	108.5	129.0	144.7
1974-75	318.5	390.9	359.8	103.4	126.9	138.4
1975-76	357.5	429.7	356.5	113.5	133.6	133.3
1976-77 (P)	362.5	424.0	393.2	121.2	141.8	144.2

(P) Provisional.

TABLE V

Year	NDP in the registered manufacturing sector (Rs. crore)*	Total compensation to employees in r.m. sector** (Rs. crore)	Share of compensation to NDP
	At current prices		
1960-61	1139	502	44.1
1961-62	1242	562	45.2
1962-63	1380	659	47.8
1963-64	1626	744	45.8
1964-65	1815	880	48.5
1965-66	1966	1028	52.3
1966-67	2157	1163	53.9
1967-68	2235	1290	57.7
1968-69	2422	1438	59.4
1969-70	2965	1599	53.9
1970-71	3263	1784	54.7
1971-72	3622	2007	55.4
1973-74	4684	2645	56.5
1974-75	6235	3211	51.5
1975-76	6597	3639	55.2
1976-77(P)	7402	3837	51.8

(P) : Provisional.

*inclusive of the same in electricity, gas and water supply to make these comparable with the total compensation statistics from ASI.

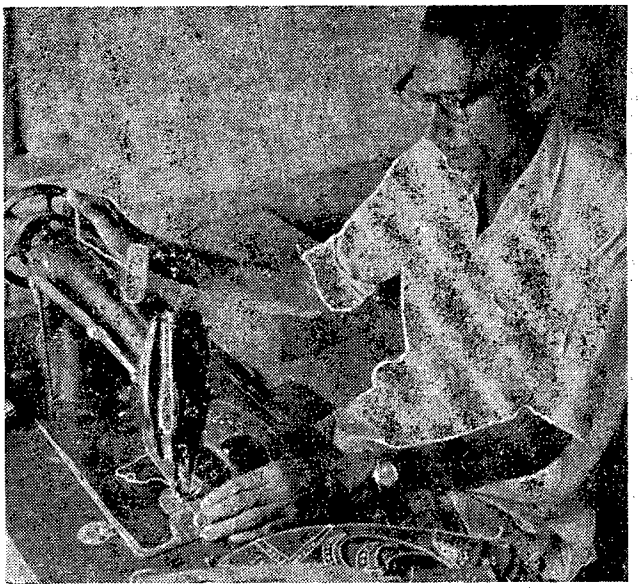
**exclusive of employers contribution to P.F., Pension, Gratuity, etc.

"non-workers" class, in this sector. However, the existing statistical information is deficient to throw any light on the distributional aspects of the earnings of the factory employees, though the basic data can be collected by the ASI, once in every five years, to examine how the additional income generated by the employees is distributed amongst them. □

Energy Management

(Continued from Page 8)

Thirdly, that we cannot afford to continue the energy policy that has been implicitly adopted in the past and we must move to a pattern of growth which uses commercial energy less intensively. Fourthly, that both from the point of view of generating the resources required to produce them and for creating a climate of energy conservation commercial energy prices need to be increased. Fifthly, that we must examine more intensively the possibilities of greater utilisation of non-conventional renewable energy resources and their application to the rural economy which by its disaggregated nature and the small amounts of low quality energy it needs makes it eminently suitble for the absorption of such energy. Sixthly, that in India we have a unique combination of an economic base which is still capable of being progressively shifted to greater reliance on non-conventional and renewable energy sources the necessary natural resources and most of all a tremendous pool of scientific, technical and managerial personnel who can be harnessed to this vital task. Lastly, I hope that the organised corporate sector which FICCI represents will share this concern for adopting such a policy and will use its skills and resources in implementing it in a way which will be of benefit to the country and themselves. I have no doubt that if we can successfully organise all the resources at our command, India may emerge into the 21st century as one of the few major countries which have this energy problem under control. We may also help to solve our major and pressing problems of employment, income distribution and the threat to the environment. □



Barefoot Entrepreneurship in Haryana

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A novel scheme has recently been started by the State Government of Haryana to generate employment potential in rural areas. Every large village will have a small scale industry by the end of 1984, owned collectively and run independently by the village artisans. The author narrates the scheme including the safeguards provided against the exploitation of the rich.

'ONE WORKSHOP under every roof' project has recently been started in Haryana to blow over the socio-economic crisis generated by the green revolution in the Villages of the State. The twin basic objectives of the project are to rehabilitate the rural artisans and craftsmen who were hit hard by the sweeping wave of green revolution during early seventies and provide employment to the educated youngmen of villages.

Rural Artisans' Plight

The aftermath of green revolution indeed saw drastic changes in the rural life of Haryana but it had its unpleasant aspects too. Whereas the big farmers had grown prosperous by commercialising their farming pattern with the support of Government's assistance in form of cash subsidy and incentives, the conditions of artisans substanticaly deteriorated. Furthermore, a large number of landless labourers were rendered jobless because of rapid growth of farm mechanisation. The inflow of consumer items like shoes, synthetic clothes and soaps from cities into villages had thrown a large number of cobblers, carpenters and weavers out of jobes. The present programme of rural industrialisation is expected to rehabilitate these categories of people by generating employment potential in rural areas.

Novel Scheme

Under the programme, it has been envisaged to set up 2000 small scale industrial units in the villages of the State within next five years. This programme is perhaps first of its kind in the country where, instead of waiting for entrepreneurs to come from outside and set up rural industries, the State Government will help to village artisans to set up small scale industries collectively and run them independently under the guidance of Government agencies.

The programme is second largest in the State ever launched on such a massive scale since its formation,

the first being that of real electrification implemented in early seventies which succeeded in providing every village of Haryana with electric connections. It is expected that every large village of the State will have a small scale industry at the en dof 1984 and eveneually the second phase of the development of the state will completed.

Village Barefoot Entrepreneur

The most distinct feature of the formulated scheme is that it aims at picking of youngmen of skills and enterprising nature from the village areas to shape them into 'Barefoot entrepreneurs' by providing adequate training and financial assistance. Under the scheme the ITI trained young boys and literate rural artisans will be financed by the State Government to start joint ventures in villages. The basic objectives of the programme are to providing self-employment opportunities to ITI trained youngmen of rural areas and modernising the traditional skills like carpentry, cobbling and blacksmithy.

The programme is expected to bring on one platform the modern technical know how and traditional skill for setting up of such rural industrial units which will produce the items of general consumption in villages like shoe, clothes, farm equipments, pottery, bullock-carts etc. Thus on one side the newly educated youngmen will get employment; the artisans will also get opportunities to take up remunerative jobs.

Successful Experiment

The State Government has been, in fact, preparing the ground for launching such a big programme for more than one year. A scheme was formulated in 1977 to set up 110 units in the rural areas on an experimental basis. The scheme drew so much of popular response that the number of units set up at the end of 1977-78 reached 127 against the target of 110 thereby employing over 400 ITI trained youngmen and more than 100 skilled rural artisans besides a large number of unstilled labourers and under-matriculates.

The performance on the rural industrialisation front was so encouraging during the first few months of 1978-79 that State Government decided to further widen the scope of programme. The entire task of rural industrialisation was handed over to Haryana Small Industries and Export Corporation in order to ensure smooth implementation of the scheme. It was also decided that a target of setting up 2000 rural units in the State should be fixed up and a policy be pursued to reach a stage when every roof had a small workshop under it.

Safe-guards against Exploitation

However, it was ensured in the very beginning that the big landowners and village mahajans do not again snatch away the benefits of the present programme. The persons having ownership of more than seven acres of land have clearly been kept away from participation in the scheme.

The loans for the industrial ventures are made available by the financial institutions at easy terms. Eighty per cent of the capital required for these ventures is advanced by the financial institutions. This includes capital cost for the project together with three months working capital. The state Government provides 10 percent seed money at the interest of 4 percent per annum and also subsidises the difference of 6 per cent between the actual and the effective rate of interest.

While giving loans, the government agencies also supply free feasibility report. The 'barefoot entrepreneur' is given the details about capital requirements etc. of the industry, he is interested in. The details of a few items are given in the Table below :—

Item	Total capital investment (Rs.)	Working Capital (Rs.)	Implement potential (Nos)
Shoes	20,000	25,000	10
Leather attache cases . . .	4,000	29,500	7
Carpets . .	25,000	35,000	12
Wooden Cases .	55,000	35,000	15
Agricultural Implements .	70,000	60,000	15

However, despite all the incentives and concessions, the scheme did not do well in the beginning during early last year. Even the government machinery was not very sanguine about its outcome. The scheme had also to suffer mild resistence from the big landowners because they were not allowed to participate in the scheme. But the task began and gradually attained momentum. Within a few months the people understood the importance of the programme and it got off an impressive start.

Also, in the beginning the marketing of the goods produced by village units posed a little problem but it was soon tackled. Now the consumer items are sold through co-operative stores in the rural as well as urban areas and the industrial items are supplied to state public sector undertakings.

