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State:

State Budget for 1977-78. The final budget for the State for 1977-78 was introduced in the Assembly by the Finance Minister at the end of June. Since the new government had just taken over (3 weeks ago), the budget was mainly a holding operation, with some tax concessions, some additional welfare measures for the weaker rural classes and a response to the demand of the government employees for increased emoluments—all of which have more than tripled the deficit. In fact the financial position is much worse than the budgeted deficit which goes up from Rs. 13.92 crores (see Vol VII p 275) to Rs. 18.89 crores. The real deficit is larger. On Revenue Account receipts are estimated at Rs. 633.24 crores and expenditures at Rs. 663.40 crores giving a deficit of Rs. 30.16 crores. On Capital account, receipts are estimated at Rs. 246.34 crores and expenditures at Rs. 285.40 crores involving a deficit of Rs. 39.06 crores. The total deficit is thus Rs. 69.22 crores to meet which it is proposed to draw Rs. 40.51 crores from the public account, which is an account containing funds which must be returned to the owners. Further the anticipated revised deficit of 1976-77 of Rs. 9.98 crores has turned into a surplus of Rs. 9.62 crores so that the net deficit is shown as Rs. 18.89 crores. There is also the further Rs. 5.70 crores deficit created by the various tax concessions and increased pay to government staff to be referred to later. The additional duties proposed amount to a mere Rs. 50 lakhs which again will be offset by the various tax reliefs offered. The moral is clear. The government will have to raise additional taxes and the two major sources are the well-to-do farmers in the agricultural sector and sales tax on non-essential goods and services. There must be additional mobilisation of resources to ensure the industrial and agricultural development of the State. The fiscal measures proposed are: (a) the only increase in taxes are the increase in excise duty on Indian made foreign liquor from Rs. 14 to Rs. 17 per litre and that on rectified spirit exported out of the State from 50 paise to 70 paise per litre which altogether will bring in Rs. 50 lakhs per annum; (b) the others are relief and concessions in (i) abolishing the increase on class I and II irrigation rates on commercial crops, reducing the irrigation rates on class I and class II, reduction of the special assessment on some commer-

cial crops, and withdrawal of rates on short term commercial crops (leading to a revenue decrease of Rs. 2.5 crores), exemption from sales tax on certain essential items, relief in sales tax on hosiery industry, a single point tax on some articles, rationalisation of sales tax to avoid hardship to assessees, and lowering of entertainment tax (leading to a revenue loss of Rs. 40 lakhs) and a one lakh subsidy to a number of low budget films with social content. It is hoped that a certain part of the deficit (Rs. 18.89 crores plus Rs. 5.70 crores arising from the above reliefs and the increased pay to employees to be referred to later) will be made up by economies, better tax collection and improved performance of public sector units. The budget also announced the setting up of 2 committees, one to study irrigation and rates and the other to study sales tax structure. On the expenditure side (a) the Annual Plan is increased marginally from Rs. 260 crores to Rs. 263 crores allocated to (i) power Rs. 94.9 crores, (ii) irrigation Rs. 24.7 crores, (iii) agriculture and related activities Rs. 30.2 crores, (iv) industry Rs. 13.8 crores, (v) transport and communications Rs. 25.2 crores, (vi) water supply and sewerage Rs. 2.65 crores, (vii) education Rs. 13.3 crores and (viii) other social and economic services Rs. 34.9 crores; (b) in addition to the allocation to agriculture, animal husbandry and fisheries, Rs. 145 lakhs are provided for the State Land Development Bank to aim at providing Rs. 18 crores as agricultural credit; (c) the irrigation outlay of Rs. 24.7 crores will complete 7 irrigation schemes benefitting 35,000 acres of new areas and stabilising irrigation in 77,000 acres. A new reservoir at Kamandalar in North Arcot district is to be constructed and modernisation of the Cauvery and Periyar schemes, together with minor irrigation schemes, wells and energisation of 30,000 pumpsets are provided; (d) in addition to the existing 2,364 MW, Kundah IV and Suruliyar Projects will add 145 MW to the grid, the Tuticorin plant and the Neyveli 200 MW plant will be executed; (e) industrial development provisions are low, with expansion of TIDCO, work on the Ariyalur cement plant, Perambalur sugar plant, and development of leather, electronics, and sericulture. The underutilisation problem faced by 50 000 small units in the State is to be the subject of special study and for the year 10,000 small units are to be promoted. An expert committee to develop home industries, with priority to promote employment of women, is to be set up; (f) the development of handlooms will be undertaken, 30,000 additional weavers are to be brought into the co-operative sector and intensive handloom development is to be instituted at Salem, Madurai and Kurinchipadi; (g) on the basis of the survey of rural drinking water facilities now completed in 55,000 habitations, 16,500 have no facilities and for this year facilities will be provided to 4,010 habitations covering 17 lakh people; (h) in health special scheme is being started in 24 selected blocks in each of which 2 mobile teams will cover each village at least once a week, assisted by paramedicals for every 3,000 people and 54 voluntary agencies who will be supported in this programme to the extent of 50 per cent of their expenses; (i) in education, the 10+2+3 scheme will be implemented with Rs. 3 crores for vocationalising the + 2 stage and applying the V Plan (UGC) scales to university and college teachers. Rs. 21 lakhs are to be used for developing sports and games by the Tamil Nadu Sports Council and for student amenities; (j) Rs. 2 crores are provided for the lending programme of Tamil Nadu Co-

operative Housing Society for rural houses together with the establishment of 50 rural co-operative housing societies; (k) on the welfare side, provision is made for educational concessions for SC and ST students, an increased outlay for the Tribal sub-plan (from Rs. 80 lakhs to Rs. 153 lakhs), and a system of annual stipends to indigent widows for their vocational training and a special welfare fund for fishermen and their families; (1) on the employment generation side in rural areas, employment is to be promoted in the non-agricultural season through the provision of Rs. 51.7 crores earlier referred to in medium and minor irrigation, rural roads, soil conservation and afforestation. A new programme proposed is the creation of a land army to maximise employment of young and able bodied persons in rural areas in order to create permanent assets for the benefit of the rural people. For this, the government announced the setting up of a committee for launching this massive employment programme during the next summer months; (m) in addition provision has been made for the development of Tamil, the setting up of the Third Pay Commission with comprehensive terms of reference, the grant of an additional Rs. 10 to the government employees earning Rs. 200 per month and above (costing Rs. 4.9 crores per annum), and improvement of housing and retirement benefits of government employees. The budget has also set at rest the question of State raffles, with their continuance as a source of revenue. There is a certain elan in the budget presentation which the newly installed popular government has brought in. As noted above, the areas for further development are with regard to the industrial sector which has been decelerating over the past 10 years, and a more determined effort to raise resources by restricting the consumption of non-essentials. There is also need for an All India policy on prohibition, until which time the Union government should provide some financial compensation to the 2 States which have adopted the policy at considerable financial deprivation.

Climate and Prices: The ongoing programme of providing drinking water to the drought hit villages and employment oriented public works programme continued in July. The government estimates that for this year Rs.739.24 lakhs would be spent on the programmes. The price situation continued during July at the same high level reported for May and June. The new popular government announced that to bring prices of essential commodities within the reach of the rural poor, 15,000 more fair price shops are to be opened in the State at the rate of one retail outlet per revenue village. In places where co-operatives could not open branches, the State Civil Supplies Corporation would start shops for distribution of essential commodities. Also the working of Co-operative Super Markets is being studied to make them viable units for stabilising during the lean season. To counteract the trend of rising groundnut oil prices, the State government is contracting with the Government of Gujarat to import groundnut oil. On the price front, CSO reports a rise in prices in December 1976 to 305 and a decline in January to 298, with both food and cloth prices falling. Rural prices which similarly fell in January to 294 rose again in February to 303, food prices moving sharply by 10 points from 312 in January to 322 in February. The Inter City price index for December 1976 showed a rise in Madras to 302 with lower levels and fall in Madurai and Tiruchy.

Power: The State's power situation continued to improve so that from July 1, the government announced the removal of the 30 per cent cut on certain categories of high tension consumers. As reported in the last issue (p 428), in view of the encouraging inflow into hydel reservoirs and the steady power supply from Kerala, the power cut in respect of all other categories of consumers has already been removed. The exchange of increased inflow of Mettur water from Karnataka for some power supply from this State has been the subject of some discussions between the governments of Tamil Nadu and Kerala as the latter raised questions about Tamil Nadu supplying power received from Kerala at concessional rates to Karnataka. This issue could have been avoided if there had been prior consultation between the two governments on the subject – except the urgency of water supply to Thanjavur farmers did not give the time for such consultations. The Tamil Nadu Electricity Board has appealed to all non-continuous power using consumers to observe the evening (6 P.M. — 9 P.M.) peak hour restrictions very strictly, so that outages do not occur due to overloading of the network because of such unauthorised working. The Board has also called the attention of consumers to the complaints cell (see Vol VII p 75) to speed up action by the technicians in attending promptly to fuse off calls and other problems.

For the country as a whole the power situation in July continued as in June with continuing shortages in the North West, Maharashtra and Karnataka. In Punjab a 40 per cent power cut on commercial and domestic consumers whose monthly consumption exceeded 300 units was imposed from July 25, while tube well owners are supplied with 10 hours of power daily, industries are under this 40 per cent cut. The situation will improve for Punjab next year when the third and fourth units of the Bhatinda thermal plant are commissioned in March and April at a cost of Rs. 67 crores. The government has also asked the Union ministry for clearance of the fifth and sixth units of 200 MW each at a cost of Rs. 115 crores. The State estimates that its power requirement will double to 7,700 million units by 1983–84 (from 3,750 million units at present). The State has developed a balanced hydel and thermal power plan to meet its energy needs for the Sixth and Seventh Plan periods. In Bihar, the State faces not only the usual problem of power shortage but poor management in its Electricity Board resulting in arrears of Rs. 70 crores in interest payable to the government and the increase in installed capacity in the last five years from 468.45 MW to 714.13 MW and generation from 1,438.20 million units to 2,468.27 million units which is not commensurate with the total investment of Rs. 400 crores in the power sector. Here the Board needs reorganisation and that is being done. In West Bengal, there is also serious power shortage leading to the requests to the Orissa government for hydel power from Hirakud and joint sector hydel projects in Koikard in association with Bihar and the Damodar Valley system. But even so the shortages will continue into the future. In the next 6 years 900 MW new capacities will be created (which is one and a half times the existing capacity) but the deficit at the end of the VI Plan will be 280 MW. To speed up its power projects, the Union Planning Commission has allocated for the current Annual Plan Rs. 99 crores and it is hoped that there will be improvement in the rate of execution of its projects with the new

government which entered office at the end of June. Assam which does not face a shortage will be doubling its generating capacity (from 141.5 MW to 313 MW) when the new 105 MW projects go on stream. In Karnataka, the first 135 MW unit of the Kalinadhi hydro electric project (stage I) will be commissioned in 1978–79. The project cost for the first and second stages which has been escalating stands at Rs. 228.23 crores, of which Rs. 118 crores have been spent. A further Rs. 41 crores is available this year and the Kuwait Fund for Arab Economic Development is lending the project another Rs. 45 crores. The first stage will contribute 4.122 billion units annually into the Karnataka power system. In the light of this general situation, the Union ministry expectation that its action plan for adding to the installed capacity to achieve self–sufficiency in power by the end of the Sixth Plan period may not be realised. The ministry's Plan is based on the estimate that during the VI Plan power demand will increase by an annual 10 per cent. One positive factor would be if the Central Electricity Authority gave expeditious technical clearance to economically viable projects, keeping in view the deficits that exist in the regions referred to above. The Union minister referred in the Lok Sabha to the 5 super thermal stations to be established at Singarauli (already under way), Ramagundam, Korba, Farakka and Neyveli II. The Neyveli project is to be an integrated plan, covering the second mine cut.

Water: During July the Mettur reservoir began to fill very slowly. On July 7, the level of water was 55.25 feet with an inflow of 1,000 cusecs and on July 10, 55.15 feet and inflow of 745 cusecs. On July 10 the Chief Ministers of Tamil Nadu and Karnataka met and agreed that Karnataka would provide one tmc of Kabini water for 10 days and in return Tamil Nadu will double the quantity of power supplied to Karnataka to one million units per day. On this basis water for irrigation in the Thanjavur delta was released from July 19. The Mettur reservoir was opened for irrigation on July 15 and the supplies on the Grand Anicut reached it by the 19th. Supplies were given to the Cauvery, Vennar, and Grand Anicut Canal systems and also for the lower Coleroon Anicut system. This saves the *kuruvai* cultivation as will be noted later. On July 22 Mettur reservoir reported 46.75 feet of water with an inflow of 8,681 cusecs and a drawal of 24,653 cusecs. There is here a long term problem that the State—the government, the people and particularly the farming community in Thanjavur—will have to face and that is that the Cauvery waters will not be available any longer as prior to the construction of the Kabini and Krishnaraja Sagar dams and reservoirs and this fact must in the long run be taken into account in planning the State's agricultural practices in Thanjavur and Tirunelveli Districts.

Housing and Urban Problems: The MMDA project which includes improvement of 85 city slums with 23,000 households covering an area of 185 hectares involves provision of one stand pipe, one toilet, one bath facility per 10 households, new roads, foot–paths, drainage, vehicular and pedestrian access, 10 primary schools, 3 high schools, plots for a pre–school for every 100 households, one cottage industry centre for every 365 households–at an average cost of Rs. 1,300 per household. The project promotes low cost solutions to problems of shelter, employment, water supply, sewerage and transport and decentralises execution to the Tamil Nadu Housing Board, Slum

Clearance Board, SIDCO, Handicrafts Development Corporation, Department of Social Welfare and Madras Corporation. The 7 member Committee set up to review the problem faced by pavement traders and hawkers has started its work with a study of the Parry's Corner and Flower Bazaar areas with special reference to the social and economic problems faced by these groups. IOC reports an increase in the number of LPG gas connections in the city, with some 8,000 out of 38,000 applicants being provided the connections. When the Mathura refinery and Bombay High go into production, the gas supply can meet the requirement of all the 66,900 households who are in need of gas. The beggar problem is mounting in the State and the Country, with a total of over 1.011 million persons in the category and nearly 15,000 being children of upto 14 years age. Both legislation and socio-economic programmes such as executed in the State in 1973 (see Vol III p 402) are needed to deal with this tragic human problem.

Government Staff and Welfare Legislation: The government abolished as at July the classifications of government staff into gazetted and non-gazetted and in place established a four tier classification—group A: Rs. 1,000 and above in pay; group B: Rs. 400-Rs. 1,000; group C: Rs. 140-Rs. 400; and group D: the others, along levels used by the Union government, following the recommendations of the State Administrative Reforms Commission. The State Assembly in early July passed the Debt Relief Laws (Second Amendment) Bill to extend by 6 months beyond July 15 the period of moratorium on recovery of debts from agriculturalists and others and the injunction on sale of pawned articles in view of the continued effects of drought conditions in the State. This is a continuation of the legislation passed in 1975 (see Vol V p 264), which has since been extended 6 months at a time. The government also announced its intention of setting up a committee of experts to examine the extent and magnitude of rural indebtedness in the State and the means of alleviating it.

National:

Union Budget: The Union Budget for 1977-78 analysed in the last issue was passed by the Lok Sabha in mid July. At this stage, the Finance minister extended the investment allowance to small industry including those producing what he had termed low priority items (refrigerating and air-conditioning appliances, watches, computers, motor cars, and motor cycles, fork lifts and platform trucks), extended also the higher investment allowance of 35 per cent to those using indigenous knowhow developed in any institution recognised by government, tightened the definition of rural areas and extended the tax concession to co-operatives, withdrew the reduced import duty of 2.5 per cent on newsprint, announced concessions to hand tools, small tools, weighing machines, handloom, controlled cloth, art silk, scrap and mini steel plants, aluminium vessels, and restructured tariff rates on exposed cinematographic films. These concessions amounting to Rs. 21.6 crores increase the budget deficit from Rs. 72 crores to Rs. 93.6 crores. The interim report of the Jha Committee (see Vol VII p 108) recommends lower excise duties on diesel engines, pumpsets and tractors and cement to increase the capacity of the small farmer to use these aids. It has recommended that *ad valorem* duties should replace specific excise duties with

a built–in elasticity to national income. The tax system should be widened as present selective taxes tend to divert consumption to untaxed items and the high rates are counterproductive. Also the excise duty on textiles should be related to value of the fabric and not quantity, and the heavy duties on inputs which favour high class consumption should be lowered. Also the relation between import control and tariff should be such that imports are not sold at high prices,raw materials which are substitutes for each other should be taxed at the same rates and tax on small producers should be based on value of production on a slab system. Sales tax by states should minimise the tendency for industries to get their inputs from other low taxingStates and the Central sales tax rates should be used as *de facto* ceilings on the rates of tax on inputs. It also recommends a phased abolition of octroi. The recommendations should be studied by the Union and State governments for implementation in the next budget round.

VI Plan: Sixth Plan preliminary discusssions centre around the implications for re–ordering priorities as a result of the shift toward accelerated development of agriculture, irrigation and the rural sector generally. There are basic questions to be faced. What are the implications of this on investments in the capital goods, heavy industry sector, on manufacturing intermediates, on commitments of the previous government with regard to steel, fertilisers, and oil refineries? What of the spill–over projects and the constraints of resources? Unless the well-to-do sections of the rural sector are taxed, there will not be more than 10 to 15 por cent of Plan outlay available for the new priorities. Three studies in the Commission now under way are intensification of agricultural schemes to raise farm incomes within five years, identification of industrial sectors which will provide increased employment,and the policies and policy instruments needed for the above two aims. This last is the real urgency for without a clear policy framework, policy instruments and programmes will be of an *ad hoc* character.

Prices and Anti Inflation Measures: The wholesale price index continued to rise in June by 0.7 per cent (and 8.3 per cent for the 12 months period) at 188.3. During June cereals registered the largest rise at 2.9 per cent among primary articles, with oil seeds and pulses prices rising moderately at 0.5 to 0.6 per cent. Fibres, edible oils and jute textiles registered decline, while metal products rose by 4.7 per cent and sugar by 2.4 per cent. The *Economic Times* retail price index for Greater Bombay shows a higher June rise at 1.4 per cent. The highest rise was in food prices by 2 per cent, vegetables and fruits rising by 9.7 per cent, condiments and spices 4 pet cent, sugar 2.1 per cent and oil and fats 1.9 per cent. Cereal prices however fell by one per cent. A number of anti–inflationary measures are being taken. The Union cabinet met towards the middle of July and agreed upon measures to be taken to bring prices down and, for this purpose called a meeting of Chief Ministers of the States towards the end of July to agree upon a programme to control price increases. The RBI shows that aggregate monetary resources increased in June at a slightly lower rate at Rs. 444 crores as did money supply with the public which increased by Rs. 117 crores and for the week ending June 27 actually declined by Rs.70 crores. The government also instructed the Chief Controller of Imports and Exports to permit the import of limited quantities of

coconut oil and *copra* to bring down their prices and this as noted earlier, is being achieved. Also the 2.4 lakh ration shops, catering to 45 crores of people out of the country's 61.5 crores, are being expanded through which both primary and finished goods will be made available at reasonable prices. RBI is pursuing what it calls a tight credit policy and not a dear credit policy, in order to ensure that credit goes for essential production purposes. The Bank is concerned with high cost of investment funds, with the danger of our becoming a high cost economy. Thus banks have been advised not to charge more than 12.5 per cent interest for capital investment loans for agriculture and industry and priority sectors. RBI is tightening credit availablity against sensitive commodities and providing it on easy terms for imported oils and oil seeds. It distinguishes between genuine saving which is favoured and acts against dubious saving. It is tightening the refinance and rediscount facilities against food credit. It has laid down certain norms to be followed by banks regarding the transfer of loan accounts from one bank to another which apply particularly in the case of loan accounts having credit limits of Rs. 25 lakhs and above. As per the norms recommended by the Talwar Committee, each bank will constitute a committee to review proposals for transfering accounts to maintain financial discipline, while giving the customer the right to choose his bank. This will call for detailed credit information from the bank where the account is and the avoidance of lowering of interest by the new bank for 2 years to avoid interest rate wars. Two forces however will feed inflation. One is that there are parts of the Union budget with its inbuilt overt and covert deficits and subsidies which will exert an inflationary influence. The second as forecast in the last issue (p 438) is the decision made on July 22 to pay in cash the second instalment of the impounded additional dearness allowance amounting to Rs. 320 crores as part of the July salary payable in August This means that the government has gone back on its decision taken in May to credit the second instalment to the Provident Fund accounts of the employees of the Union and State governments and the public and private sectors. The government admits that this will have an inflationary effect. This will be seen during the second half of the year.

Economy: A further report on the Indian economy by the World Bank refers to the poor performance of the average return to investment compared to that of other under-developed countries. India's ICOR for 1965–73 compared to that of 118 countries shows that its low gross investment rate is not compensated by higher efficiency in capital use. Despite abundant labour and adequate resources, Indian ICOR is as high as that of the industrialised countries with more abundant initial capital stock and scarce labour. Among 101 developing countries, India's ICOR places her in the 73rd position and in its investment rate in the 72nd. If the process of diminishing returns to capital is not to continue, future investment strategy will have to improve capital allocations between sectors and increase the efficiency with which installed capacity is used. Total investments which increased between 1951–52 and 1965–66 from Rs. 1,240 crores to Rs. 3,490 crores, an annual growth rate of 8.3 per cent, has since decelerated to 3.7 per cent a year. The gross investment rate which increased rapidly during the first 3 Plans, stabilised during the 3 annual Plans and increased marginally in Fourth and Fifth Plans. Also the levelling of the invest-

ment rate coincided with sharp drop in foreign savings, but the marginal saving rate was high. Gross fixed investment increased from Rs. 1,100 crores in 1951 to Rs. 3,160 crores in 1964–65, again an annual 8.5 per cent rate of increase, after which it dropped to 2.7 per cent. As a per cent of GDP, gross fixed investment rate has been stagnant since the Third Plan and the rate of capital accumulation in fixed assets did not go up in 1974-75, stagnation was pronounced for gross fixed capital formation, which because of the severe cutback in Plan outlay during 1973–74 and in 1974–75 fell below the level of 1964–65. Private gross fixed capital formation has continued to increase without interruption but not enough to make up for the fall in public investment. Contrary to popular belief, the report notes, the share of public investment in total capital formation has not increased but decreased quite sharply compared to the level in the Second and Third Plans. In two important sectors—agriculture and machinery—the importance of the public sector investment is now smaller than it used to be in the early years of planning. In domestic savings, household savings provide the bulk (75 per cent) and the major part (75 per cent) is in the form of physical assets. The behaviour of public savings has been disappointing. Government's administrative savings are sluggish because increased tax revenues are eaten up by increased expenditure and savings generated by public enterprises have been low, despite large investments in them, because of low capacity use, poor management and inappropriate pricing. In 1974–75 public sector surpluses were only 20 per cent of public savings and 5 per cent of total domestic savings. The Fifth Plan assumed a high marginal rate of savings (26 per cent), a rate which has been achieved sporadically but never over a 5 year period when the highest rate has been 20 per cent. But this high rate is needed if the economy is to grow at 5.2 per cent, which means that public sector savings must triple and its share of GDP rise from 3.2 per cent in 1973–74 to 7.2 per cent. Administrative savings too must increase from 62 per cent to 71 per cent or from 2 per cent to 5.1 per cent of GDP. The use of foreign savings went up from 0.7 per cent of GDP in 1973–74 to 1.6 per cent in 1974–75. But after that the absorption of foreign savings fell because of the increase in foreign exchange reserves. With these foreign savings, the investment rate financing can be increased from 17.3 per cent in 1973–74 to 21 per cent in 1978-79. The report concludes with the thought that any short term increase in the investment rate can be effected by absorbing a larger share of foreign savings, but that in the long run a satisfactory rate of domestic investment depends on the domestic rate of savings. With the well developed infrastructure and underutilised industrial capacity, India must move rapidly towards a savings rate of 20 per cent, which a 6–7 per cent growth rate demands, according to the UN Leontief model of world development as applied to this country. The RBI study in its March Bulletin supports these conclusions. The rate of capital formation in 1975–76 at 14.9 per cent was lower than that of the previous year at 30.5 per cent, as gross domestic capital formation rose in 1975–76 only by Rs. 1,943 crores compared to Rs. 3,035 crores in 1974-75. The fall in capital formation in the private sector was sharp at Rs. 261 crores, compared to the previous year's Rs. 2,245 crores, while in the public sector it was high at Rs 1,682 crores compared to Rs. 790 crores in 1974–75. Net domestic capital formation

rose from 13 per cent of NDP in 1973–74, to 14.7 per cent in 1974–75 and 16.2 per cent in 1975–76. The share of the public sector in total net domestic saving was 17.1 per cent in 1973–74, 23.4 per cent in 1974–75 and it fell to 21.5 per cent in 1975–76. While national income at constant prices rose by 8.8 per cent in 1975–76 (0.2 per cent in 1974–75), at current prices it increased only by 3.7 per cent compared to the 1974–75 rise of 17.7 per cent, respecting price movements. In per capita real terms, the rise was 6.6 per cent in 1975–76 (the highest in a decade) but at current prices only 1.6 per cent.

Industry and Public Sector Performance: According to the annual report of the Industry Ministry for 1976–77, there is no backlog of industrial licensing applications. During the year, 545 letters of intent and 662 industrial licenses were issued, among which new undertakings accounted for 256 of the letters of intent and 254 industrial licenses. 1,044 industrial applications were disposed of during the year, a third of letters of intent and a fourth of licenses being for backward areas. 432 foreign collaboration applications were decided, 101 being rejected, 46 being available domestically, 63 of the approved ones being in electrical equipment, 57 in industrial machinery, 36 in chemicals and 18 in transport. The value of capital goods approvals was Rs. 147.04 crores, including Rs. 32.97 crores for export oriented ones. A study by the Economic and Scientific Research Foundation on the production function in Indian industry shows that there has been considerable substitution of capital for labour in Indian industries alongside of constant returns to scale and neutral technical progress. The average annual rate of technical progress between 1946 and 1958 was 3.3 per cent in cotton textiles, 4.6 per cent in bicycles, 5.9 per cent in jute, 5.3 per cent in paper, 2.3 per cent in rice milling and 3.7 per cent in wheat flour, with little benefit to the consumers, as indirect taxes increased product prices at a trend rate of 2 to 3 per cent, and in many industries raw material prices rose more than product prices. With deepening of capital intensity, wage and labour policies reduced management control over the labour force and labour cost, while productivity was reduced. Also between 1947 and 1969 labour in Indian manufactures became 93 per cent costlier compared to capital, while in the US labour was only 59 per cent costlier in the period. As noted in the World Bank Study, substitution of capital for labour in India was of the same magnitude as that in US and Australia. Using the efficiency norms for classifying regions and size groups, the study's finding is that in regions with above average 10 per cent efficiency, labour was associated with a higher 11.21 per cent efficiency. In size groups, a 10 per cent higher efficiency of labour was associated with a 12.7 per cent overall efficiency. Among those with below average efficiency, a higher efficiency of labour was associated with 6.3 per cent overall efficiency in regions and 9.2 per cent in size groups. This means that industrial units with above average efficiency can improve their performance through better use of labour and those with below average efficiency will need capital to be equally efficient. On public sector performance, the Annual Report of the Ministry of Industry refers to their plans for modernisation and diversification of product range, such as the Instrumentation Limited, Kotah and its Rs. 2 crore modernisation programme, HPF's programme for a Madras unit to

manufacture X-ray films, and the Artificial Limbs Corporation, Kanpur, to establish a network of regional and peripheral limb fitting centres in several cities. The units under the Department of Heavy Industry attained Rs. 828.78 crores in total production in 1976–77, being 10 per cent higher than the previous year's Rs. 751 crores, due to increased use of capacity at constant prices. The target for that year was Rs. 852 crores, the shortfall being due to power cuts, raw material shortage and inadequate demand. For this year the target is Rs. 1,000 crores and a target of Rs. 72 crores as profits compared to last year's Rs. 65 crores. The major problem this year is the poor order book position of the major undertakings. In 1976–77, tractors, industrial machinery and cars exceeded their targets, while transmission towers, scooters, machine tools and cement machinery increased their capacity utilisation. In paper and pump machinery, road rollers and railway wagons, however, there was a fall in production.