As the things are now going on remarkably well with the scheme, it is expected that over 5000 ITI trained youngmen, 8000 artisans and over two lakh unskilled labourers will be absored within five years in the rural industries. These units will not only generate a great deal of employment potential but also raise the living standard of villagers in Haryana. □

A Progressive Farmer

SHRI RAM SINGH Meena is progressive farmer of Sikandra Village Jaipur District. He owns five bighas of land. He was earning only Rs. 400 p.m. His income was insufficient to enable him to meet his both ends. An idea occured to him. He had heard much about dairy farming. He took to this as an experiment. This earned him rich dividents. It has also helped him in increasing his level of income and improving his standard of living. He crossed domestic cows with exotic bulls and achieved encouraging results. His success has been source of inspiration for others.

-F.P.O. Jaipur

Time Bound Programme for

Full Employment

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THERE IS a broad consensus on the need for Manpower Planning at different levels with a view to ensuring the participation of the people on the one hand and opportunities for planning at the State, the District and the Taluka or the Block level, on the other. In the new plan strategy, block development plans will be a major instrument for achieving full employment in rural areas in a time-bound programme.

Planning Commission has recognised the importance of area planning and in fact constituted a Committee under the Chairmanship of Prof. M. L. Dantawala to prepare the comprehensive guidelines for block level plans. Under the Planning Commission's concept of multi-level planning, the administrative block will be the unit of grass-root planning. For purposes of plan preparation and implementation, the block will be considered as part of a district and its plan will be coordinated with the State's plan. A token provision of Rs. 20 crore has been made for block level planning in the Union Budget for the financial year 1978-79. The sixth plan aims at covering 2,000 blocks in the programmes of area planning. Optimum ultisation of local resources and manpower is one of the important aims of area planning. Block level plans were expected to generate an additional employment potential of 25 million man-years within the next five years as indicated by the Fiance Minister in the Lok Sabha.

Planning to Vocationalisation

The main aim of vocational education is to provide education and training to enable students to function as productive employees. The exclusively academic nature of education needs to be drastically re-oriented to make it more relevant to the 'World of Work' so as to solve the long standing problem of 'educated-unemployed'. The Ministry of Education is contemplating to divert fifty per cent of high school passed-out students in each district to take up training/apprenticeship programmes leading to their ultimate employment and thereby reducing pressure on higher education. To the extent of existing employment, avenues fall short of these requirements, additional number of jobs need to be created at the district level in the light of employment potential and economic characteristics of the district. Any purposeful introduction of vocational and technical training programme should invariably be based on the manpower needs of the area. The Education Ministry has also realised the importance of studying the manpower requirements of the area before launching the vocational education in a big way. In fact, the Ministry of Education has launched quick surveys in some districts of the country for studying the varied manpower requirements of the area.

Area Planning to Correct Imbalances

The estimation of the manpower requirements is important and more important is the determination of the specific spheres of the occupational activities of the people in the different parts of the country. It is imperative to correct the imbalances while attacking unemployment and under-employment in the existing situation obtaining—

(i) between the skills required and skills available ;

(ii) between the preparation and training need and assessing what they get ;

(iii) between the task of priority in development and the work undertaken ; and

(iv) between the rural areas where the services of such professionals as agricultural scientists, forest experts, engineers and doctors are required and urban areas where most of the professionals are employed.

These imbalances are on account of a complex forces but basically it is the result of absence of incentives for persons to acquire special skills and education and also lack of potential employers for utilising such skills and channelising energies in jobs of priorities for national development. Area Planning is likely to prove the most effective approach in this context. to the problems of employment and development of industries whose establishments of an area should be given needed encouragement to counter their situational handicaps.

Need for Area Skill Surveys

There is a need to coordinate continuously manpower needs and employment opportunities with the output of the educational system and the technical training facilities. In this connection, it was recognised that efforts of the Government at the States will have to be towards reorienting the educational pat-

tern with a view to meeting local employment opportunities arising in future in different areas. This was emphasised in the paper "Towards Growth with Justice" presented to Parliament. It was also observed that in order to provide essential tools for effective and purposeful functioning of these programmes, it was necessary to establish machinery which would ensure continuous flow of information about the current and future demand and supply of persons belonging to differenent occupations at the area level. With this view, the Directorate General of Employment and Training, Ministry of labour, Government of India, have launched a programme of Area Skill Surveys in fifteen selected districts of the country, on a pilot basis to grapple with the problems of translating economic goals set forth in the planned economy into manpower terms. This was the first attempt to tackle the imponderables of manpower planning and evolve a machinery intended to provide specific information on the changes needed in the size and the quality of training and apprenticeship programmes to meet future requirements of the country at the microlevel. It also provides details on the out-turn from educational and training institutions, avenues and scope of self-employment. Specific occupations/skills where supply is likely to outstrip demand and vica-versa have also been identified for taking suitable remedial action to remove imbalances of man-power at the area level and for proper utilisation of human resources.

There cannot be generalised policy equally applicable to all areas. Area Skill Survey approach was the first attempt to study the manpower planning from the national level to the grass-root level. The surveys have also thrown light on the oft-repeated claim that rapid economic development owing to the greater industrialisation of the country have created more opportunities and assessed if these have snow-balling effect on the employment opportunities without resorting to any special method directed towards the creation of more employment.

In other words, Areas Skill Surveys had made effort to find answer to such vital questions like :

—what are the various expansion plans of the industries and their impact on manpower requirements ?

—whether the expansion plans would give fillip to the ancillary and sub-contracting units ?

—could such units open avenues of self-employment ?

—what are the trades for which the industry conducts its own training programme ?

—what are the trades which lean on other establishment for their needs of manpower or technical personnel as also the possible change in technological pattern of the industries would require ?

Selection of Areas

For conduction of area Skill Surveys the country was divided into five zones and three districts were chosen from each zone. Among the three areas taken up from each zone, efforts were made to ensure that, as far as possible, they represented (i) industrially advanced, (ii) industrially developing and (iii) industrially less developed with pre-dominent rural economy. The areas thus selected were Aurangabad, Bangalore, Bilaspur, Burdwan, Cuttack, Cannanore, Gorakhpur, Gurgaon, Kanpur, Kaira, Kamrup, Ludhiana, Poona, Udaipur and Visakhapatnam.

Evaluation

The utility and performance of the area skill surveys were evaluated by an Expert Sub-group of the Employment Service comprising State Directors of Employment drawn from each of the five zones; planning Commission; Central Statistical Organisation and the Director ate General of Employment and Training on the basis of reports of Bangalore, Ludhiana and Gorakhpur reports. The Expert Sub-group, besides suggesting improvements in the methodology and technique desir-

TABLE I

Occupation	Manpower Requirements		
	Poona	Kanpur	Visakha-patnam
(1) Professional, technical and related workers	23671	10907	9807
(a) Scientist , engineer and technologists	11328	2153	2857
(b) Doctors and medical and health technicians	2256	986	774
(c) Teachers	8132	6778	5663
(d) Accountants, social scientists and other professionals.	1955	990	513
(2) Administrative, executive and managerial workers	6827	7246	2190
(3) Clerical and related workers	16265	8952	690
(4) Sales workers	2229	2513	6120
(5) Service workers (excluding sweepers, water carriers, watermen, chowkidars, etc.)	11351	3150	3390
(6) Farmers, fishermen, loggers and related workers (excluding agricultural and plantational labourers)	1389	444	3757
(7) Production process and related workers and transport equipment operators (excluding unskilled labourers).	74069	43374	33977
(8) Unskilled workers	29694	13821	23013
TOTAL	1,65,495	90,407	84,162

ed that the degree/level of skill for each occupation may also be assessed so as to make the results more useful in reorienting training programme. Accordingly, technical surveys have also been carried out in the three areas of Poona, Kanpur and Visakhapatnam along with intensive studies on the line suggested by the Expert sub-group.

Findings of Area Skill Surveys

On the basis of (a) employment; and (b) replacement needs due to attrition in the employed work force in conformity with the accepted norms, manpower requirements and self-employment oportunities have been calculated at the rate of 2 per cent per year, and (c) Vacancies remaining unfilled on the reference date.

The table No. 1 of the previous page gives the occupational-wise details of manpower requirements for the districts covering the period 1974-79.

Advance identification of future manpower requirements, occupation-wise, will be highly useful to the policy makers in arranging suitable training facilities to unemployed youths. Diverting educated youths to the proper channels of employment will go a long way in mitigating the tension prevailing among the educated youth on account of prolonged unemployment. Block level planners may look into the findings of Area Skill Surveys for optimum utilisation of local resources and manpower.

(ii) Area Skill Surveys have furnished information relating to future self-employment opportunities in the rural areas. "Let self-employment and not wage-paid employment be your aim", should be the slogan for solving the problem of rural unemployment and under-employment. Area Skill surveys conducted in different areas have identified the following occupations in which good scope exists for self-employment: Dairy farming; retail selling; brick and tile making; poultry farming; electrical wiring and repairing; food canning and preserving; flour grinding; carpentary and sawing of wood; tailoring; blacksmithy; rope making; khandsari and gur making; oil expelling; sheep and goat rearing; mud pottery; weaving (power loom); weaving (handloom), bidi making; agarbatti and candle making; repairing of farm equipment. The fields have been identified after making enquiries from village elders, government village officials, district officials of the concerned departments, such as, industries, planning, Agriculture, etc. Locating suitable fields for self-employment opportunities is **sine quo non** for proper block level planning.