National Production Front:

Steel: During the 3 three months, April to June, saleable steel output was 1.681 million tonnes which was 1,25,000 tonnes more than that of the first quarter of 1976–77, with the SAIL plants producing 1.121 million tonnes, compared to last year's first quarter of 1.08 million tonnes. Bhilai and Rourkela passed their target at 105 and 107 per cent, Bokaro at 100 per cent and Durgapur 85 per cent. Production in June was high, Bokaro exceeding the June 1976 production by 68 per cent, Rourkela 44.7 per cent and all SAIL plants 14.5 per cent. Also the offtake surpassed production in the first quarter, reducing stocks by 1,70,000 tonnes. SAIL units sold 1.12 million tonnes in the domestic market during the first quarter, compared to last year's first quarter sales of 0.825 million tonnes. Export shipment in June was 2,34,000 tonnes. To further improve offtake, the ministry has changed the steel distribution policy, under which industrial units registered with DGTD, Corporations and government departments can indent their steel items directly with the steel plants at JPC prices. The stock-yard sales system will remain in its present form mainly for the benefit of the small consumers. The ministry has also asked the Department of Coal to replenish the dwindling coking coal stocks at the plants in order to make up for the lag in supplies in April–June and the poor quality of the coal supplied. For the year the coking coal supply needed by the plants is 15.95 million tonnes. The ministry also proposes that the further expansion of steel industry may be both by setting up new plants and expanding the capacity of existing plants. Under this proposal 6 new plants and expansions will increase production capacity from 10.5 million tonnes to 18.5 million tonnes. The six new plants under consideration are Vijayanagar 3.2 million tonnes, Vishakhapatnam 3 million tonnes, Nayagarh 2 million tonnes, Bailadilla 3 million tonnes, Surajgarh 2.5 million tonnes, and Salem alloy steel. Also a plant on the west coast to use Goa iron-ore or Bababudan iron-ore is being considered. The expansions are Bhilai from 2.5 million tonnes to 2.6 million tonnes, Durgapur from 1.6 million tonnes to 1.8 million tonnes, Rourkela from 1.8 million tonnes to 3.6 million tonnes, Bokaro from 1.7 million tonnes to 10 million tonnes and TISCO and IISCO by 1 million tonnes each. This is the changed future thinking compared to that of the previous governments—see Vol. VI

pp 79, 311 and 370). On the demand side it is estimated that domestic demand will be 14.5 million tonnes in 1983–84, 21 million tonnes in 1988–89, 30 million tonnes in 1993–94 and 43 million tonnes in 1999–2000. If 10 per cent of domestic demand is exported, the total demand will be 16 million tonnes in 1983–84, 23 million, 33 million and 47.3 million tonnes for every 5 years after that, and capacity for crude steel will be 18.8 million tonnes and will increase every 5 years to 27.2 million tonnes, 38.8 million tonnes and 55.6 million tonnes by the year 2,000. Steel sheet prices increased by Rs. 4,000 a tonne in mid July in reaction to increased import duty (from 120 to 220 per cent) on steel sheets. If the government does not give budget support to public sector steel plants as suggested by the steel minister in the Lok Sabha, there might be some rationalisation, if not decontrol of steel prices. After the minister openly acknowledging that the problem with Durgapur Steel is that it was the subject of wrong planning and wrong execution, SAIL is formulating a comprehensive plan for the development of its technology and improvement in its viability, starting with installing a blast furnace complex to increase its capacity. Also its 5-A coke oven battery finally went on stream in mid July. With its coke oven batteries and the 5–A running smoothly it will reduce its losses by half. IISCO also whose ingot steel production had fallen to 30 per cent of its capacity and saleable steel to 13 per cent in 1972 when it was taken over (Vol. II No. 9 p 10) has now completed 85 per cent of its Rs. 43 crore modernisation programme and by June 1978 will be functioning as an integrated plant producing 85 to 90 per cent of its 1 million tonne capacity.

Crude : Domestic crude demand is estimated at 23 million, with indigenous production at 8.8 million tonnes in 1976–77. Imports last year were 14.2 million tonnes and the import bill will be Rs. 1,530 crores, the effect of the decision of Saudi Arabia and UAE to increase their crude prices by 5 per cent (see last issue p 445) will mean an additional outgo of Rs. 9.5 crores during 1977. The prospects of attaining self–sufficiency in crude demand by the mid eighties planned by the previous government is not realistic. Last year's growth rate of petroleum products consumption was 5.9 per cent. Even if Bombay High produces 10 million tonnes by 1981, the total supply onshore and offshore would be 19 million tonnes compared to the present 8.8 million tonnes while the demand will rise from 23 million tonnes to 32 million tonnes—calling for an import of 14 million tonnes. In this context, the need for intensifying domestic production is imperative. ONGC plans to produce 4.2 million tonnes from its Gujarat oil fields this year as against 4.17 million tonnes last year. This year, drilling of 50,750 metres for exploration of new areas in Gujarat is under way. Oil India has prepared plans to drill two deep wells in Arunachal Pradesh in addition to its 5 wells there and with its takeover which is now in the final stages of negotiation, ONGC plans to double its present production of 3 million tonnes. Bombay High will be adding 40,000 barrels a day in each of its five stages. In this connection, the 50 per cent decline in the supply of barrels of the industry—from 3,000 to 1,500 barrels—will decrease the supplies of industrial lubricants, grease, paints and petrochemicals. Bokaro and Rourkela must meet in full the quantity and quality of the barrels needed. On this basis the year's crude output is expected to be 11 million

tonnes, an increase of 35 per cent over last year. The World Bank loan of Rs. 135 crores will be utilised to finance the third pease of Bombay High which is the development of 20 additional wells, 5 well platforms, 3 production platforms equipped with processing and pumping facilities, 10 sub-sea pipelines, an offshore terminal including gas and oil processing and storage facilities. When completed, the Bombay High and Bassein oil and gas fields will produce 1.4 lakh barrels of oil and 22 million tubes of gas per day. The 2 offshore oil fields will produce 13 million tonnes of oil, saving $ 16,000 million over the next 20 years. Some setbacks in this connection are the notice given by the American Consortia—Natomas—Carlsberg and Reading—Bates—to terminate their contracts from August 1 for oil exploration in Kutch, and the delay over the decision to go ahead with the Haldia refinery. Another area to be further intensified is saving and conservation in crude and petroleum products use. IOC has helped 35 industries in saving 21,167 kilolitres of furnace oil per annum worth Rs. 2.16 crores. In its next phase it will help 34 more units to save 10,000 kilolitres worth Rs. one crore. On the whole, Coal India reports that 2.8 lakh tonnes of fuel oil have been saved through substituting coal for petroleum products.

Coal: The Annual Report of the Department of Coal states that in 1976-77 coal output was 101 million tonnes. Due to slackness of industrial demand, coal stocks mounted to 14.6 million tonnes at the end of the year—an increase of 3 million tonnes over the previous year end. Coal exports were 6.2 million tonnes, including exports to non-traditional areas of Western Europe, Japan, and Taiwan. It states that it will meet the country's demand for steam coal including that needed by textile mills in Gujarat and industrial units in Rajasthan and the South with the co-operation of the railways. The Mining, Geological and Metallurgical Institute reports that India's proven coal reserves are 80,124.81 million tonnes, with Bihar leading with 35,230.19 million tonnes, followed by West Bengal 19,618.90 million tonnes, Madhya Pradesh 15,482.44 million tonnes, Orissa 5,116.48 million tonnes, Maharashtra 2,621.65 million tonnes and Andhra Pradesh 2,055.15 million tonnes.

Copper and Aluminium: The rise in the import duty of copper in mid July has made imported copper and copper scrap scarcer and dearer to which producers of engineering items, artware and handicrafts will have to make the necessary adjustments. On the other hand, high targets have been established for the year—aluminium 2.23 lakh tonnes (Balco 40,000 tonnes, Indalco 75,000 tonnes, Hindalco 90,000 tonnes and Malco 18,000 tonnes) and 28,450 tonnes for copper. Even so aluminium may be in short supply and an import of 50,000 tonnes may be needed at a cost of Rs. 50 crores. Hindalco has had to cut its production by 40 per cent in July due to the serious power shortage (nearly 100 MW). It has shunted 206 pots in smelters and production has fallen from 280 tonnes to 165 tonnes per day. This means that the total output of aluminium in 1977 may fall to 2 lakh tonnes—against 2.40 lakh tonnes in 1976, with consequences in fall in foreign exchange earnings and increase in imports. Hindalco is losing Rs. 10 lakhs a day and has laid off 120 workers and might retrench a further 4,000 men with cascading effect on those employed in other industries. At a meeting of State owned mining corporations in early July,

the means of increasing production in the backward areas and increasing capital inputs were discussed and agreements reached.

Newsprint and Shipping: There is to be a 5 per cent increase in newsprint availability this year over that of last year. 25 per cent of the allocation will be from NEPA, 15 per cent from the STC buffer stock and the balance of 60 per cent imported. To promote unitisation and containerisation of export cargo, the Union and State governments will need to restructure customs laws to offer the necessary incentives. Indian shipping tonnage is over 5 million GRT according to the Ministry's annual report with Indian vessels handling 86.16 per cent of our bulk cargo.

Sugar and Tourists: Sugar production in the first eight months of the 1976–77 season (October to May) rose to 47.5 lakh tonnes from 42 lakh tonnes in the 8 months of the last season. In May production was 1.32 lakh tonnes, compared to 97,000 tonnes in May 1976. The offtake from factories in May was 3.12 lakh tonnes for internal consumption and 7,000 tonnes for exports. For the first 8 months total despatches were 24.36 lakh tonnes for internal consumption and 3.47 lakh tonnes for exports. The closing stock on May 31 was 28.04 lakh tonnes as against 21.38 lakh tonnes on May 31, 1976. The government reports that there was an increase of 14.8 per cent in tourist arrivals in 1976, with 5.33 lakh tourists (excluding those from Pakistan and Bangla Desh) visiting India. There was a large increase in the influx from the West Asian and Gulf countries. The gross earnings from tourists in 1976 was Rs. 225 crores, which is still small compared to what the European countries earn. Special interest tours are, however, on the increase.

Fertilisers: FCI will be doubling its nitrogen capacity at 9 lakh tonnes by 1978–79 and its phosphate capacity will be increased from the present 36,000 tonnes to 3.6 lakh tonnes in that period. During the current year Sindri rationalisation, Nangal expansion and Trombay projects will be commissioned, increasing present capacity of 9 lakh tonnes of nitrogen to 11.3 lakh tonnes and 36,000 tonnes of phosphates to 2.61 lakhs. At the end of July, the minister announced that the FCI and National Fertilisers would be divided into 4 companies: (1) Fertiliser Corporation of India with Sindri, Talcher, Gorakhpur, Ramagundam, Korba and P and D division, (2) National Fertilisers Limited with Nangal, Bhatinda and Panipat, (3) Company III with Namrup, Haldia, Barauni and Durgapur, and (4) Company IV Trombay. This will improve management and efficiency. The government has made it clear that there will be no further reduction in fertiliser prices, so that farmers should not postpone fertiliser purchases if there is to be timely application for the *kharif* season.

Agricultural Production: The government reports that as of July 20, wheat procurement crossed 5 million tonnes, mainly because private trade has not picked up the rain-damaged wheat crop from Punjab and Haryana which the government has had to buy as price support operation. This is posing serious storage problems as the various incentives to increase the monthly offtake from the central pool has not stopped the decline in the offtake. During the past 4 months, the offtake has declined from 8.59 lakh tonnes to 6.73 lakh tonnes.

The early break of the monsoon has worsened the storage problem. Total foodgrain stocks crossed 22 million tonnes in July, with the total storage space in June being 19.5 million tonnes, with only 11.65 million tonnes under cover. The government also reports that 0.6 per cent of the stock was a total loss and that the Food Corporation of India was building storage facilities for 3.2 million tonnes and private groups with the help of various concessions such as bank loan at 11 per cent were building storage bins for 1.97 lakh tonnes. The Soviet Union team which visited the country and examined the wheat stocks and expressed its satisfaction with the quality of the wheat – which means that 1.5 million tonnes of buffer stock can be sent to the Soviet Union as repayment of the Soviet wheat loan. Meanwhile the *kharif* sowing is on in July all over the country. The government has fixed a target of 125 million tonnes for the year. There is some doubt whether the target will be reached. It depends on the rainfall in July which was good all over the country and in the following 2 months. Good July rains have made most States set themselves high targets. Himachal Pradesh is aiming at 60,000 tonnes, Rajasthan 33.50 lakh tonnes, Madhya Pradesh 73 lakh tonnes, Punjab 27.50 lakh tonnes, Haryana 51 lakh tonnes and others like Uttar Pradesh, Andhra Pradesh, etc., are in the process of deciding their foodgrain targets. Meanwhile the National Seeds Corporation reduced quite sizeably the selling price of its quality seeds for the *rabi* season and decided to extend its activities to cover oil seeds, pulses and cotton. The State Seed Corporations are co-operating with NSC in this operation to make available quality seeds to small and marginal farmers. Thus hybrid *bajra* seeds will now cost only Rs. 650 per quintal (against last year Rs. 955), *sorghum* Rs. 855 (last year Rs. 955). So too NSC will be distributing 30,000 quintals of high quality paddy seeds. For farmers in SFDA and MFAL, the prices are even lower. A special drive is being made in regard to pulses which fell in production from 13.1 million tonnes in 1975–76 to 11 million tonnes in 1976–77, so that per capita consumption which was a low 70 gms. in 1962–63 fell to 40 gms. in 1976–77 and prices of pulses have been steadily rising. *Rabi* pulses which have high productivity have been pushed out by HYV wheat and to lower production levels must now make a come back. *Kharif* pulses account only for 36 per cent of total pulse production but cover 49 per cent of the area. To increase its productivity, states have been advised to promote the appropriate strain of rhizobial culture which costs only Rs. 10 per hectare. Its coverage over 2.5 lakh hectares plus the centrally sponsored demonstrations in Madhya Pradesh and Uttar Pradesh show that the per hectare production of the gram can be increased by 300–350 kg. with a proper pest surveillance programme. The government is also making a a special effort to increase the production of cotton through the Intensive Cotton Development Programme and the production of jute through the increase of the support price of raw jute from Rs. 136 to Rs. 141 per quintal from 1 July. This should increase even marginally the quantity and quality of the jute that will be grown and sold to the additional 120 purchase Centres that are being opened. The government reported to the Lok Sabha that it has adopted a policy of selective mechanisation of agriculture which will not decrease employment but improve farmers' intensive cropping and high yields. The machines which are

produced indigenously are made available on a hire basis to small farmers by some 2,900 agro-service centres in the country.

Exports : Following last year's favourable trade balance of Rs. 72 crores reported in Vol VII p 377, the trade balance for the first 2 months, April and May, shows a favourable trend of Rs. 117.82 crores compared to the deficit of Rs. 53.46 crores for April and May of 1976. Once more there was a sharp decline in imports which for 2 months declined to Rs. 658.85 crores compared to the April-May 1976 imports of Rs. 796.05 crores. In May, exports were Rs. 351.31 crores and imports Rs. 349.81 crores, the surplus already being only Rs. one crore. Even so the trade surplus for the first two months does not indicate the annual trend because the import bill for the year will rise fast due to the fact that (a) the increase includes oil prices as noted earlier, (b) the liberalised import policy for raw materials (cotton, edible oil, fibres), components, spares and equipment, and (c) the increased imports of machinery including some power machinery to accelerate the growth of the economy. In July, the government allocated Rs. 400 crores in foreign exchange for the import of cotton to compensate for the shortfall in cotton production which will counter the rise in prices of cotton and now safeguard the position for the next year, if the output does not expand. In that case the import of 14 lakh bales of cotton would not be enough. Imports can be quickly expanded on all needed raw materials and captial goods with the fast growing foreign exchange reserves. As at March 31, these reserves were Rs. 3,242 crores, enough to meet 7-8 months imports, whereas the reserves should normally cover 3 months imports. Though amortisation and interest payments in 1976-77 amounted to Rs. 761 crores, debt servicing fell from 17 per cent of exports in 1975-76 to 15.3 per cent in 1976-77. The total remittances from January to May were Rs. 708.93 crores (in January-May 1976 Rs. 579.87 crores), the inward remittance for April being Rs. 145.08 crores and in May Rs. 137.94 crores. What is needed is to turn these reserves into goods and services needed for the accelerated growth of economy. The export target for this year as noted in the last issue (p 443) is Rs. 6,000 crores, which will be difficult of achievement because of restrictions on exports in some items in order to meet domestic requirements. Tea exports which are earning a high income due to the rise in international prices are being restricted to 225 million kg. against last year's 240 million kg. to meet the increasing domestic demand for tea and to keep its price down. Similarly a lower target is set for steel of 2.41 million tonnes as against last year's 2.49 million tonnes valued at Rs. 348.9 crores. Sugar exports will be insignificant as international prices have slumped. Cement and rice production will not be in the picture because of their lower prices. To counter the rise in the price of vegetables, the government has banned the export of vegetables in July. Jute production is small and exports of jute manufactures will decline. Cotton textile exports which reached a high Rs. 625 crores last year will fall because EEC which imported textiles worth Rs. 230 crores last year has imposed restrictions on imports of cotton textiles and garments. These trends appear in the low May export figure of Rs. 351.31 crores compared to the May 1976 exports of Rs. 385.04 crores. On the other hand, the agreement of the US

at the GATT negotiations in Geneva to enable countries to sign a protocol extending for four years the multi-fibre agreement, to which also Japan and EEC, excluding France, have adhered, if finalised may offer an expanding export market for textiles from India. The Commerce Ministry has also fixed the target to US at Rs. 600 crores for 1977-78, representing a growth rate of 14.9 per cent. Higher exports are projected in jute, textiles, engineering goods, leather goods, marine products and chemicals. Exports of gems are increasing rapidly from Rs. 231 crores in 1975-76 to Rs. 264 crores in 1976-77. The US is their foremost buyer followed by Belgium, Hong Kong, Japan, Netherlands and Switzerland. Plastics and linoleum exports expanded to Rs. 26.37 crores last year (compared to Rs. 18.89 crores in 1975-76), with plastics moulded and extruded goods leading. Similarly in 1976-77 electronic goods exports rose to Rs. 46 crores—an increase of 67 per cent, with consumer electronic goods registering the highest growth. Most of the production and exports in this area were by small units. EEC has placed an order for $ 2 million worth of cycles, and on the basis of enquiries from these countries, this is an export which will expand further. Exports of pure silk fabrics continued to rise and in May Rs. 2.07 crores were shipped. For January-May export earnings stood at Rs. 10.12 crores, a rise of 30 per cent over the previous year's figure. There is also resumed discussion on exporting wheat products to neighbouring and other countries. The export policy resolution which guides the country is being revised to provide for the export of mass consumption goods only after meeting domestic needs and to lay special emphasis on exports of the products of small scale industry. Export promotion and export subsidies will continue during the year to attain the target referred to. The cost to the economy of these subsidies including their opportunity costs needs study and evaluation.

Aid: The Aid India Consortium meeting in Paris at the beginning of July made aid commitments of over $ 2,000 million to India for 1977-78—about $ 340 million more than last year's gross commitment of $ 1,760 million (see Vol VI p 316). Bilateral pledges of $ 1,000 million remained at last year's, but the World Bank increased its pledge from last year's $ 760 million to $ 1,100 million. On debt relief, there was some hold back for the year because of India's mounting foreign exchange reserves. While regretting the decrease in financial allocations for family planning, the members noted with satisfaction the performance of the economy and emphasised the need for the government placing the economy in a sound long-term growth path. UK indicated a commitment of £ 140 million (Rs. 210 crores) in economic assistance for the year in the form of non-repayable grants. There is some slackness in the use of UK and foreign aid because of the foreign exchange reserves and the delays in procedures for project approval which should be righted. The World Bank in July announced IDA credits of $ 70 million for 2 irrigation projects in Maharashtra, $ 13 million for a Rajasthan agricultural credit project, Rs. 9 crores for a starch policy in Kerala and a World Bank loan of $ 80 million to ICICI to help finance the latter's foreign exchange cost of its investments in projects. Japan and India established agreements during the visit of Japan's Foreign Minister to India in July for increased Japanese private investment and technical assistance for India's rural development programme.

International :

Pakistan : India's trade with Pakistan will amount to Rs. 45 crores in 1977–78. The trade in the main includes steel and steel pipes, machinery parts (particularly sewing machines previously imported from Japan), bicycle parts, tractors, timber, betel leaves, tyres and tubes, GI pipes, bamboo bulbs and tubes, tea, cement and coal. Steel and cement exports will further increase to meet the rapid building programme in Pakistan, Steel in particular has increased from last year's $ 5 million exports to $ 10 million. One lakh tonnes of cement has been shipped and more is on the way. Exports of tractors are also increasing.

World Monetary Reform: The July 6th IMF gold auction sold 5,24,800 ounces at $ 140.26 per ounce, out of which $ 52 million accrued to the trust fund now amounting to $ 667 million which is to be used as loans on easy terms to about 66 needy countries. A meeting of the Finance Ministers of the industrialised and oil countries will be held at IMF on August 6 to finalise the details of the Special Fund, known as the Witteveen facility to help both developed and developing countries which face large balance of payments problems with short term loans. As against the original target of $ 16 billion, the pledges are likely to amount to $ 11 billion with the strong industrial countries contributing about half of that total. International monetary developments in July seem to point to a new period of currency instability. The weakening of the US dollar seems a long term movement in relation to both the Japanese Yen and the German Mark. Swedish and Danish urrencies may be forced to new devaluation as they are tied to the strengthening Mark through the Snake. A similar downward pressure is being exerted on the French Franc, the British Pound and the Italian Lira. Unless the US dollar is stabilised in terms of the Mark, there is the danger of OPEC raising oil prices to make up for their foreign exchange losses, and that will set off a round of recession and balance of payments crisis.

OPEC: The July meeting of 13 OPEC member nations in Stockholm confirmed the decision (a) not to raise prices by a further 5 per cent and (b) for Saudi Arabia and UAE to raise their January 5 per cent rise by a further 5 per cent on July 1 (see last issue p 445). But this unity in OPEC and decision not to raise prices further is linked to a positive outcome of the CIEC agreements in UNCTAD and other UN forums. There is also pressure on the part of Iran for some kind of indexing of OPEC prices to world prices and the increasing strength of Saudi Arabia to moderate further price rises.

GATT: The renewal of the Multi Fibre Agreement to which reference was made earlier received an unexpected set back in the 50-nation textiles committee of GATT. The existing agreement expires at the end of the year and if allowed to expire will disrupt textile trade completely. The US, as noted earlier, EEC without France and Asian countries were working towards an agreement. Brazil and India proposed a five year extension of the existing agreement. EEC countries demand separate bilateral accords to stop the flow of cheap cotton goods which they claim disrupts their own markets. US proposed renewing the agreement subject to the understanding reached over EEC demand. But none of the 3 alternatives receives

majority support. So now private negotiations must be continued to save this vital agreement.

UN Law of the Sea Conference: The seven week session of the UN Law of the Sea Conference ended on July 16 with a decision to meet again in Geneva from March 28 for 7–8 weeks. Already Jamaica, Malta and Fiji are laying claims for the headquarters of the Sea Bed Authority. At this session, the composite text of the treaty could not be adopted but the texts of the different regional groups were discussed and are to be published in July with a view to adopting an agreed treaty by the end of 1978 and the Authority constituted in 1979. If that were done, it would be the biggest achievement of the UN.

World food: World wheat production will be 390 million to 400 million tonnes this year according to the International Wheat Council which points out that this will give the world a greater margin of security against crop failure than what it was for some years. With last year's high 419 million tonnes, consumption and high wheat stocks level will be possible. The stocks will remain till the end of 1977–78 at 55 million to 60 million tonnes, while world wheat trade will be over 68 million tonnes.

World Steel: The International Iron and Steel Institute reports that raw steel production in 29 member countries was down to 375.34 lakh tonnes in July 1977 compared to 377.72 lakh tonnes in July 1976. The decreased production for the first half of 1977 was 0.8 per cent lower at 2,204.46 lakh tonnes compared to 2,222.76 for the first half of 1976. The overall trends in production during the period does not indicate any substantial revival of steel demand.

World Pepper Community: The World Pepper Community comprising India, Indonesia and Malaysia with headquarters in Jakarta, met in its fifth session in New Delhi at the end of July. The session was also attended by Thailand, Sri Lanka, Madagascar and Brazil who were invited to join the community. The community decided to increase the production of pepper and agreed on a joint marketing strategy so that it was possible to achieve stabilisation of pepper export prices at a fair and remunerative level. Also exchange of information and data and intensification of research and development in pepper were also agreed upon. The immediate problem is for the countries to fill the deficit in supply in relation to demand which is of the order of 22,000 tonnes. The community now comprises 80 per cent of the world's pepper produce and if the 4 countries join it, it will have all the producers in it.

Asian Telecom: 13 West Asian and South Asian countries will be linked by the Asian telecommunication network by 1979 making easier and cheaper communications through telex, telegrams and telephones between the countries. The members are India, Philippines, Indonesia, Singapore, Malaysia, Thailand, Bangla Desh, Pakistan, Nepal, Sri Lanka, Iran, Afghanisthan and Burma.