Unemplyoment in Rural Areas

Through Area Skill Surveys, an attempt has also been made to estimate educated unemployed (matriculates and above) and skilled artisans possessing recognised certificates in the rural areas. The table No. 2 indicates the number of unemployed, vis-a-vis, number registered with Employment Exchanges.

It is evident that all rural employment seekers have not registered with the Employment Exchanges. The registration is voluntary and it is not obligatory on the part of employment seekers to get themselves registered with the Employment Exchanges for seeking employment. Therefore, it is absolutely necessary to quantify the rural unemployment through block level surveys. The Estimate Committee of the Lok Sabha in its Twentieth Report had also opined the necessity of entrusting the collection of unemployment statistics at the level of panchayat, municipality or any other unit of local self-government or revenue officer assisted by local school teachers or gram sewaks. The Planning Commission's suggestion to open employment exchanges in the rural areas during the new plan period should be viewed favourably in this context. It is for the block level planners to see the writing on the wall and act accordingly.

Table 2

Number of Unemployeds and Number registered in the Employment Exchange.

Area /District	Number of unemployed persons in rural areas (estimated)	Number registered with Employment Exchanges
Poona . . .	6,792	1,647
Kanpur	11,114	1,471
Visakhapatnam . .	6,958	4,695

Utility of Skill Surveys

Area Skill Surveys were proved to be highly useful in initiating action in the following fields at the area level :

(a) Vocational guidance and career advice ;
(b) Self-employment ;
(c) Job development ; and
(d) Employment promotion.

Banks and financial institutions have utilised the information for locating growth centres. Banking authorities also opined that the information furnished by the surveys can be utlilised for planning banking business in various districts e.g. the potential for self-employment schemes, small scale industries and other developmental activities in the district and also deposit mobilisation schemes in those districts. The information furnished by the surveys will, thus, be highly useful to the policy makers and its success lies in the implementation of the various recommendations contained therein.

Skill Surveys and Development Programmes

Realising the utilities of Area Skill Surveys, Planning Commission have decided to request various States/ Union Territories to launch area skill surveys as a part of Area Development Programme. According to the Deputy Chairman of the Planning Commission, "Area planning implies close identification of activities suitable to a particular area and capable of absorbing local labour surplus. Area planning also implies much more intimate involvement of the people whom it is proposed to benefit, both in the formulation and in the implementation of development plans". Area Skill Surveys which are expected to be launched as a part of Area Development Programme, is destined to play a pivotal role in the identification of fields suitable to absorb the rural surplus manpower. □

Rajasthan's Antyodaya Programme :

An Analytical Study

Amitava Mukherjee and Neela Sen Gupta

THE YEAR 1977 has been eventful for the state of Rajasthan. A massive programme 'Antyodaya' for the 'poorest of the poor' in every village was launched in this year. 'Antyodaya' as the name spells out is the upliftment of the 'last man in the row'. It has the lofty aim of raising the down-trodden in the villages. The programme is unique of its kind. The poor is no longer doomed to his cursed fate and wretched living. He can see a ray of hope, the way to a decent life.

Antyodaya' aims at providing the poor resources for earning a better living. The poverty line has been determined at an income of Rs. 55 per capita per month or an annual income of Rs. 3300 for a family of five. Of the total amount estimated for a series of economically productive activities, two-third is being advanced as loans and the rest as subsidy.

There is an immense task to be performed. In a period of ten years about two million families will be offered help.

'Antyodaya' in Action

As many as 160,000 families were identified as the poorest of the poor among the rural population, whose poverty deserved state support. They were fitted into one of the multi-pronged programmes as follows :

(a) 25,000 'Antyodaya' families have been covered under 'Old Age and Disability Pension Scheme'.

(b) 40,000 families were allotted lands along with credits for purchase of seeds, fertilisers & development of land.

(c) Loans and subsidies were made available to 50,000 families for self-employment like blacksmithy, sericulture, foodgrain processing and rural transportation. More fully spelled out in table I.

(d) 5,000 families were given loans/aid for khadi production.

(e) 5,000 families have been given employment opportunities on less stringent terms in regular public sector undertaking and semi-government/government organizations. Additionally, wage employment has also been provided by both the private and the public sector.

(f) Other schemes based on local resources are being suggested for the rest viz. allotment of saltpans to 750 'Antyodaya' families in Nagaur district ; allotment of lands for raising forestry and pastures ; allotment of mining rights to 'Antyodaya' families in Udaipur and Sawaimadhopur districts ; engagement in fisheries and river training.

The execution of the programme is entrusted to the care of six-tier administrative machinery—the services of the co-operative Credit Institutions. nationalised banks, District Development Authority/ Small farmers' Development Agency. Revenue officials have also been requisitioned for working out the details of the programme and its implementation.

Saradhana Village

Saradhana is a small village in Ajmer district of Rajasthan. It has an area of 2636 hectares. Out of this the area under irrigation is only 1363 hectares. During the years 1969 to 1972 the village suffered famine, it was also hit by floods in 1975 and by drought in 1977-78.

The village has a population of 5209 (1971 census) with 825 households. Of these households about 108 have an income below Rs. 100 per month. The occupational structure of the village has been highlighted in Figure II. In 1977 twenty nine households were chosen as beneficiaries under the 'Antyodaya' programme. Of them, two refused to take loans, two were defaulters in the past whom bank refused to give loans, two got jobs other than that of self-employment under 'Antyodaya' programme and bank formalities for three families were not complete even by the end of 1978 when this village was visited.

So a total of twenty families benefitted out of this self-employment scheme of 'Antyodaya'. In addition, ten families were granted pension on a monthly basis for they had no member in the age group of 15-59 capable of economic activity. As land is supposed to be a status—symbol for the villagers most of the 'Antyodaya' beneficiaries wanted land. As land was not available for distribution in Saradhana, ten families went in for 'camel cart' which was next in order of preference. The remaining ten families sought for other types of self employment such as Nivar-making, carpentry etc.

Sheep unit, goat unit, carpentary and cycle repairing shop have been quite viable projects in the village. Nivar-making and mat-weaving could be more worthwhile project if some type of an assured market be found for the products. At present they are thriving on a very narrow range of market facilities.

A close look at the projects undertaken by the twenty 'Antyodaya' families lends credence to the view that not all projects would be economically productive units in the context of the socio-economic conditions existing at Saradhana. Let us take the example of camel-cart. Saradhana has already 35 camel-carts operating from village to town and back. These carts remain under-utilised in the sense that they carry, on an average, 10 quintals per day just for 15 days a month. In the rainy season this mode of transport remains suspended for nearly two months. Unless the demand for the utilisation of camel-cart increases the addition of ten more camel carts in the village would complicate the situation. Given the demand for camel-cart mode of transport remaining the same, increase in the number of camel-carts would lead to distribution of income among the camel-art owners themselves making the old set of camel cart owners worse off. Thus there is a distinct possibility of distribution of income to flow not from the very rich to the very poor but from the poor to the poorest and in all possibility, drag a few more persons below the poverty line.

An interview with Shri Chetan Giri of Saradhana who is the receipient of a sewing-machine under the 'Antyodaya' programme brought out a few facts. His sewing machine is not viable now or only marginally so. He received a loan of Rs. 450 for buying a sewing machine, backed up by a loan of Rs. 100 per month

TABLE I

Districtwise Progress of Antyodaya Programme in Rajasthan upto 15-9-1978

No. of Families benefitted under various schemes

Districts	No. of Villages	No. of families identified	Old Age pension	Land allotment	Employ-ment	others	Grand Total	Percentage of families covered
1 2	3	4	5	6	7	8	9	10
1. Sirohi . .	436	2584	543	1206	5	..	2584	100.0
2. Jodhpur . .	701	3613	1626	306	29	550	3613	100.0
3. Udaipur . .	3029	15494	1933	9382	18	4	15339	99.0
4. Alwar . .	1876	8572	1260	4133	125	57	8475	98.9
5. Pali . .	881	4614	629	1076	261	..	2143	90.1
6. Bikaner . .	538	2394	273	377	39	369	2143	89.5
7. Tonk . .	1005	4331	521	1162	33	..	3833	88.5
8. Kota . .	1878	4810	1163	1357	119	38	7319	87.0
9. Bansheara .	1462	4133	351	2849	1436	..	6185	86.7
10. Churu . .	844	4173	305	367	11	263	3474	83.2
11. Jalore . .	595	3606	787	722	39	..	2890	80.1
12. Bundi . .	733	3330	260	1292	34	..	2629	78.9
13. Barmer . .	844	3942	507	869	5	356	3030	76.8
14. Sawai Madhopur	1531	6923	1951	515	178	51	5199	75.1
15. Nagaur . .	1209	6219	774	230	150	1306	4670	75.1
16. Chittorgarh .	2358	3896	442	2328	173	21	6429	72.2
17. Sikar . .	811	5873	1449	82	91	326	4110	69.9
18. Dungarpur .	832	4160	468	382	250	..	2888	69.4
19. Jaipur . .	2716	12726	2253	2416	248	279	8710	63.3
20. Bhilwara . .	1521	5706	419	2879	24	..	3868	67.8
21. Jaisalmer .	409	2214	188	605	9	309	1476	66.6
22. Jhalawar . .	1450	6911	689	2376	218	66	4537	66.6
23. Jhunjhunu .	685	3402	430	..	12	..	2234	65.6
24. Bharatpur . .	1886	11596	3664	778	822	100	7142	61.6
25. Ganaganagar .	1511	6329	1741	742	100	113	3600	56.9
26. Ajmer . .	957	7217	780	1184	181	..	3727	51.6
TOTAL . .	32638	160517	25453	39615	4610	4208	124261	77.4

Source: Special Schemes Organisation, Govt. of Rajasthan.

to buy cloth. The average stitching charge is Rs. 2 Shri Giri has 25—30 families as his clients. Given that 50 per cent of the villagers have their clothes stitched in town, that they do not very often go in for new clothes, except perhaps during festivals, and that the population in rural areas is generally poor, it would be too much to expect that Shri Giri would marshall up orders of such magnitude as would leave him with consumable income to raise his living standard, after meeting debt obligations. It may be necessary to realign the beneficiary families or enjoin upon the 'Antyodaya' families that each consume the goods of the other(s).