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II Agricultural Development

Paddy and Other Foodgrain Production:

The government estimates that due to the failure of the South West Monsoon last year rice output was about 50 lakh tonnes as against the previous year's 58.67 lakh tonnes. This reduction of 15 per cent of rice production last year was shared by all paddy growing districts where the area sown had declined by 13 per cent except in the districts of North Arcot and Chingleput. Total foodgrain production which was 74 lakh tonnes is expected to be 84 lakh tonnes this year. The area under *kuruvai* is between 4.5 to 4.75 lakh acres this year and for which there would be adequate water. Through better water management, the yields this year are expected to increase. 2,000 agricultural officers have completed a massive training programme and 4,000 are being posted in a thousand wet areas and another 1,000 in the dry areas. They will help the farmers in planning for maximum use of natural resources and other inputs. In irrigated lands, the irrigation and drainage problem will be analysed and overcome and the maximum returns obtained with minimum water. In dry lands moisture conservation techniques will be taught so that more than one crop can be raised in a season. The soil problems will be analysed by data analyses and corrective measures taught on the watershed basin and new crop patterns designed to get higher returns. In fact last year's returns would have been smaller if the cropping pattern had not been changed by the farmers (see last issue p 446). So attention is being focussed on the management of resources to get maximum benefits. Cauvery water for irrigation reached the Karaikal region on July 23 and *kuruvai* cultivation was begun. A part of the Rs. 58 lakh Noolar Modernisation scheme has been completed and is giving relief to worst affected tail end areas. Mercara, the catchment area for Mettur reservoir received good rainfall in July and on this basis the outflow from Mettur to feed the delta area for *kuruvai* cultivation is being maintained. During the *kuruvai* season, a new paddy strain—10–40—has been introduced for *samba* transplantation. This high yielding variety matures in 175–180 days and will yield 2.5 tonnes per acre. It is being used in Thanjavur district and some parts of Tiruchy district. Under *kuruvai* the normal area under cultivation is 46.20 lakh acres in Thanjavur, Tiruchi, Namakkal, Salem and South Arcot. Without dropping to last year's 3 lakh acres, so far in mid July around 4.75 lakh acres have been brought under cultivation. To ensure that there is no serious reduction in total production, the maximum area is being covered by IR derivatives under *samba*, along with improved use of fertilisers and pesticides when necessary.

Pulses, Gingely, Groundnuts and Cash Crops:

With a view to increase pulses production in Tamil Nadu and the other Southern States, a training programme was held in Coimbatore in July. Despite the

development of non-season varieties and reduction of duration—from 200 to 120 days for red gram and from 100-120 to 60-65 days for black gram—pulses production has fallen, despite the higher prices. Now farmers are being helped to grow pulses as relay crops and raise their value in adding nitrogen to the soil, which also results in improvement of the quality of milk produced by the cattle. To meet the growing demand for gingelly, and as part of the alternative cropping strategy, a large scale programme of gingelly cultivation is underway in Coimbatore district. In the last *rabi* season 13,045 acres were brought under gingelly cultivation and the yield ranged from 170-200 kg. per acre against the normal 100 to 150 kg. For the current *kharif* in place of the 5,500 acres programmed, 26,500 acres have been brought under gingelly cultivation due to good rains and the efforts of the farmers helped by the Department extension agents. A similar development is taking place with regard to oil seeds which in 1976-77 amounted to 13.4 lakh tonnes and for 1977-78 is estimated at 14.9 lakh tonnes. TMV-2 groundnut was grown over 2 lakh acres and with the widespread adoption of the package of practices has boosted yields to 700-800 kg. per acre and in some cases to 1,000 kg. during the *rabi* season. For *kharif*, TMV-3 groundnut with its short 80 day duration, good yields and larger oil content is being used. The *kharif* oil seeds area is 52,045 acres on which 16 tonnes of micro-nutrients and 387 tonnes of gypsum are being used. Mass ground spraying and supply of plant protection chemicals to farmers are intended to guard against pests. Compartmental bunding is being used by the farmers to consume moisture and maintain soil fertility along with raising black gram or sunflower as inter crops. Cotton production last year was 3.6 lakh bales and for this year is planned at a moderate 4 lakh bales. This stagnant level of production is due to lack of marketing facilities, fluctuation in cotton prices, and uncertain rains. To expand cotton production in the State, this year's programme will intensify production through HYV like MCU-5 and *Varalakshmi* and cotton production is being extended from its traditional growing areas in the Coimbatore and Tirunelveli districts to Ramanathapuram district. Top quality *Varalakshmi* seeds will be grown in 200 acres in Coimbatore, Madurai and Tirunelveli and in a 100 acre seed farm in the Vaigai *ayacut*. SIMA has also launched a scheme for the multiplication of MCU-5 and *Suvin* varieties.

Seeds and Fuel Storage Bins:

The National Seeds Corporation has covered over 6 lakh acres with improved varieties and hybrids of *kharif* crops which will yield an additional 14 lakh tonnes of foodgrains. The seeds are organised in relation to the suitability of the area for a particular crop and so *bajra* seeds have been obtained from Karnataka, *Sorghum* from Andhra Pradesh and Maharashtra and *maize* from Andhra Predesh and Karnataka and some northern States. Small farmers have been participating increasingly in this seed multiplication efforts thanks to NSC's marketing network, its bulk shortage points at locations convenient to farmers, and the establishment of seed selling points in the interior parts of the State within the reach of the farmers. The Tamil Nadu Agro-Engineering Service Co-operative Federation (ENCOFEI) is taking up a Rs. 4.5 lakh scheme to instal diesel fuel pumps at seven centres. It

will stock and supply accessories to 7,000 pumpsets for farmers covered by its 12 districts. At Cuddalore, Madhakur, Karankulam and 32 other places farm fuel units are being established to provide farmers with diesel promptly and at low rates. It is also selling to farmers fertilisers, pesticides, seeds, controlled cloth, torch battery cells, cycle tyres medicines, farming aids, lubricants and other petroleum products. It is undertaking the much needed custom building services and service-cum-repair workshops at the block level. It has constructed 2,992 grain storage bins and distributed 2,542 of them through the save-grain campaign. For this year it will construct and distribute 5,000 bins at a cost of Rs. 15 lakhs.

Research Results:

In addition to rice plants tolerant to salinity developed at Peravurani station in the State—PVR-1—and the varieties developed in Machilipatnam, Andhra Pradesh—MCM-1, MCM-2 and T-892, the farmers in saline areas can also use *Damodar* and *Getu* varieties developed at CSSRI and the two mutants brought out by the Central Rice Research Institute—2733 and 2735—which have better tolerance and higher yield qualities under saline conditions. Research at IRRI, Manila has shown that systematic and planned use of pesticides to counter various pests—green leaf hoppers, brown plant hoppers, stem borers, whore maggots, rice bug, etc.—and increase by a third rice yields. This can be popularised in this State through the pest surviellance system, provided both farmers and extension agents are trained in pest identification and management and the programme is fitted in with the use of rice varieties which are resistant to certain pests. Pulses production is being expanded as a result of research over the last five years, suited to different crop mixtures and sowing times. For *rabi*, short duration varieties under irrigated conditions can yield within 3-4 months For *kharif*, medium types which yield in 5-6 months can be used with heavy yields averaging 750 kg. per hectare. S-5 and S-6 can be more widely used in this State, as they yield 20 to 25 quintals per hectare within 4-5 months. A red gram variety—*Prabhat* also should be popularised in the State, as it yields in 3 months and can be grown on dry lands, with an yield of 12 to 14 quintals per hectare. The Tamil Nadu Agricultural University and the Kudumiamalai Station have popularised the red grams—CO-1, CO-2 and CO-3—which yield within 4 to 5 months. SA-1 is a newcomer and is intermixed with groundnuts in *kharif* sowings. Research on vegetables and fodder crops at the G. B. Pant University (UP) has resulted in a 60 day variety of heavy yielding tomato plant, small in stature with a cluster of fruits—AC-142. Similarly its fodder Jowar-IS-4776 can be used in the State as a pest resistant heavy yielding cattle fodder. Other more recent fodder varieties are Sel 439, Sel 512 and Sel 472.

Dairy and Fish Farming:

Under the State's animal husbandry programme, 15 village blocks are being set up and 5 veterinary dispensaries opened. Also a Rs. one crore second feeder balancing dairy is being established by the Tamil Nadu Dairy Development Corporation through the Erode Co-operative Milk Producers Union to handle one lakh litres of milk for conversion to powder, butter and ghee. The Corporation which now markets 2.15 lakh litres

of milk per day in Madras city plans to increase supplies to 2.5 lakh litres, besides distributing 50,000 litres a day in Madurai by the end of the year. Madras city's needs amount to 4 lakh litres of milk per day. The Corporation is installing two new *prepac* machines, each with a capacity of 5,000 polythene sachets. The Ambattur dairy where the machines are set up also supplies 40,000 litres of milk to Bangalore. Also the Ayanavaram dairy plant is being developed into a major milk product factory. Milk with a higher fat content (6 per cent) is to be increased for distribution from October of this year. In the Fisheries sector, fishermen co-operatives are being enabled to secure a better price through improved marketing and direct linking between credit, marketing and processing. The State is providing increased facilities for the processing and export of marine products.

Tea :

As noted in the last issue (p 447), with the northern tea output exceeding by April last year's by 6 million kg. and the South by 12.6 million kg., the year's total tea output is estimated at 550 million kg. During the first five months of 1977, output reached 130.6 million kg. compared to 109.6 million kg. during the five months of 1976. Similar increases are reported from Sri Lanka, Kenya and Bangla Desh. The demand for Indian tea both at home and abroad is increasing. Exports of Indian tea will be 10 million kg. as against the annual average of 7 million kg. in 1975 and 1976, increasing in 1978 to 11 million kg. with increasing demand for Indian instant tea and tea bags on which India needs to improve its performance. Tea prices, both internal and international, began to decline in July. The auction centres in Calcutta, Madras and London record a fall from the high prices prevailed in the first months of the year and so the export duty of Rs. 5 per kg. will have to be reduced to take account of this trend. There is an important task of tea promotion through the International Tea Production Association set up by the Intergovernmental Conference of Tea Producing Countries held in Geneva in September 1976. Its main function is to propagate tea consumption throughout the world. 9 countries have signed the agreement reached in the conference and their tea production and exports represent two-thirds of all tea exports today.

Coffee:

As on May 31, receipts of the coffee pool were 99,489 tonnes and the internal and export sales were 22,843 tonnes and 19,350 tonnes and stock at 57,296 tonnes. In the first 2 months of the financial year 1977-78, 11,220 tonnes valued at Rs. 60.29 crores were exported. Meanwhile to meet the increasing local demand, the Coffee Board has been requested to release an additional 5 tonnes of coffee through pool auction by the All India Coffee Merchants' Association meeting in Coimbatore in late July. Coffee production needs to be expanded beyond the traditional sources —Karnataka 1.01 lakh hectares, Kerala 40,502 hectares, and Tamil Nadu 28,068 hectares. As at July only 1,289 hectares of non-traditional new estates have been started—AP with 1,023 hectares, Assam 174 hectares and Orissa, West Bengal and Andamans together 92 hectares.

Rubber :

During the first 3 months of 1977, rubber production increased by 1,874

tonnes over that of last year and reached 32,626 tonnes. Consumption of rubber increased by 4,129 tonnes to 35,140 and 4,101 tonnes were exported. Prices declined on July 2 to Rs. 598 per quintal and this is a serious disincentive to the growers. The fall within one month from June 11 has been over Rs. 25 per quintal. Rubber support prices are needed and the government declared in the Lok Sabha in July that a decision to raise its minimum price will soon be taken. Meanwhile it has decided to export 10,000 tonnes this year in view of the estimated increases in production.

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III Industrial Production

Salem Steel :

As noted earlier, the Union minister stated in the Lok Sabha in July that the Salem steel plant will go on stream by 1981. No details are as yet available about the timetable to be followed for Salem to become operational by that time. In the Union Budget, Rs. 13 crores alone are provided for the current year on this account. The possibility of shifting the location of the Vijayanagaram plant to a port based location near Mangalore to reduce production costs was also referred to by the minister.

Neyveli :

The annual report of Neyveli for 1976–77 shows a 40 per cent increase in production and Rs. 78.94 crores of sales for the year. The gross power generation was high at 3,315 million units, urea production was 95,507 tonnes and lignite mined 181.25 lakhs cubic metres—each being a record in its area. Pending the expansion scheme aimed to raise production of lignite to 6.5 million tonnes, good management and organisation has brought about this increased production.

HPF :

Hindustan Photo Films reports reaching a record production of 9.2 million square metres of photo-sensitive goods for 1976–77, and it plans, as noted earlier, to set up a factory in Madras for the conversion of cine colour positive and expand X-ray film production so as to meet to a large extent the needs of the photographic industry. HPF in collaboration with the German Democratic Republic plans to manufacture roll films and to convert imported photo paper into jumbo form to save 25 per cent of costs. The production of roll films is expected to be stepped upto 12 million spools by March 1978. Bromide paper production has increased from 7.25 lakhs square metres in 1973 to

23 lakhs square metres for the current year. The unit expects to increase its profits to about Rs. 3 crores this year.

BHEL:

One of the strong points of BHEL, Tiruchy, is that it has not developed as a self-contained monolith but has ensured that the 1,500 tonnes of sub-assemblies valued at Rs. 18 lakhs, needed by it are fabricated by over 150 small scale industrial units located on the BHEL estates. Following the budget presentation, the Excise Collector at Madurai has instructed these small scale units to pay the 2 per cent duty. This interpretation of the tax liability needs to be modified because it is not BHEL which pays the duty but the individual small scale enterpreneur. Till this mess is cleared, the sub-assemblies were held up and not delivered to the BHEL plant for all of July now.

Surgicals:

As forecast in earlier issues of the *Bulletin* (see Vol. VI p. 591), the product mix of Madras Surgicals—now a unit of Indian Drugs and Pharmaceuticals—is being changed and a grass root formulation unit at an estimated cost of Rs. one crore is being set up—in an effort to revive this sick unit. The decision on the recommendation of the expert committee to transfer the unit to the Industries Ministry is still pending. The plant produced 2,10,067 instruments of 73 types of the value of Rs. 28.09 lakhs during 1975-76 and executed job orders for Rs. 14.10 lakhs. In 1976-77, 3,13,299 instruments valued at Rs. 57.27 lakhs were produced and job orders for Rs. 21.60 lakhs executed. The erection of a 630 KW capacity generator makes the unit self-reliant in power. Improved performance during the year included declining percentage rejections to total production and the development of 3 new types of instruments. The losses of the unit will have to be borne by the Rishikesh and Hyderabad units of IDPL.

TANSI and SISI:

Tamil Nadu Small Industries Corporation is exploiting commercially the black granite stone reserves in the State. It is setting up a Rs. 50 lakh plant with a modern finishing machine to cut the black granite stones into slabs and polish them to a high degree of perfection for export. Vast reserves of high quality black granite stones occur in Dharmapuri, Salem and South Arcot. TANSI has recently acquired the lease for mining stone reserves in Kunram in South Arcot. The plant is to be set up at Tindivanam, using imported machinery. On the side of small industries, the one year old committee set up by the Government to rehabilitate sick small units has developed successfully into a multi-institutional instrument for the purpose. The SISI director who is the convener of the committee reports that the problems of 12 sick units have been solved and those of a further 12 units are being dealt with. One of the lessons learnt is that financial constraints which lead to sickness can be countered by strengthening the equity base of small industries. Working capital and short term credit to meet contingencies are bottlenecks which if met will go a long way in preventing or curing sickness, the committee reports.

Electronics :

Another committee on electronics constituted by the government and headed by the special secretary to the Industries Department has recommended the setting up of two corporations in this area in the State—the Electronics Corporation of Tamil Nadu and the Tamil Nadu Computer Software Corporation. The Corporations recommended face a substantial local market potential for electronics—personal, professional, medical electronics, etc. Simple jobs like coil winding and small tooling could be done on a cottage industry basis and the development of software systems engineering in the computer field with selected peripherals require special attention. Electronics instruments for exports and mining electronics should be given special attention, the report states.

Industrial Sheds :

The Industries Directorate has completed a special survey of the possibilities of setting up new units and has prepared over 100 project briefs in consultation with technical institutions and scientific organisations. They are placed in the Data Bank and Information Centre of the Instronics Estate, Madras. The State has an adequate number of developed plots and industrial sheds for housing these industries. It is not infrastructure which is lacking—these are the special concern of SIPCOT and SIDCO. It is entrepreneurial and managerial talent which is lacking, and which must be made up by education and training programmes and by importing talent from all over the country.

Textiles :

The State government announced in the budget presentation that it has under consideration the takeover of 8 sick textile mills—the Madura spinning and Weaving Mills, Janardhana Mills, Ravindra Mills, Bhavani Mills, Coimbatore Kamala Mills, Sakthi Textiles, Cauvery Spinning Mills and Nagammal Mills. These mills employ 5,000 workers, have received loans and advances from various banks upto Rs. 279.54 lakhs with guarantees by the State government. Most of the mills were opened early this year after one year's closure. Now a tripartite conference of government, labour and management will have to pass a resolution for the takeover and the government will have to approve the action. The ten mills taken over (see Vol II No 7 p 24 and Vol. III p 34) are now part of the National Textile Corporation. The basic problem is that the average labour productivity in the 150 spinning mills in the state and other southern states has remained static, according to a SITRA survey, for the time in the past 20 years. The average labour productivity is only 65 per cent of the standard, showing the possibility for increase in productivity as a cure to sickness. In turn this low productivity is due to a slow down in modernisation, decline in machine utilisation and the absence of major revision in work allocations. The takeover of the 8 mills should be based on the findings of this study. These include: mills with very low and very high production rates showing increase in average productivity; the scope for improving productivity in the rolling sector by 35 per cent; the inter-unit differences on return to capital range from 12.6 per cent to 74 per cent; mills with below average profits achieve the best returns; the high losses in 1975

are due to the high cost of (i) raw materials (59.8 to 69.6 percent), (ii) labour (15.2 to 20.7 per cent), and (iii) power (3.1 to 6.5 per cent); the capital structure of the mills in favour of debts, the average debt equity ratio being 1:30.

Cement :

Cement supplies in the state and the south are moving to a surplus position. With the expanded capacity of Madras Cements now commissioned, the total rated capacity of the cement plants in the state amounts to 3.01 lakh tonnes. On top, with no power cuts or constraints, the 7 cement plants in the state produced 1.04 lakh tonnes against the normal one lakh tonnes during the first 10 days of July. So too with normal power supply, the 6 AP units are working at full capacity and Karnataka with Maharashtra power is working its cement plants at 80 per cent capacity so that AP and Karnataka are together producing 1.69 lakh tonnes. Hence surpluses are developing after meeting consumers' demands in the south. In the week July 11 to 18, 1,200 tonnes were supplied to stockists and only 250 tonnes were lifted. Thus exports from the state and the south to the deficit north as well as through STC to the Gulf Countries can now be resumed.

Handlooms :

Exports of "Real Madras" handkerchiefs have doubled from Rs. 7.7 crores to Rs. 14.4 crores between January and May this year and handloom exports increased from Rs. 26.38 crores to Rs. 30.99 crores during this period compared to the period in the previous year. Some slackening in the demand for cotton handloom garments is due to the US market still being in the process of recovery from the recession, with the demand for handloom garments halted as well as the quota restrictions imposed by EEC. The export target for this year is Rs. 241 crores which will be reached and even exceeded if the market trends for garments improve. The Tamil Nadu Handloom Weavers Co-operative Society will soon be starting its procurement drive to clear the accumulation of handloom goods. Out of 5.5 lakh handlooms producing 600 million metres of cloth worth Rs. 150 crores, the co-operative sector includes 1.8 lakh weavers in 87 weaver co-operative societies in the state. Accumulation of goods has become an annual feature as is the increase in the price of yarn. The Co-optex usually starts its procurement drive in August in time for the October Deepavali sales. This year Deepavali is in November and so the period of stock accumulation is longer. In response to the problem faced by the weavers co-operatives on account of accumulating stocks and rising yarn prices referred to by the Salem Federation, the government announced in July that it will introduce a time bound programme to deal with these two issues as well as revitalise the societies, liberate the weavers from master weavers and middle men, and establish minimum wages and improved working conditions for the weavers.

Leather :

Leather and leather goods exports during April to June decreased to Rs. 6,192.75 lakhs compared to Rs. 7,616.2 lakh in the first quarter of 1976-77, being a fall of 19 per cent due to the sluggish world market. The prospects for the next quarter are not too bright so that it is unlikely that the second quarter's decline can be made up. Plans

are under way to convert the South India Skin and Hide Merchants Association into a national body and to locate the Leather Export Promotion Council permanently in Madras. Tamil Nadu Tannery and Footwear Corporation (TAFCO) signed a contract in July to export to the US Rs. 42.50 crores worth of leather goods during the next 5 years. This involves the manufacture of 4,500 shoes per day for this period at an annual cost of Rs. 8.5 crores. Similar leather goods exports by the Corporation from the State are being negotiated with other countries.

Private Sector Reports:

The annual report of W.S. Insulators of India for 1976 shows an increased production performance resulting in an increase of its working capital requirements. It is negotiating repayment conditions for its term loans and has cleared its arrears on the preference share capital. The Annual Report of EID-Parry for the year ending 31 December 1976 refers to the transformation of the Sterling company into an Indian company as completed on 18 June 1976. The company reports a loss of Rs. 195.90 lakhs after taking into account the one-third voluntary retirement compensation payments amounting to Rs. 206.75 lakhs. Rs. 10.96 lakhs have been withdrawn from the general reserve, Rs. 98.74 lakhs for depreciation losses and Rs. 10.85 lakhs for the voluntary retirement compensation liability. Its Nellikuppam factory crushed 3.84 lakh tonnes cane (against 5.85 lakh tonnes in 1975), with a 7.74 per cent recovery. Also production of spirit and CO_2 was limited. For 1977, 5 lakh tonnes of cane are coming up from 1976 plantings. Following the Vizag plant expansion and increased Coromandel supplies, fertilisers distribution increased by 36 per cent. Pesticides, HYV seeds and animal feeds production expanded as did ceramics and exports generally. The annual report of South India Viscose for 1976 refers to the successful industrial complex started in Sirumugai village in Coimbatore district, a sales turnover of Rs. 21 crores and the launching of the first stage of its expansion programme of production of 21,000 tonnes with Italian collaboration. Its fibre capacity was expanded from 4,000 to 11,000 in 1973–74, and its wood pulp plant expanded from 4,000 to 11,000 tonnes and further to 42,000 tonnes by the end of the year. It also refers to its successful joint venture in Malaysia for setting up a paper and dissolving wood pulp plant.

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IV Education, Science and Health

Student Unrest:

With the re-opening of colleges and universities, July marked the recrudescence of unrest in educational institu-

tions. 8 educational institutions outside Tamil Nadu and 20 institutions within the State were involved in a series of strikes, processions, struggle with the police, damage to colleges and restaurants, disturbances to legislative assemblies, etc. The causes varied including (a) demand for lowering fees, (b) improvement of student facilities, (c) demand for better conditions for house surgeons, (d) dissatisfaction with the examination paper, (e) change in the grading system and internal assessment, (f) disagreement with government takeover of private medical colleges (in Bihar), (g) demand for a separate board of studies (in Homoepathy in Lucknow), and (h) improved service conditions for non-teaching staff (Bombay). The centres affected are Patna, Lucknow, Hyderabad, Bombay, Warangal, Bangalore and Hubli outside the State and all the men's colleges in Madras City, Kumbakonam, Thanjavur, Komarapalayam, Pudukottai, Salem, Annamalainagar, Palayamkottai and Tirunelveli within the State. Discussions are under way between the students on the one side, and the university and college managements and governments on the other to identify the grievances of students and settle them rapidly. The first month of the academic year, July, is in a sense lost for most of the men students who are involved in these events.

Educational Reform:

In the State, discussions are under way to introduce the compartmental system of passing the SSLC examination, whereby a student can appear again for the examination only in the subject in which he fails or re-appear for the same paper to improve his performance. This reform will be one small step to put the examination system in its proper place. The number of SC and ST and backward class students in receipt of government scholarships is steadily increasing: 20,000 in 1975-76, 22,000 in 1976-77 and 1977-78. It has been decided that the scholarships should be advanced by the colleges to the students on production of their entitlement cards in order that the present inordinate delay in their disbursal is reduced. As a further measure of help, the State government has fixed the prices and sizes of exercise books made out of concessional rate paper and has advised the students to pay only the exact price indicated on each exercise book. UGC has announced 3 categories of post doctoral research associateships—A Rs. 1,000 monthly emolument, B Rs. 1,200 and C Rs. 1,400. These associateships are to be awarded by (a) the UGC directly, (b) through the Universities and (c) to research institutions (upto 5 for each). In a discussion in the Lok Sabha on the education ministry grants, the minister indicated that as the government was opposed to the 42nd amendment, education would not be a concurrent subject (see Vol VI p 327). He expressed his personal agreement with the Kothari Commission recommendation that education should remain in the state list but could not affirm that the government would put it back in the state list. He referred to the Committee that had been set up to reduce the load on students in classes IX and X (see last issue pp. 450-451).

Adult Education:

Lok Sabha discussions on the state of massive illiteracy in the country were useful in raising political interest in the

subject. The Minister of Education referred to the decision to set up a National Board of Adult Education and his consultation with the state ministers of education in August to launch a large programme of adult education. He pointed out that there were 23 crores of illiterates in the age-group 19 and above of whom 14 crores were women. AIR, Tiruchi, inaugrated from July 18 a 4 days a week broadcast programme on non-formal edncation. On Tuesdays and Thursdays, it would be for the age-groups 6 to 11 and 11 to 14 and on Mondays and Wednesdays it would be for the 15 to 25 age-group. The broadcasts are from 7.40 P.M. to 8 P. M. when the non-formal education classes are in session throughout the state. The non-formal education centres are equipped with transistors or radio sets and the teachers have been trained to correlate the lessons with those that are broadcast. The lessons deal with day to day problems of the local economy and so motivate the student to attain the necessary literacy skills. There is at present one non-formal education centre for the 6-14 age-group in each of the 374 panchayat union areas. The sanctioned strength for each centre is 30 but the average attendance is 50. So the government is planning to open in each block a second centre. Additionally in each of 6 districts—South Arcot, North Arcot, Salem, Tirunelveli, Coimbatore and Tiruchirapalli—there are one hundred centres functioning for the 15 to 25 age-group, attended by 18,000 youth. There are 630 farmers' education centres attended by 18,900 farmers. A symposium on mass media and crime in July emphasised the urgency of the mass media truthfully presenting the acts of crime, after a factual verification. The various dangers and distortions that mass media could promote by its reporting on crime were highlighted with a view to avoiding these dangers. To promote the reading habit and increase the production of books in the country, the Federation of Indian Publishers have recommended that the Union government should set up a Book Finance Corporation to advance credits and loans for book publishing. It might be preferable to include book publishing in the priority areas for lending by commercial banks rather than start a separate credit institution for book publishing.