Loans need to be given for viable projects taking into account the availability and profitability of the goods to be produced by the beneficiaries in relation to their village and the neighbouring areas. An elaborate estimate of the demand pattern would have delayed the launching of the programme as was correctly pointed out by the officials in charge of its implementation. Even so, every effort should be made for having a quick estimate to avoid the pitfall on the way to success.

General Observations

In course of our field study regarding the 'Antyodaya' programme few unsatisfactory aspects have come to light. In some villages the land allotted was of marginal type which instead of being an asset, could prove to be a burden for the Antyodya family.

It was also noticed that the socially backward classes in villages not on route of Co-operative Milk Marketing Society, were reluctant to take up cow-unit under the 'Antyodaya' programme even when there existed a village market for the sale of milk. They believe that caste prejudices will prevent a considerable section of the local buyers from purchasing milk from them and the margin of wastage will be so high that they will have to run at a loss.

Another issue which came to light was the selection procedure adopted in the villages for choosing the

TABLE II

Occupational Break-up of Village Families at Saradhana (1977)

Occupation	*No. of families engaged*
1. Agriculturist	400
2. Cobbler	150
3. Carpenter	5
4. Blacksmith	7
5. Tailor	5
6. Oil Ghani Owner	2
7. Barber	6
8. Pottery-maker	15
9. Gold-smith	3
10. Cloth-dyers	2
11. Bharbhuja shop	1
12. Handloom	3
13. Bangle-making	2
14. Shop-owners	8
15. Daily labourers	220
	825

beneficiaries. In some villages the selection of families was not made according to the criteria laid down by the state government but according to the wishes of the powerful locals. This has imparted considerable favouritism and bias to the programme itself and thus deflected it from its real goal.

Some Recommendations

'Antyodaya' programme spells out perfect freedom on the part of the beneficiary regarding the choice of project. This is based on the assumption that his choice is rational from all angles. Moreover, he should have the main say because it is he who is taking the debt and the responsibility of re-paying it. The assumption of rationality on the part of the beneficiary is not corroborated by the reality of the situation. He being a poor illiterate, ill-equipped, unenterprising with little or no experience in carrying on an independent business, should be helped by some sort of an advisory body set up to guide him in matters of selecting the project and running it.

At present 'Antyodaya' programme has no room for families below the poverty line who are past defaulters. It is understandable that mainly it was their poverty which stood in their way of repaying loans. If such cases are not taken up seriously and not allowed to participate in the 'Antyodaya' programme, their plight is likely to worsen. This might have serious implication of increasing inequality and poverty not only in the village but also in the state.

A special body could be set up to enquire into the claims of the selected beneficiaries. Without proper scrutiny benefits will go to the undeserving. It is essential to have a follow-up system in order to sustain the benefits arising out of the programme and minimise the losses. The system should also efficiently deal with the possibilities of the project undertaken by a beneficiary being run at a partial loss, a complete failure or kept as mortgage with a 'mahajan'.

Revaluation of each type of project undertaken is very important to determine the economic viability of the projects in the light of one year of 'Antyodaya' The idea of 'ensuring a minimum reutrn' which would enable 'the beneficiary families to repay loan instalments and leave enough for consumption' would otherwise be difficult to realise.

The government would do well to examine the proposal of supporting the 'Antyodaya' families by helping them to market their products, howsoever small in quantity, outside their villages. The Co-operative Marketing Societies might play a useful role in this regard.

It is singularly important for the government to see that steps are taken to counteract the famous 'Demonstration Effect' of Duessenberry. As the 'Antyodaya' programmes go on, incomes will rise and the beneficiary families tend to buying goods like transistors, bicycles etc. If the 'Demonstration Effect' is allowed to operate un-abated, the impact of 'Antyodaya' in raising the income of the rural poor for better food and health conditions, will not be conspicuous.

Admittedly, counteracting the 'Demonstration Effect' is a difficult proposition and may not be required immediately. But the establishment of adequate infrastructure to mop up additional disposable funds with the beneficiary families is essential. One suggestion would be that banks involved in financing the projects may introduce a system of 'tiny savings' where an authorised personnel of the bank will visit each client everyday and collect a small but fixed amount of money. A system such as this would make it easier for the beneficiaries to save, repay their loans and develop the habit of thrift.

Another suggestion could be that government expenditure on 'Antyodaya' should be stepped up in proportion to the rate of inflation. The net result would be that the rate of government expenditure in real terms is constant over-time.

One last word about a non-economic factor. Some experts like Meier and Baldwin, hold that the basic determinants of economic growth are non-economic. The most important non-economic factor, on which attention ought to be focussed, is population. Poverty among the people, nibbling at the bottom of income scale is greatly acentuated by the increase in family size. The 'Antyodaya' families ought to be induced to family planning and adequately convinced of the necessity of restricting families which lies in their own hands. If the rise of income due to 'Antyodaya' programme is accompanied *pari-passn* by expansion of family units (because greater income generates at the bottom of income scale confidence to rear bigger families) then the 'attack on rural poverty' may well prove to be an 'attack on rural prosperity'. □

Now Antyodaya families can get loans with the backing of group security and hypothecation.

A Report—

Amarpurkashi Village Development Project

Major Sedley Sweeny
Brynayre, Talybont-on—Usk Breconshire

Rural Development is the basic essential for the overall development of the country. Government is implementing the rural development programmes with particular care. Voluntary effort to supplement official action in this regard is a must for the faster transformation of our country which lives in villages. Such voluntary activities also highlight the intricate problems facing the successful progress of the areas for away from the cities. The author, having paid a visit to one of the village development projects in U.P. in November 1977, makes an interesting analysis of the situation, pointing out the hard way to prosperity.

I had known Mukat Singh for a number of years and was impressed by his Village Development Project and by his own enthusiasm and sincerity. But, having seen several projects in India, I was reluctant to commit myself to positive support until I had seen his work on the ground. I was therefore delighted when he invited me to come to Amarpurkashi. My previous work in India had been with Tibetan refugee children : I had not lived in an Indian village nor had I been able to look closely at Indian agriculture. Later, when I organised and ran the Tibetan Farm School in Wales, I did so in the instinctive belief that whatever the difference between Welsh and Indian conditions, the principles of good soil, crop and animal husbandry were universally the same. In this belief I was often criticised by those who said that nothing I could teach in Wales would have any relevance in India. Now was my chance to find out.

Indian Project

I arrived at Amarpurkashi and stayed for two weeks. Originally I had planned to stay longer, but for various reasons was forced to shorten my stay in India. Nevertheless I was able to look closely at the people, crops, animals and at the various projects planned or already operating. I also had long discussions with Mukat on the social and political life in India, its effect on the lives of the villagers and on his own aspirations and achievements. As he clearly pointed out , many Western observers think only in terms of positive plans and projects against a background in their own countries and fail to grasp the significance of the enormous additional problems of the developing world in general and of India in particular. At first I was impatient when Mukat countered my suggestions with the snags and difficulties, as I was when he spoke of his plans to hold protest meetings and marches, whenever bureaucracy or corruption threatened the wellbeing of his villagers. Although I still think that to some extent I was right—battling against others is a negative and destructive occupation—it is also true that unless the evil forces of corruption and obstruction can be controlled, the effort put into projects will largely be wasted. This, in a nutshell, is the problem of India (of which more anon) ; a problem that had made many Western wellwishers, as well as educated Indians, turn away in hopeless frustration.

In the end I was forced to agree with Mukat that India cannot be written off unless at the same time one abandons hope for the world. This conviction has led him and his brave Australian wife to give up secure jobs in England and devote the rest of their lives to improving the lot of India's half-billion villagers. Such vision, courage and determination must be supported, whatever the risk of disappointment and failure.

The Setting

November in Northern India is very pleasant. The monsoon is over, the ground is still green and the air warm by day and refreshingly cool at night. The villages nestle snugle amidst neatly managed fields of sugar cane, millet, sorghum and potatoes, giving an appearance of tranquil prosperity to the casual observer. I was filled with a feeling of timelessness in an unchanging and unchangeable India. For all the luxury hotels in New Delhi, the buses and lorries, State airlines and steelworks, atomic power and chemical plants, the new tractors and implements with such limited life-expectancy, life within the village goes on as it has for centuries ; slowly, patiently, obedient to the demands of the seasons and the caprice of weather, official and moneylender. Half-a-million villages containing practically the whole population of the country still toil endlessly to keep body and soul together ; to save enough of their produce from drought and flood, from tax collector and middle man, from decay and predator to fill their bellies and raise their children. On the one hand the earth seems so rich and productive, on the other the people are so poorly nourished that it is a wonder they have the energy to continue the struggle.