Technical Education:

The intake and output of the engineering institutions in the state have been varying in the last 3 years: 1974-75, 1975-76 and 1976-77. The intake for the degree courses was 2,528, 2,799, 2,380 and outturn 1,602, 1,776 and 1,733. The trends have been similar in the other 3 southern states. Diploma course admissions in the south declined from 13,315 in 1975-76 to 12,757 in 1976-77, though the outturn increased from 5,898 to 6,253. Intake in women's polytechnics has also declined from 1,784 to 1,614, though the output has increased from 766 to 845. The women's polytechnics cover a wide range of skills from electronics and commercial practice to costume designing, architecture and telecommunication and the men's polytechnics cover all the subjects in engineering colleges from mining and metallurgy to instrumentation and industrial engineering, plus ceramics, cinematography, printing, polymer and sugar technology and fisheries and navigation. One way to lessen the fear of unemployment which affects the intake is to increase the collaboration between the technical institutions and industry. In May 1976 the AICTE recommended that

a public sector industry in each State must adopt a polytechnic. This recommendation must be put into effect. The Southern Regional Committee of the AICTE which met in late July in Bangalore selected 9 technical institutions in the region for undertaking research programmes to solve the immediate problems of industries. Among the selected institutes in this state are IIT (Madras), REC (Tiruchy) and PSG College of Technology (Coimbatore) which are to engage in problem oriented research relevant to the State's industries. The PSG Polytechnic in Coimbatore is to introduce a new course in drafting technology.

Science :

In July, the Union government recast NCST with the additional function of determination of science and technology priorities including conservation of natural resources, advice on the speedy development of rural areas, enhancement of the quality of life of the people and fulfilment of their basic needs. The other functions continue from the original terms of reference to formulate and implement the government's policy on science and technology, to co-ordinate the activities of the various agencies and increase and improve scientific research. The Chairman of the Committee is Dr. Atma Ram and its membership includes the Chairmen of the Khadi and Village Industries Commission and of Gandhi Smarak Nidhi, in addition to scientists and engineers from the public and private agencies. The Chairman has stated that the NCST Plan (see Vol IV pp 382-383) will be modified in the light of the new terms of reference relating to rural development. A Regional Centre for Transfer of Technology is being established at Bangalore by the Union government and United Nations ESCAP. At its inauguration in mid July, the Centre, which has started functioning, is engaged on collection and diffusion of sources of technologies and the various subjects of technological transfers and on this basis it will assign tasks to national centres with regard to technology transfer and organise regional and sub-reigional projects. India and US have agreed that India can purchase from the US satellite pictures of India, and the National Remote Sensing Agency (NRSA) will interpret and process satellite data for GSI and Departments of Agriculture and Irrigation. In this programme, the Indian Photo Interpretation (IPI) Dehra Dun has been merged with NRSA, with IPI providing training and consultancy services to NRSA. As a result of the Indo-US Science Research Committee discussions in July, co-operation between the two countries is to be extended to cover wild life and habitat, solar activity, oceanography and earth sciences and arid land research. Joint research is to be undertaken in (a) agriculture and water resources, (b) energy, environment and natural resources, (c) health, (d) meteorology, materials and electronics, (e) institution science and (f) ocean sciences. BARC reports that it is designing a mini research reactor to use the new fuel, U-233, derived from beach sands of Kerala. This fast breeder test reactor is under construction at Kalpakkam. Southern Magnetics in Madras reports that it has developed an electronic length measuring unit for the tyre industry. It can be applied in measurements in the textile industry, tyre cord, tread measurement and printing and paper industries. With the Union Ministry of Health's takeover of the Pasteur Institute at Coonoor, a programme has been

developed to improve and expand the institute and to manufacture triple antigen to supplement the Madras and Bombay production. It will also increase its production of anti-rabies vaccine. Further to the research on the bullock cart, the Central Institute of Plastics Engineering and Tools (CIPET) reports that it has designed and fabricated the body and yoke of a bullock cart out of glass reinforced plastics at a unit cost of Rs. 8,000. (The conventional bullock cart costs Rs. 2,500). If the government waives excise and import duties, the price may be a more moderate one. The cart can carry 3 tonnes of goods, but its practical use depends on the price factor.

Health:

The State scheme for rural health has been provided for in the State budget: two mobile medical teams will be attached to a few selected PHCs to start with. The whole scheme applied state-wise will cost Rs. 514 lakhs a year. At a health advisory service exhibition, the importance of a healthy mother to ensure the health of babies was well displayed. The focus was also on providing information on some major and minor malformations which X-ray analysis could help to detect.

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V Employment

The Directorate of Employment and Training reports that as at March 31, employment in the organised sectors was 201.5 lakhs, of which 133.2 lakhs were in the public sector and 68.3 lakhs in the private sector. Employment in these sectors over the 15 year period, March 1961 to March 1976 rose by 66.7 per cent from 120.9 lakhs to 201.5 lakhs. During this period, employment in the public sector rose by 88.9 per cent from 70.5 lakhs to 133.2 lakhs, while in the private sector it rose by 35.5 per cent from 50.4 lakhs to 68.3 lakhs. With the ending of the emergency, and the restoration of trade union rights, it is estimated that between April and July, 4.2 million mandays were lost at a cost in loss of production of Rs. 7.5 crores. In the middle of July, 210 industrial units were closed or strike bound, Maharashtra leading with 64 followed by West Bengal 61. The government succeeded in averting a major all-India dock and port workers strike by the agreement reached with the union on July 14, under which minimum wages are to be raised from Rs. 325 to Rs. 346 plus Rs. 35 in DA. The increases will be from January 1974 and will cost Rs. 19 crores per annum. There are also growing labour problems in the rural areas, with clashes between landlords and workers

increasing in Bihar, West Bengal and Gujarat. The ratio of cultivators to landless workers varies from 17.8 per cent of cultivators to 30.7 per cent of landless labour in Kerala, to 70.7 per cent and 4.1 per cent in Himachal Pradesh, 64.9 per cent and 9.3 per cent in Rajasthan and about equal in Tamil Nadu with 31.3 per cent cultivators and 30.5 landless labourers. Rural labour unrest is due to non-implementation of land reform, inadequate minimum wages and consequent increase in the number of rural poor (landless, backward people), estimated at 38 million in 1971 and now passing 45 million. On the worsening industrial relations, the Union government has in mid July set up a 30 member committee with the Union minister of labour as Chairman to study all issues relating to industrial relations and make recommendations for a comprehensive law in this regard. The State government also is planning to set up a panel of labour leaders to suggest comprehensive changes in the labour law of the State to meet the problems raised by the workers.

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VI Other Items

UNESCO's Adult Education :

UNESCO held a 3 day consultation in Paris for restructuring its Adult Education programme, which like that programme everywhere, suffers from lack of support, relevance and is marginalised. In that situation the main thrust was to make the programme a practical and effective means of carrying out the UNESCO Recommendation on adult education, and of closing the serious gaps that exist in UNESCO's medium term plan as far as adult education is concerned. It was suggested that the programme should concentrate on unemployment and rural development and be guided by an international interdisciplinary committee for its future development.

UGC and NCTE

The UGC Committee on the development of colleges met in July and drew up a programme on the monitoring of the assistance programmes for the development of undergraduate and post-graduate education in the affiliated colleges, the desirability of reducing the matching grant required from colleges and the means of increasing the professional qualifications of teachers. In July also a meeting of the steering committee of the National Committee of Teachers Education met and discussed the implications for teachers' education of the changes in the 10 + 2 system and agreed upon the co-ordination of the training of teachers in training schools and colleges.

College Student Unions:

July was the month of the inauguration of the student unions in the colleges. Qaide Millet College for Women had its student union inauguration in early July at which the importance of students devoting themselves to learning and eschewing strikes and violence was emphasised. The students' union of the K. K. Government Arts College, Cheyyar, was inaugurated in mid July at which the semesterised system of learning and community and social service ideology were reviewed and established. The inauguration of the students' union of Pachaiyappa's College for Women, Kancheepuram, was an occasion to review the goals of women's education and stress the importance of each student relating her objective to the study opportunities open to her. Pachaiyappa's College for Men, Kancheepuram, also had a celebration at this time for one of its founders when the need for the college to improve its academic performance was emphasised.

Tiruchy AIR and BHEL:

Tiruchy AIR inaugurated a four days a week non-formal education broadcast as noted earlier. The inauguration was held at mid July and the Directors of Madras and Tiruchy AIR, the Director of Non-Formal Education and the Vice-Chancellor of Madras University participated in the event. The message on that occasion was that non-formal education was a form of education which was devised for each group of individuals rather than individuals being fitted into pre-conceived education moulds. On the same day, BHEL (Tiruchy) celebrated the annual day of its Training Institute, when the combination of education and employment, innovation in teaching and learning and the possibility of the BHEL (R and D) Centre, the training centre and REC developing into a university of energy were emphasised.

WUS and Racing Committee:

WUS held a meeting of its General Body at the end of July and adopted a revised constitution which defined more precisely what are the groups included in the student category and gave the student members more power and initiative. Also the WUS Centre students were given more of a voice in the functioning of the Service. The Racing Committee had its final meeting on July 22, signed its report and presented it personally to the Chief Minister who has some very definite ideas on the subject. The Committee's conclusion was that racing touches less than 2 per cent of the people of the State, that the poor are not involved and that a State agency should be set up to regulate racing and curb its abuses.

Women's Seminar and Seva Samajam:

The 3 week seminar for US women educators on the changing of women in the UN Decade ended towards the end of July and in the valedictory function the fact that the discrimination against women can only be fought within the framework of the fight against inequality and injustice, and that this discrimination is a universal problem which must also be approached globally were emphasised. A few days later the Seva Samajam Training Centre had its graduation day when gratitude to Mrs. Clubwalla Jadav for founding this excellent institution was expressed and the importance of continuing in one's life the learning and the

integrity of character which the Institute imparts to its students was stressed.

NCC and M. Ct. M. Trust :

Towards the end of July there was a selection committee which selected some 25 NCC and Air Chief Commanders for the NCC Corps in 25 colleges. Also the M. Ct. Muthiah Chettiar Trust met in the University, reviewed its activities, decided to invite Prof. John Galbraith as its guest lecturer, continued its Space Science Fellowship in the University, and offered the University a 3 month Chidambaram Chettiar visiting professorship in social science.

University Events :

Two UGC Committees visited the University, the Committee on Adult Education and the Committee on Technology, during July. The Committees reviewed the University Programmes in these two areas and made their recommendations to the Commission. There was the annual NSS co-ordinators training course and a review at the Post-Graduate Institute of Basic Medical Sciences of staff and other requirements for the year. The Central Instrumentation Services Laboratory at the A C College campus was inaugurated and the monthly meeting of the Syndicate of Madras University was held as planned on July 30.

August Development Seminar :

The August Seminar paper "Ecology and Demographic Perspectives" by Prof. V. Shanmugasundaram, together with a summary of the discussion of the paper at the seminar chaired by Dr. C. T. Kurien, Professor of Economics, Madras Christian College, Tambaram, appears as the first article.

Second Article :

The second part of a paper "Financing of Education" appears as the second article.

It is with proofund sorrow that the Director, staff and members of the Development Seminar of the Institute record the passing away of Miss Sarah Pothan, Assistant Editor of the *Bulletin*, on August 6, 1977. Miss Pothan edited the *Bulletin* from its foundation, Vol 1 No.1 and was correcting the proofs of this issue, Vol VII No. 9 when she left us. She leaves behind lasting and affectionate memories of a gentle and godlike personality, courtesy and friendship for all, devoted and painstaking work on the *Bulletin* and a spirit of help and understanding to all persons with whom she worked. May her soul rest in peace and may the tradition of sacrifice and service that she has left behind continue to inspire all of us in the Institute and the readers of the *Bulletin* scattered all over the world.

ECOLOGY AND DEMOGRAPHIC PERSPECTIVES

By

V. SHANMUGASUNDARAM

Madras

1.0 Introduction

1.1 Demographic studies have been very heavily value loaded in the last thirty years in India. It is an interesting but not an authentically documented area of inquiry. While the emphasis in this paper is on both ecology and demographic perspectives, their linkages with economic development in Tamil Nadu and the rest of India are also relevant. The theory of demographic change from the geopolitical, social and economic planning angles is examined. The methodology of statistics is perhaps the most frequently used tool. Though highly sophisticated, its efficacy is questionable in terms of human population. Nevertheless, measurement and quantification are unavoidable in scientific discussion. To the extent necessary, statistical tools have been used. Logical, cultural and philosophical instruments of study are perhaps more useful. This paper is very largely based on official data relating to Tamil Nadu economy. The background to this appraisal in terms of Indian and other third world economies is nevertheless given selectively.

1.2 The central theme of this paper is that in the total perspective of demographic planning, emphasis on the propagandist aspects of population control or elitist stances of fashionable discussion of ecological issues should be eschewed, especially by those who call themselves intellectuals. These problems are far too serious for the lives of the poor whose spokesmen should be more serious, and view the issues in the total eco-system in the context of culture. Linguistic nationalities of India, religious minorities and cultural heritages have to be understood in the larger context of liberalism and humanistic values. Economist *qua* economist has already overdone his role in many spheres of population control since the days of industrial revolution. The theories of population have turned out to be gloomy predictions because of the underlying ignorance of man's potentialities. We should not add to this single track misanthropy. An overview of the events of the past suggests that as the countries and peoples of the world come together more and more closely, not only transportwise, but also culturally in a just and peaceful society, population problems will wither away.