Amarpurkashi village contains some 100 families ; about 700 souls in all. The houses are mainly of mud with one or two small rooms and a tiny kitchen, and are surrounded by small courtyards in which the animals are tethered and fed. A few of the streets are bricked and wide enough for a bullock cart to pass, the rest are narrow and mud surfaced with open drains from the houses and cattle yards. Around the edge of the village are three ponds into which the drains discharge. Some houses have wells with pumps, other

rely on communal wells ; very few are connected to the electricity supply. There are richer villages in the Punjab and elsewhere, but there are also many which are much poorer. Amarpurkashi and the surrounding villages which make up the Project can fairly be described as typical insofar as the standard of living and health of the nation is concerned. But in one respect they are far from typical, for they have within them a new spark of hope, a new awakening to the possibility of better times to come. This new light stems from Mukat Singh's imaginative Village Development Project on which he has devoted all his energy and resources for the past seven years.

The Land

The soil is strong clay-sand mixture of great depth overlying an excellent water table. The surface is mainly level and 75 per cent of the land is irrigated from Government and private tube wells plus a number of private open wells with bullock-driven bucket pumps. The soil is inherently fertile although the organic content plus micro-fauna and flora shows signs of depletion. The land is divided into a large number of small plots ; a typical family farm consists of about 3 acres divided into 7 or 8 plots which may be scattered. Two crops may be grown in one year on the irrigated land ; one being harvested in November (mainly rice, sugar cane and pulses) and the other in May or June before the monsoon.

The Crops

Almost any crop will grow and ripen well in this area, and it appears likely to me that even on the very small family farms it should be possible to feed the people extremely well and still have surplus produce to sell for those necessities unproducable within the group of villages. As it is, about 75 per cent of the land is growing sugar cane for sale to the local plant where prices are uncertain, to put it mildly. Rice, millet, sorghum, wheat and barley are the main cereals ; a variety of pulses provide protein food, and vegetables include potatoes, cauliflower, radish, tomatoes, aubergines, leaf vegetables (spinach), marrows and melons. Mustard and oil-seed rape are grown for oil Ground nuts, butter nuts and water nuts are also produced as is a little jute for rope making. Chillies are grown for spice and local fruits include Jackfruit, mangoes and bananas.

Crops are rotated to some extent, but the preponderance of sugar cane limits the full development of alternately cropping with cereals and pulses, brassicae and roots.

The exact extent of cash-cropping is difficult to ascertain. In eight families surveyed this varied greatly; some consuming most of their own crops (except sugar cane) others selling practically everything. I think it is true to say that the villages as a whole are committed to a cash economy and their agriculture is designed to make money as the first priority and to feed themselves as the second.

The crops suffer from a variety of pests and diseases, and the use of pesticides is encouraged and increasing steadily. There is also a growing use of chemical fertilizers in conjunction with irrigation and 'improved' seed to grow the weightier crops which make up 'the Green Revolution'. That this scale of cropping draws heavily on the humus resources of the soil as well as on the minerals cannot be in doubt, and it seems likely that this depletion is reflected in the inability of crops to withstand disease and predators. Unfortunately a great proportion of the cattle dung is burned as cooking fuel and does not find its way back onto the land except as ash. Some farmers do make a little compost in pits using the cattle dung during the monsoon when it is too wet to make into cooking fuel. These pits do not seem to be very well built or aerated, but do provide a limited amount of humus for nursery beds.

The People

The villagers live in 'extended families' on average about eight persons to one house. Parents and grandparents, children and grandchildren, in-laws and others make up some of these families. Infant mortality is high ; in the worst case a woman had one survivor out of 19 children born ! Child marriages are still common and many—but not all—of the women are still in strict purdah. Domestic work and care of buffaloes is done by the women, cultivations and care of the bullocks by the men. Threshing, winnowing, gleaning and grinding of corn and chaffing of straw are shared by both sexes.

Within the villages there are some very competent craftsmen : carpenters, wood turners, blacksmiths, wood carvers, mechanics, wheelwrights and tailors. Their skill is the more surprising in view of the almost complete lack of proper tools, most of which they make themselves. Their ability to improvise is astonishing.

The health and general physique of the people is far from good. An apparent shortage of first class protein results in poor development from childhood onwards, and the people are very susceptible to a number of diseases including malaria, typhoid, TB, dysentery, skin troubles and 'fevers'. There must be a considerable natural immunity to many diseases as a result of the lack of hygiene and facilities, but I expect that several diseases are endemic and cause a degree of disability without becoming acute.

Medical services are minimal and doctors often not qualified. The policy regarding infectious diseases (eg. Typhoid) is crude but realistic : '. .we treat the patient with medicine but have no facilities for protecting the others'.

Apathy is the greatest problem, and this is what Mukat and his wife are struggling to overcome. Too often the villagers have been promised a better deal by the Central or State Government, but 'many's the slip twixt the cup and the lip', and the attitude is 'I'll believe it when I see it'. This has gone on for so many generations that it is difficult to arouse interest in any new idea. Nevertheless, there is a stirring amongst the people of the Amarpurkashi group of villages and the Project *has* made some progress, albeit with disappointments and failures as well. Probably the only way to stir the imagination is to show, for example, a better way of farming and living and a better understanding of nutrition and health. This is long-term education in its truest sense and requires great vision, wisdom and endless determination. It can only happen in a community blessed with a leader like Mukat Singh. Such men are rare, and it may be argued that their contribution is but a drop in the ocean. But if, in his lifetime the 'yeast' of his vision can leaven ten villages and bring them to a higher plane of life, others might begin to follow that example. It will be a long haul indeed !

The Animals

An average family of eight might own four or five cattle, both buffaloes and cows. The castrated bullocks of both breeds are the main source of power for tillage and transport and still work the bucket lifts at the open wells for irrigation of the land. The imple-

ments they draw have changed little over the centuries. The wooden plough with locally forged iron share, the timber beam 'leveller' and the universal ox-cart are to be seen everywhere. An occasional ox-cart mounted on rubber-tyred lorry wheels and a few animal-drawn disc harrows are the only 'modern' innovations used by the majority of farmers.

Now and again one comes across a well-grown pair of bullocks in reasonably good condition; the sign of a well-to-do, enlightened farmer. Most of the cattle, however, are under-sized, painfully thin and weak. Through lack of protein they develop very slowly; a two-year old cow often being no bigger than a 6-month old Jersey heifer in Britain. Most of the cattle are fed on the chaff to rice straw, millet and sorghum stems plus a little dusty creeping bent grass that grows by the roadside and perhaps the leaves from the branch of a tree. Enlightened farmers might add some oil-seed cake and add a little sorghum meal, but the general level of nutrition is appallingly low.

Milk yields reflect the level of nutrition, buffaloes generally giving more than cows. The potential yield of these cattle is probably low compared with European animals, but it is quite wrong to suggest that improved breeding would increase production so long as the farmers do not understand the principles of animal nutrition (or are unable to afford proper fodder).

A few farmers keep goats which seem to thrive better than cattle in local conditions, but even they are hardly show specimens. Even fewer keep pigs and these are of a very poor quality. As far as I could ascertain the vast majority of the people of these villages are vegetarians, and one can see little economic value in the many 'dry' cattle kept by the villagers. These all eat the limited food and keep the rest from growing to their full potential. There are long-standing religious traditions which make it impossible to alter this situation; what is more, the majority of the cattle are owned by independent individual small farmers and it would take more than 'high level policy' to make them change their ways.

A large number of semi-wild dogs inhabit the villages, many of them in dreadfully poor condition. Whilst I was there one teenage boy died from blood poisoning from a dog bite; not the first time this had happened.

A few free-range chickens pick up what they can about the village, but do not lay many eggs.

The Development Project

The Indian Government 'Block Development Scheme', started shortly after independence, had substantial initial success, particularly in the development of tube wells, canals and irrigation as well as in the building of access roads to villages which were formerly cut off completely during and after the monsoon. But more recently the scheme has not been a success for the following reasons :—

(a) The standard 'Block' of 100 villages was too large and unwieldy.

(b) The Block HQ setup was too remote and unrelated to the village situation. The HQ Staff were townsmen who did not care for village life.

(c) Block boundaries were political instead of rural/geographic.

(d) The scheme was too rigid to allow for varying village situations.

(e) There was lack of commitment (after initial enthusiasm and success) amongst Block Development staff.

(f) Help under the scheme went mostly to the better off and bypassed the poorest who became even poorer and more frustrated.

The ultimate success of any development scheme must depend upon the involvement and enthusiasm of the villagers themselves, but the level of Block Development thinking is too abstract and remote to stir the imagination and overcome the apathy of the poorest people. Likewise, the State education system, with its emphasis on paper qualifications and status does not fit people to face the real problems of village life.

The Amarpurkashi Village Development Scheme, founded by Mukat Singh differs from the Government 'Block Development' as follows :—

(a) The scheme embraces 10 villages with common interests.

(b) The villages were chosen because of their natural and mutual attraction to Amarpurkashi (which is centrally placed adjacent to the main road).

(c) The education offered (apart from the Government primary school) is designed to stir the imagination and awaken the realisation that there is hope of better standards of life and health, and to demonstrate how these aims may be achieved.

(d) Every effort is made to ensure that the advantages flowing from the project shall be enjoyed by *all* the villagers, and not only those already better off.

(e) The education and training is primarily intended for the inhabitants of the associated villages, but provision is made for training selected outsiders in order that the concept may spread to other groups.

The following projects have been started under the Scheme :—

(a) The Junior High School has more than 120 enrolled. The syllabus follows the U.P. standard courses, and there is additional instruction in gardening and plans to include some manual skills to fit the students for village life. Great efforts are made to open the eyes of the children to the possibility of creative thought and to wider horizons.

(b) The Amarpurkashi Agro-Industrial Polytechnic has been designed to provide discussion forums and practical training as and when the need arises. It does not work to any fixed term or syllabus. It is hoped to equip the Polytechnic with its own workshop and with tools for carpentry, metalwork and electrical work. During my visit to APK, one general course was planned for students from outside the Project. The idea was to combine lively discussions with practical training and tests to foster initiative, leadership, observation and practical manual work as well as to introduce the principles of farm husbandry and nutrition. Some 20 students were enrolled, but in the event only two turned up. The instructors were given some preliminary training (with my help) before the students arrived, but the course never got going whilst I was in the village. As this happened at the same time as Mukat was taken ill with suspected typhoid, it is hardly surprising that the course was not a success.

but I must say that the syllabus had not been planned right through and I feel that the course might have been rather a 'hand-to-mouth' affair. Once the Polytechnic has its own building and workshop facilities, it should be easier to plan a thorough practical course.

(c) The Children's Centre has been temporarily closed because there is no volunteer to run it and it has not been possible to recruit a suitable local girl. Apparently any suitably educated girls are married and convention does not allow them to go out to work. Efforts are being made to recruit a new volunteer from abroad, but it strikes me that in the long term the Centre should be run by a local woman.

(d) Agro Hires. The Project has one good workshop which is used mainly for tractor, diesel engine and implement maintenance and repairs. It also doubles for practical instruction when Polytechnic courses are run, but is not properly equipped, nor is it roomy enough for the latter use. The 4-year old Zetor tractor has been off the road for some months awaiting a new tyre and general overhaul. It is in very poor condition largely due to lack of proper maintenance, and I do not expect it will do much more useful work. The new Massey-Ferguson tractor (made in India) had done less than 200 hours work at the time of my visit, but was already showing signs of wear and damage. Fortunately I was able to write down and give practical instruction to all the drivers and mechanics in daily, weekly and monthly maintenance and am certain that they can do all the tasks perfectly well if adequately supervised. There are two young men on the Establishment who hold degrees in agriculture ; Indal Singh Bhadoria (Mukat's Deputy) and R. B. Pandey, the Agricultural Adviser. Between them it should be possible to arrange strict supervision. The tractors are equipped with disc harrows, spring tine cultivators, leveller board and a trailer. Although the M-F 35 works regularly in the fields on hire, I am doubtful if the tractor hire service will ever pay for the fuel, oil, repairs, replacement parts and tyres as well as depreciation (which must be allowed for at not less than 25 per cent per annum) and driver's and mechanic's wages. If all these costs were truly reflected in the hire charges, few if any of the farmers would afford the luxury of tractor work, and once again it would be the poorest who failed to get the advantage of the service. The diesel pumping engine hire service, on the other hand, seems to be doing well. The operators and mechanics know the engines completely and are able to do complete overhauls with the tools at their disposal. Of seven engines owned by the Project, four were in working order and three being overhauled. These simple engines are mounted on bullock carts and are in regular use throughout the group of villages. The animal drawn disc harrows are also provided by the service. These, like the tractor-drawn discs and cultivators, tend to be used until they break down without much maintenance or greasing; a habit I have observed at home as well as in India !

(e) Fertilizer Agency. This was started when fertilizers were scare and getting into the hands of the wrong people. It successfully corrected this wrong. Recently, however, the Government has subsidised fertilizers, the import duty has been removed and co-operatives have been set up which allow farmers to borrow the cost of fertilizers against their future crops. The APK Fertilizers Agency has therefore closed down and confines its activities to keeping an eye on the fair distribution by the co-operative. The escalating use of fertilizers and pesticides by farmers who know little about their long-term effects or the possible dangers is, in my opinion, a matter of great concern.

(f) The Farmers' Consultancy Service is run by Mr. R. S. Pandey, BSc (Agric). He has a good conventional knowledge of the theory of agriculture and the beginning of some ideas of the value of humus in the soil. I was not able to see much of his work during my visit as he was engaged in preparing for the Polytechnic course that failed to materialise.

(g) The Milk Collection Centre. This service seems to have improved the price the villagers in the three villages concerned get for their milk. There has been talk of improvement of cattle breeding to increase yield and profit, but I am convinced that the first move should be to teach the farmers how to rear their calves and feed their milking cattle. Until they know how to make the best of their existing stock, there is no point whatever in thinking about breed improvement ; indeed any premature attempt at such would end in very expensive failure. Like the better seeds of the Green Revolution, expert feeding and management, and would die in conditions that the indigenous scrub cattle can tolerate.

(h) The cattle and vegetable market scheme was launched too soon and with insufficient preparation and experience. There was jealousy and fierce competition and the villagers did not understand the idea of competitive cattle showing. This project has been abandoned.

(i) The Hoffman Brick Kiln was built by Mukat Singh as a private venture in 1970. Due partly to faulty construction, partly to late delivery of fuel, partly to incompetent handling of the fuels, but mainly to the very early onset of the monsoon, the first firing was a failure and a substantial part of the kiln was washed away. There has since been a concerted effort to get support for the training of an operator and the rebuilding of the kiln. This was nearly achieved with the promised support of the I.T.D.G. and Christian Aid, but due to several factors beyond the control of Mukat Singh, these plans collapsed and nothing yet has been done. There seems

very little doubt that a Hoffman kiln, properly constructed and skilfully fired would turn out better, cheaper bricks than the traditional Bull's Trench kilns which already operate every few miles along the main Moradabad-Chandausi road. If it were not expertly run by a well trained operator it would almost certainly be another costly failure.

(j) The Farmers' and Labourers' Organisation is designed to act as a Union to stand up for villagers' rights against exploitation and corruption. Under the leadership of Mukat Singh it has had some success, but still has a long way to go in rousing the poorest people to feel that they have any chance of standing against the stronger forces that exploit them. Nevertheless, it is a start, and is having some effect.

Suggested Projects

(a) Small Industry Project. At the request of a Tibetan ex-pupil now farming in Maharashtra, I took a hand-operated seed sowing fiddle to India. At Amarpurkashi I showed workshop staff and a local carpenter how to copy it. Together we made three copies and carried out a successful demonstration of sowing wheat and compound fertilizer. This implement, very cheap and simple to construct, is most suitable for Indian conditions. The market for it is wide open and with proper promotion and a well organised simple assembly workshop, it should be easy to start a very lucrative cottage industry. The capital cost would be far less than replacing the worn out tractor, and the chance of the project succeeding much greater.

(b) Food storage is a very great problem in India. Weather and predators destroy nearly half the food grown. I suspect that much valuable food grown in the villages is sold in the towns (rather than eaten by the villagers) because it is not possible to store it safely in the villages. Considerable work has been done in China and in SE Asia on design and construction of ferro-cement food storage bins and silos. The techniques are suitable for village workmen although skilled supervision is required to ensure good quality work. Designs and techniques are available in an excellent publication by the national Academy of Sciences, Washington, D.C. 'Ferrocement : Applications in Developing Countries', (sent free on request). This is a skill that might be taken up by the APK Agro Polytechnic to great advantage of the village group comunity.

Some of the Problems

The new Janata Party Government has adopted a policy based on 'Small is Beautiful' and promised to support small-scale agriculture (there is virtually nothing but small-scale in India) and village manual crafts. This Gandhian policy, if it can be achieved, is exactly what the villages need to bring about the radical change that alone can save the masses from disaster. To promise is one thing : fulfilment will certainly prove much more difficult. In the first place, Indian industry and big business saw immediately that heavy investment in agriculture and cottage industry would mean much less for them. How could they maintain industrial growth, exports, balance of payments, employment? There will certainly be heavy pressure on the Government to compromise. Second, there is the 'immovable middle', that mass of administrative civil servants at every level from Central to State Government, to District, Teshil and Panchayat. These 'faceless' men, with notable exceptions, are well nigh impossible to pin down, unwilling to make any decision that might put their jobs at risk, completely out of touch with real problems and out of sympathy with poor people, are generally lazy and too often corrupt. By the time the Government's intentions have filtered down through them, they bear little resemblance to the first inspired ideas, and the investment will already be sadly dissipated. Finally there are obstacles within the villages themselves. Selfishness, jealousies, nepotism and corruption exist there too. It would take an army of Mukat Singhs to keep tabs on every individual who might try to obstruct or make off with more than his share of the booty. The problems can hardly be over stated. They are enormous.

The Way Ahead

The aim of the Amarpurkashi Village Development Project is to improve the lives of the villagers in the group, and, ultimately throughout India. From the material point of view this means improvement of health from better nutrition, hygiene and general living standards. From better health will flow the energy and drive needed to promote imagination, initiative and to overcome apathy. Only when morale is thus raised will it be possible for people to develop their full spiritual and cultural potential.

The land is good, and can provide the health-giving nutrition required by man if man will, in turn, provide the earth with the nutrition it needs to foster its own life and health. The whole process is a cycle of life in whch the waste products of man, animal and plant must be carefully returned to the soil, which, in its turn produces healthy plants on which healthy animals and healthy men may be fed. In recent years man has tried to short cut this cycle by direct feeding the plants by chemical fertilizers. Like a man seeking strength through the whisky bottle, this process shows remarkable effects in the early stages, but sooner or later, the side effects begin to show. More direct 'feeding' is required to produce the same effect, biological balances are upset and the soil and plants become sick ; finally a state is reached where a cure is extremely difficult if not impossible. The nutrition of animals and men by means of sick plants gradually brings on lack of vitality and increasing sickness in man himself.

There is a school of thought that suggests we are in such dire straits today, when population is rapidly outstripping resources, that we cannot afford the luxury of quality food, but must increase quantity at any cost. This policy might work for a generation (albeit with devastating effects on the health of mankind) but in the long run does not face up to the needs of our successors. Mankind is selling the future for the needs of today.

The policy of the Government of India is to support village agriculture and small cottage industries. This is excellent as far as it goes. But unfortunately it has not faced up to the full implications of the 'Cycle of Life' and the fact that true health can only issue from a healthy, living soil. The principles behind this concept of health are very clearly set out in the works of two great men, both of whom developed their phi-

losophies and practical systems in India. The late Sir Albert Howard's 'An Agricultural Testament' develops the concept of the living soil and its effect on the health of plants in arguments of inescapable logic. The late Sir Robert Mc Carrison in his book 'Nutrition and Health' describes his work, spread all over the Indian sub-continent, in which he proved beyond any doubt that nutrition and human health are inextricably linked, and that the health of the food, and, indeed the health of the soil on which it is grown are every bit as important as the items of food themselves.

It is extremely difficult for a small village community 'to go it alone' and fly in the face of Government and generally accepted agricultural policy, even when the villagers know that the policy will ultimately lead to disaster. Nevertheless, a growing number of enlightened people *are* striking out on organic lines with remarkable success. The task is difficult but not impossible. By starting in a small way and working forward step by step, a community can make the change. But it requires courage, determination and strong discipline.

out. Then one can build on one's successes and move step by step to greater changes. In the case of Amarpurkashi I would suggest that Mukat Singh, as one of the larger and more secure farmers in the group, should make the change over a period of five years with the aim of becoming a model farmer in self-sufficient smallholding with surplus produce for sale to meet the cash needs of his family. Others would be sure to follow his successful lead.

The gradual changeover must be accompanied by education in nutrition which will be very difficult in the conservative and prejudicated conditions of village life. The present malnutrition and poor physique of the villagers will only be improved when the people realise that they must start by rebuilding a healthy, living soil on which they can grow healthy, health-giving crops, which, in trun, they must learn to harvest, preserve, prepare and eat in the right proportions. This is a major enterprise in *real* education which might form the basis of courses in the Junior High School and the polytechnic. All other awarkening, and enlightenment on the social and political planes is really a waste of time if the people continue to be badly fed and of poor physique.

The present malnutrition and poor physique of the villagers will only be improved when the people realise that thay must start by rebuilding a healthy, living soil on which they can grow healthy, health giving crops, which in turn they must learn to harvest, preserve, prepare and eat in the right proportions.

It seems to me that two major changes are needed in Indian farming today:—

1. To get back to a basically organic system of husbandry where the maintenance of the health of the living soil is the foundation on which everything else is to be built. This cannot be done on any long-term basis with chemical fertilizers and pesticides. The use of lime and basic slag as and when specifically needed is not ruled out. These are soil conditioners which regulate pH (acidity) and encourage the formation of nitrogen-fixing nodules on legume roots as well as encouraging soil life. They are not direct plant foods. The most potentially dangerous fertilizers are the direct-feed nitrogen chemicals which force rapid plant growth which burns up the soil humus faster than Nature can replace it, and can seriously reduce the useful living organisms in the soil. These and pesticides are at best makeshifts to provide plant foods which a dead soil can no longer supply and to hide the symptoms of pest and disease which are themselves an indication of bad husbandry.

2. To change to an economy where the production of high-quality, health-giving food *for use in the village* is the top priority, and the growing of cash crops for sale is at all times second to the growing of food to eat.

Which of these changes presents the greatest difficulty is hard to say. Both of them involve a complete break with generally accepted practice and Government policy. I do not suggest that anyone should try to change overnight. It would be wise to start on a very small scale with limited experiments carefully carried

Priorities for support

All my experience with the problems of the developing countries leads me to believe that in the long term the only true and worthwhile help is that which the people themselves provide from their own efforts. Any sustained aid from outside makes the recipients more and more reliant on hand-outs and less able to stand on their own feet. This tendency is compounded when aid takes the form of advanced technology involving high capital investment. This is not to say that advanced technology should be denied to developing countries, but merely that they should achieve it only through their own efforts and feel responsible for putting aside sufficinet capital to repair and replace it as it wears out. In the case of Indian villages the move towards Western standards must needs be slow if it is to be self financed. I believe that outside help is essential in the early stages, but that it should be limited to 'pump-priming' support for low cost enterprises which have a good chance of success, using the skills available within the community concerned; or to strictly time-limited aid in the payment of teachers' salaries etc. until the whole project is ready to take over the responsibility. Only in cases of extreme destitution or misfortune should outright non-productive donations be made.

I must end by re-stating my conviction that the principles of good soil, crop and animal husbandry are universally the same. Nothing I saw in the Amarpurkashi village group in any way alters my view; indeed I am more than ever convinced of the truth of this statement. □

Books

Technology and employment

Technological change and employment—A study of *Plantations by T. Bhatry, Macmillan*—1978 *Pages* 221 *Price Rs.* 75/-.

THIS STUDY of impact of technological change on employment in Indian Plantations is in the series of studies on agricultural technology sponsored by I.L.O. under the World Employment Programme. It is confined to coffee and tea plantations in India. It is well known that technological changes have important implication for employment and a study of this nature has obvious significance for the developing countries like India where poverty is ascribed largely to unemployment and underemployment.

The study starts off with a lucid exposition of the distinction between biological and mechanical technological processes. This distinction is important because the implecations for employment of labour differ in the two cases. The biological innovations on the whole do not tend to be labour substituting unlike the mechanical innovations. This observation should presage the kind of conclusions that the study is expected to throw up.

The study is confined to a given point of time and does not throw light on the impact of changing technology over time. However, it studies the impact on a cross section of the plantations selected on the basis of their size. Change in technology is indicated by the ratio between gross value of output per unit of labour. The plantations selected for the study are classified into three levels of technology on the basis of variations in this ratio. Three levels of technology are indicated, rather arbitrarily, as admitted by the author. The sample for tea plantations comprises 49 plantations out of a total registered number of nearly 13,000. The sample for coffee plantations is 42. There is no indication of the total number of coffee plantations from which this sample is drawn. It is stated that in view of the resource constraint it was not possible to go in for a larger sample. It is not very clear whether the sample is adequately representative.

The author has defined change in technology as getting the same amount of output by using less of the inputs. From this point of view, the study concentrates on the physical factor inputs—land, labour, intermediate material inputs and capital flow services at different levels of technology. It is found fairly conclusively that the input of each factor systematically declines as one moves from lower level of technology to the higher. It is also seen that this decline is independent of the size of plantations. Thus, size by itself is not a constraint for adoption of biological innovations. Another important conclusion is that policies affecting input prices are not likely to affect the change from lower level of technology to higher because relative prices of factors of production do not have any impact on such change. The crux of the problem is then: why do not all plantations move from the lower to the higher level? The answer is the absence of proper management and access to information. The smaller plantations can therefore be more effectively helped not by subsidising the prices of material inputs but by making available to them the necessary technological know-how.

It is clear that as a result of change in technology, the factor inputs decline. But do all of them change in the same proportion? It is very important to know this because the main point of the study is the impact of technology on labour input. The application of more inputs like fertlizers need not displace labour. On the other hand, it may in all probability mean more output which may call for more employment of labour. However, there can be substitution between labour and certain inputs of plant protection like weedicides. In fact, the study underlines the fact that there was generally a decline in labour input per unit of land in respect of weeding as technology improved. However, the subsequent increase in output resulted in a substantial labour demand for plucking operations. On the whole, the conclusion is that the net effect of intermediate material inputs on employment at each higher level of technology is positive.

There was yet another way the technology change had a positive contribution. It was instrumental in bringing about substantial increase in the incomes of the workers. The average level of earnings particularly in coffee plantations, even in the bigger ones, was lower than the poverty level. Thus technological change which contributes to the raising of the living standards of the workers must be welcomed in the context of the objective of poverty removal.

At the same time, another aspect of the question must be noted. The proportion of value added to gross value of output progressively rose with the level of technology. But the income levels of the non-wage earners increased faster than those of wage-earners. This certainly meant more inequality as between the working class and the capitalist class. According to the author, this should not clash with the Plan objective of removal of poverty because what the Plan seeks to achieve is mainly the removal of absolute poverty. Thus the author does not wholly agree with the approach of the Planning Commission that the twin causes of poverty are underdevelopment and inequality. He would rather have inequality increased so long as it means reduction of absolute poverty.

On the whole, according to the study, technological change in plantations had a positive effect on employment. But there is the indirect effect still to be reckoned with. In estimating the indirect employment effect the author follows the Keynesian Multiplier Principle. He himself does not seem to be happy with this approach but probably no better tool is available. The Multiplier principle works through the sequence of additional income—saving—investment—employment as well as through additional income—consumption—employment. No estimate for the former has been provided as it was not possible to estimate the increase in savings or investment of the planters, while savings on the part of workers is ruled out. As for the latter, additional incomes create demand for more consumer goods and therefore more employment to produce them. On the basis of assumed propensity to consume, the indirect effect on employment is estimated and it is found to be quite significant. So the

total impact of technological change—direct and indirect—on employment is stated to be positive and significant.

The above findings are broadly true for both coffee and tea plantations. However, there were some variations.

The tea industry is well organised and dominated by large plantations unlike the coffee industry. Corporations own 85 per cent of the area under tea as contrasted with only 12 per cent in the case of coffee. What distinguishes a small tea planation from a high one is the capative processing facilities with the latter and also the inability of the small ones to employ a professional manager. The more fundamental problems of the small growers are of a technological and organisational character—the inferior quality of planting material used, lower standards of cultural practices and an inefficient system of crop harvesting.

Tea plantation industry is rather more important than coffe plantations. They employ more than seven lakh persons as compared with just about 2 lakh persons employed in the coflee plantations. The issue of technolocial change and employment is therefore more crucial in the case of tea plantations. At the same time, it must be noted that labour in tea plantations is among the most organised in the country. It is also more skilled as tea harvesting requires more training and skill.

It is comforting that technological change would not displace labour in the two plantations. But this conclusion does not seem to have a wider relevance. They may share with the rest of agriculture, forestry, animal husbandry, etc. the fact that technological change, in their case, takes the form of biological innovation but the similarity seems to end here. In perspective, therefore, the utility of such a study is rather limited.

—M. R. Kulkarni

Rural Labour

Village Society and labour Use

by *Biplab Dasgupta with poy Laishely Henry Lucas and Brian Mitchett* (*Village Studies Programme, University of Sussex, Brighton, Delhi, Oxford University Press*) 1977, *pages* : *vii* 211 *Bibiliography Index* (*Cloth*) *Price Rs.* 40/-

THE BOOK UNDER review is a study prepared for the International Labour Office, within the framework of the World Employment Programme, at the Institute of Development Studies, University of Sussex, Brighton. Using a huge set of data relating to 126 villages collected by the Agricultural Economic Research Centres in India which conducted village surveys, found that there is a close correspondence between the demographic and ecological characterstics of a village and its labour use pattern. Accordingly a typology of village secio-economic systems was developed based on various alternative uses of village labour time —such as work on the family farm, hired agricultural work, non-farm activities, work outside the village and leisure. It was also examined in this research monograph how far this typology provides a dynamic theory of rural labour utilisation.

Besides some technical paraphernelia like a very useful bibliography, index etc. the book contains five chapters, the first being an introductory one. The vast literature on labour utilisation in villages is surveyed in chapter 2 covering many Asian and African countries. The methodology is outlined in chapter 3. Chapters 4 and 5 present the result of the study in great detail.

Apart from several important conclusions that interest the technical reader for whom the study is mainly meant for, a few conclusions having policy. implications are as follows : First labour participation rate is relatively higher in villages where the degree of inequality is less and where most houheholds are engaged in family based subsistence farming. On the other hand, labour participation rate is less in villages with a higher degree of inequality (particularly because women, old people and children of the richer houses do not participate). Second, in general the rate of participation in the labour force is highly influenced by the participation rates of the women, children and the old. Further, commercialisation of agriculture resulting fall in the labour participation and a shift of labour from family-based to 'hired labour' based farming. Modernisation of agriculture does not necessarily reduce the demand for labour but adversely affects the participation of the village population in the work force—the same amount of work is now done by a smaller number of hired workers who work for longer hours.

This quantitiative research monograph forms one of the most important studies on rural labour in India. Unfortunately such a rich volume was photo-printed from a typed copy. which provides an uncomfortable reading.

Jandhyala B G Tilak

BOOKS RECEIVED

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1. Aspects of Gold Policy

—S.L.N. Simha,
Published by Institute for Financial Management and Research, Madras.

2. Local Government its role in Development Administration

—V. G. Nandedkar,
Published by Concept Publishing Company, Delhi.

3. Public Administration

—Mohinder Singh, R. N. Sharma,
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4. The Politics of Panchayatraj Administration,

—Niranjan Pant,
Published by Concept Publishing Company, Delhi.

5. Administration of Justice in India

—T. K. Mann,
Published by Concept Publishing Company, Delhi.

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Development Notes

Increase in Power Generation

THE POWER generation in the country increased by 13 per cent during the first nine months of the financial year 1978-79. Except some shortage in certain pockets in the country the overall supply position made significant improvement. New generating capacity of 1717 MW had been commissioned by December 1978. While hydel generation had shown remarkable increase, the generation from thermal plants had also improved significantly Thermal generation in November and December 1978 was higher by 8.54 per cent. To investigate the major problems in the way to maximisation of power generation in elected thermal and hydel stations has been organised. To ensure the operation and maintenance procedures technical parameters of operational efficiency of the machines are being maintained and the constitution of a team of experts for roving monitoring of the plants has also been decided. □

Tractor Demand and Production up

DEMAND for and production of tractors has been on the increase. In 1977-78 as many as 40,946 tractors were sold and in the financial year 1978-79 the demand was estimated at 56,450 against the Planning Commission's demand projection of 42,000. At the end of 1978 there were four lakh tractors in the country. Demand for this farmers' friend is strong in northern India.

In 1978, about 53,000 tractors were sold out of which 26 per cent were of less than 30 H.P. and 51 per cent of 30-39 H.P. At the present level of tractor production, India ranks fifth in the world for output and sales after the USSR, the USA, Germany, and France. □

Turnkey Projects Abroad-Big Money Spinners

INDIA earned Rs. 250 crore from turnkey projects abroad, in 1977-78. In addition there are projects worth Rs. 675.42 crore in the pipeline.

In Libya alone, India executed projects worth Rs. 600 crore. In December last a protocal was signed for the construction of 600 MW Zuara power station costing about Rs. 500 crore. India executed projects most successfull also in other countries like Kuwait, the United Arab Emirates, Iraq, Nigeria, Tanzania, Mauritius, Thailand, and Malaysia.

The most important feature of these contracts is that our country has bagged them against stiff competition from the multinationals and the declared preference of the host countries for the sophisticated technology. Libya, Nigeria and some other countries approached India for the techno-economic feasibility surveys. We supplied know how for Nigeria's steel sector. □

More Export Contracts to PEC

PROJECTS and Equipments Corporation, a subsidiary of STC finalised export contracts worth Rs. 57 crore in the period April to January of the financial year 1978-79 : rise of more than 100 per cent of Rs. 27 crore worth of contracts during the same period in the preceding financial year. As a result aggregate order booking stands at a staggering figure of Rs. 100 crore.

The orders involved supply of rolling stock and a wide range of other engineering items. PEC also undertook turnkey projects either independently or by working as sub-contracters. The Corporation secured orders from Vietnam, Sri Lanka, Uganda and Nigeria for over 1300 wagons and 136 coaches. Further the Corporation already supplied about 250 passenger coaches, and over 600 freight cars to many countries including Taiwan, Zambia, Tanzania, Bangladesh, Yugoslavia, the Phillipines, Korea and Burma.

In developing countries, Indian railway equipment is very popular which is evident from the large number of repeat orders placed with PEC. In January 1979, it executed a repeat order for 30 passenger coaches to the Phillippines. Also the Corporation shipped 66 hopper wagons to Bangladesh. A contract for 34 coaches, was signed with Sri Lanka. □

Exports of Marine Products up

EXPORT of marine products during the period April—December, 1978 has shown an increase of nearly 20 per cent. The value of these exports amounted to Rs. 143.75 crore as against Rs. 118.29 crore during the corresponding period of the perious year. In terms of quantity the increase was comparatively lower from 41,074 tonnes to 47,019 tonnes i.e. an increase of only 13 per cent. Japan and United States, at present, account for nearly 90 per cent of our exports. Exports of marine products—mostly canned and frozen shrimp and frog leg—to EEC countries nearly doubled from 2,842 tonnes in 1974 to 5.121 tonnes in 1977. India's share in EEC countries imports of marine products, came to eight per cent in terms of quantity and seven per cent in terms of value. □

Trade with Thailand

BHARAT Heavy Electricals Limited (BHEL) have secured an order for the export of three big hydro-turbines of the capacity of 28.8 MW each to Thailand for the Pattani project.

For the first 120 MW to be installed at the Tripoli West power station in Libya, the firm has already despatched the power material and equipment of similar quantum for the second set is in the advanced stage of manufacture. □

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