2.0 Demographic Accounting

2.1 A great variety of demographic studies can be given in national economic accounts. The proposed framework may serve (i) general and (ii) specific aims. The general aim is to give the broad patterns of the society and the changing patterns through time. The specific aim is to give a comprehensive and consistent basis for education and manpower research, policy and planning.[1] A system of demograghic statistics gives an integrated picture of human stocks and flows just as a system of national accounts statistics makes it possible to integrate information on economic and financial stocks and flows. There is one difference. A generation of endeavour and experience lies behind national economic accounting. But demographic accounts have not yet been formulated except in a few socialist countries. Information is on many of the characteristics of human beings: their age and sex, their marital status, their family and incomes, their medical and criminal records, their education, their role or lack of role in economic and social life. This information is not yet integrated. It should form a system of production, consumption, savings, accumulation, foreign trade, prices, etc.,

2.2 An integrated system would help to identify the relevant types of analysis. When making educational projections we should consider current changes in the educational system. Educational statistics concentrates heavily on stocks rather than on flows. The result is that we are not well-suited to an analysis of the mechanism of change. We need data on social and economic flows.

2.3 An integrated demographic framework should have built-in checks of the data to be used, to combine dat from the conventional separate statistical universes. The demand for a place in a university depends on many factors, such as type of school, individual ability, family background, job preference, and home locality. All these contribute to determine the attractiveness of higher education. The applications for admission have to be cross-classified by these criteria, some of which lie outside the conventional educational statistics. Similarly, for many purposes it is necessary to link flows out of the Health and Welfare administrative systems.

2.4 Data collection costs money, and methods of collection cannot be changed overnight. We should be careful in getting the most out of existing data and locating micro studies to test our hypotheses. Demographic accounting is meant to provide a quantitative description of certain aspects of society, to help in selected areas of policy-making and planning. The flows of human beings through learning, healthy living, earning and producing activities should be balanced by current and future stocks of population. Consequently their substantive uses are to be found in education planning, manpower planning and economic planning in general. A number of possible uses can be identified as follows.

2.5 Human Resource Planning requires a consistent body of information (i) on the changing age-composition of the work force in specific industries, (ii) on the skills of new entrants and

1. STONE, Richard : *Demographic Accounting and Model Building*, (OECD, Paris, 1971), pp. 13-17.

(iii) on the specialised qualifications at least of those engaged in certain occupations. Next we have to identify potential imbalances in the immediate and future demand for and supply of certain kinds of human resources. Thirdly, we have to take note of the decision-making processes, and institutions, individuals, educational authorities, employers, professional associations, etc. Data needed for discussing the allocation of economic resources at the village, block, district, state and all-India levels, could be rationally obtained from such demographic accounts. Indian planners, at least in theory, have moved from purely financial planning to financial and/or physical (material) planning. The next decade beckons us to move into social and demographic planning, making both financial and material planning techniques subservient to the welfare of human being.

3.0 Demographic Change Since 1850

3.1 After 1850, earth's population has doubled. But there are regional differentials in rates of growth with many contrasts. It appears that Asia did not keep pace with earth's overall accelerated growth in the nineteenth century so that its proportion of world population may have shrunk from about 63 per cent in 1850 to around 55 per cent a century later.[2] This was almost entirely due to the stagnation of Indian and Chinese population growth rates over the last half of the nineteenth century. Africa may have just equalled the average rate of increase for the earth as a whole, and maintained its relative proportion of world population, of between 8 and 9 percent. The European settlements, have markedly improved their relative position, rising from 28.6 per cent of the earth's population in 1850 to 38.9 per cent a century later. The swelling rates of increase in the Americas (5.8 per cent of the earth's population in 1850 to 13.6 per cent in 1950), was based upon rapid natural increase as well as remarkable immigration from Europe.[3] In Europe, including Russia, which contained 22-23 percent of the earth's people in 1850, the proportion was about the same a century later in 1950.

3.2 Therefore, for over 150 years, the technologically advanced peoples of the earth with European backgrounds had grown in population and the population of Asia lagged behind. Only in the last few decades there has been some reversal in the positions of the more developed. This is the historical background of the economically poorer, less literate, and predominantly rural populations, chiefly in Latin America, Africa and Asia which are only recently expanding most rapidly. This may be a feature that presages political, social and economic revolutions.

3.3 Population estimates at village and district levels are essential. Surprisingly but truly, earliest local censuses were conducted in Asia,[4] in Babylonia

2. TREWARTHA, G. Y.: *A Geography of Population: World Patterns.* (London, 1969) pp. 68-69.

3. Loc. cit.

4. SPIEGELMAN, M.: *Introduction to Demography,* (Cambridge, Harvard University Press, 1968), p. 1.

before 3800 B.C. and in China about 3000 B.C. and in Egypt near 2500 B.C. In ancient India, particularly southern India, elections were held and counting, therefore, had taken place. In England and Wales the first census was in 1801, and as early as 1851 there was a census of Madras Presidency. We cannot state, therefore that we lack historical or recent census data. But as regards accuracy, one cannot be very sure. For development policy purposes, it is not all-India census or State census that is so important as micro census data pertaining to a village, a block or a district. Continuous demographic studies at basic levels of planning are required for development from below. This need is, of course, in addition to decennial census which have been conducted since 1871.

4.0. General Characteristics of Demographic Data of Tamil Nadu and Economic Development

4.1. In Tables I and II is given an overview of population data, including religious and cutural compositions. In modern studies of demography, population, employment, income, health, nutrition, education and housing of the people inhabiting a country or region are covered. In the MIDS monthly seminars some of these aspects are likely to form the themes for subsequent discussions. Hence I am focussing attention mainly on the arithmetic of population with a few indispensable issues.

4.2. The population growth rate has been 2.2 per cent per annum. This is less than the All-India growth rate of 2.5 per cent. The rate for Egypt is also 2.5 per cent and that for Sri Lanka is 2.3 per cent. The skill and care with which successive governments of Tamil Nadu have handled the population problem should be appreciated. However, the average for Tamil Nadu as well as India hides certain sectoral phenomena which go counter to the general trend of reducing the population growth rate. For instance, though we do not present separate growth rates for Hindus and Muslims, we find that between 1951 and 1971 the percentage distribution has changed in favour of minority religions, which by and large and for very logical and survival reasons resisted population control.

TABLE 1

DEMOGRAPHIC DATA, TAMIL NADU (1971 CENSUS)

1. Total Population

	Persons	Males	Females
Total	41,199,168	20,828,041	20,371,147
Rural	28,734,334	14,438,727	14,295,607
Urban	12,464,834	6,389,294	6,075,540

TABLE 1 (Contd.)

1.1 Decennial Growth Rate (1961-71): [22.30 per cent]

1.2 Birth & Death Rate (1970)

	Per 1000 Births	
	Still Births	Infant Mortality
Rural	20.1	131.4
Urban	(Not available)	82.1

1.4 Projected Expectation of Life at Birth

Male: [56.1 years; Female: 54.2 years.]

1.5 Density of Population: 317 persons per sq km.

1.6 Sex Ratio: 978 females per 1,000 males

1.7 Literacy Rate (Percentage) (Including Age Group 0-4)

	Persons	Males	Females
Total	39.46	51.78	26.86
Rural	32.13	45.14	18.98
Urban	56.36	66.76	63.70

1.8 Proportion of Urban Population to Total Population: 30.26 per cent.

No. of towns	439
No. of villages	15,735
No. of occupied residential houses	7,708,173

1.9 Broad Age Composition

Age Group	Number (in millions)	Percentage to Total Population
Total	41.2	100.00
0–14	15.6	37.77
15–59	23.3	56.48
60+	2.4	5.74
Age not specified	0.003	0.01

Scheduled Caste & Scheduled Tribe Population

S.C.	7.3	millions	17.76%
S.T.	0.3	,,	0.76%

Source : Hand Book on Demography—Tamil Nadu (1974)

TABLE 2

RELIGIOUS AND CULTURAL DATA : TAMIL NADU (1971)

A. Religion:	(Percentage to Total Population)		
Hindus	89.02	Buddhists	(Negligible)
Christians	5.75	Others	0.01
Muslims	5.11	Jains	0.10
Sikhs	0.01	Religion not stated	(Negligible)

Note : Total number (in millions) : Hindus 36.3; Muslims 2.1; Christians 2.3; Sikhs 0.004; Jains 0.041; etc.

B. Mother tongue:	(Percentage to Total Population)		
Tamil	84.51	Sindhi	0.02
Telugu	8.74	Punjabi	0.01
Kannada	2.56	Bengali	0.01
Urdu	1.84	Oriya	(Negligible)
Malayalam	1.36	Sanskrit	(Negligible)
Gujarati	0.48	Assamese	(Negligible)
Hindi	0.15	Kashmiri	(Negligible)
Marathi	0.15	Other Languages	0.016

Note : Total numbers (in millions) : Tamil 34.8; Telugu 3.6; Kannada 1.0; Urdu 0.7; Malayalam 0.5; Gujarati 0.1; Hindi 0.06; Marathi 0.05; etc.

Source : Department of Statistics, Government of Tamil Nadu : Hand Book on Demography—Tamil Nadu (1974).

4.2 The Cultural Perspectives

Languages and cultures of the peoples of Tamil Nadu pertain predominantly to Tamil (85 per cent). The peoples speaking Telugu, Kannada and Malayalam also belong to the same Dravidian cultural nationalities, and together constitute 12 per cent of the population. In all, 96% of the people have common cultural ties. Appropriately one of the aims of Perspective Planning in Tamil Nadu is to use the cultural ethos and Tamil Renaissance as motive force and engine of economic development. People require certain inner force, urge and non-economic motivation for major achievements. Cultural revolutions and major political upheavals have often taken place for reasons other than acquisition of wealth and income. And this cultural force has to be harnessed for the good of the people of Tamil Nadu, and for economic development. Table 2 shows that peoples speaking all the fourteen national languages are within a percentage reach.

4.3 Religious Perspectives

The making of India in 1947 has a background. The Muslim majority areas became Pakistan. The Union of India, under the Constitution (1950) became secular and hence it may be argued that there is no need for any minority religion to think of population numbers as a source of strength. On the contrary, the very concept of production on the basis of numbers gives a psychological and constant reminder of the need to have sufficiently effective numbers. And the religious institutions which are far more effectively organised than the secular counterparts, have power and efficiency to pass instructions by word of mouth. Basically, until conditions of equality of opportunities for education, employment and income become realities, the urge to sustain increasingly strong "group populations" would continue in India so as to ensure political and social rights. At this point, the subject leaves the hands of an economist, and is in the safer hands of a religious leader. We see in Table 3 the rise in minority populations from 4.8 per cent to 5.1 per cent and 4.7 per cent to 5.7 per cent between 1951–1971.

TABLE 3

PERCENTAGE DISTRIBUTION OF POPULATION BY RELIGIONS IN TAMIL NADU 1911 to 1971

Year	Hindus	Christians	Muslims
1911	92.1	3.6	4.3
1931	91.4	4.1	4.5
1951	90.4	4.7	4.8
1971	89.0	5.7	5.1

Source : Pocket Book of Population Statistics, 1972, Director of Statistics, Government of Tamil Nadu.

4.4 High infant mortality as a deterrent to family planning

With high infant mortality rates and also high death rates, there is a tendency to ensure high birth rates. With 142 and 139 per thousand as infant mortality rates for Pakistan and India respectively, we find that the crude birth rates are 50.9 and 42.8 for the respective countries. In contrast, in countries like Japan, Canada and U.S.A. where infant mortality rates are low (13.1, 19.8 and 19.3), birth rates are also very low (6.9, 9.4 and 7.3).

This is a pointer to the fact that the efficacy of health services sufficient enough to bring down infant mortality should precede any propaganda to reduce birth rates.

TABLE 4

INFANT MORTALITY AND BIRTH RATES (per thousand)

Country	Year	Infant Mortality Rate	Death Rate	Birth Rate
Pakistan	1967–70	142.0	18.4	50.9
India	1965–70	139.0	16.7	42.8
Japan	1970	13.1	6.9	18.8
U.S.A.	1970	19.8	9.4	18.2
Canada	1969	19.3	7.3	17.5

Source: U. N. Statistical Year Book, 1972.

4.41 The Geopolitics of the Population Problem

One does not have to artificially marshal statistics to prove that density of population by itself is not the necessary or sufficient condition for low levels of income. With hardly 14.8 density per sq. km., Africa is by and large a poor country whereas Industrial countries have a high population density of 316 per sq. km. Asia wherein the population pressure is large is nevertheless poor. India has a population density of 168 and this by itself does not give a claim for high rate of growth or level of income. Population combined with capital and/or social and cultural transformation compensates for lack of capital, to bring about economic development.

4.5 Some Inter-State and Inter-District Comparisons

The average expectancy of life at birth in Tamil Nadu is 56 years for the male

and 54.2 years for the female. According to U.N. calculations this is the level pertaining to the middle income group III ($201–$375). It is also higher by about 5 years over the all–India rate. Tamil Nadu has an average density of population of 317 per sq. km. But there are districts like Coimbatore, Dharmapuri and Tiruchirapalli which have densities of 194, 174 and 269 respectively. The district with the highest density of 395 is Thanjavur which is the richest rice producing district. The city of Madras has a density of 19,293 per sq. km., and the metropolitan, commercial, government and industrial complex makes it possible to sustain this high density.

4.51 In respect of birth rates, the highest rates are noticeable in North Arcot, Chingleput and Kanyakumari, *viz.*, 40.3, 38.5 and 37 per cent. The State average is 35.4. These are districts with urban, commercial and plantation prospects.

4.52 The percentage of literates to total population has increased from 6 to 29 between 1911 and 1971 for India. In Tamil Nadu, during the same period the increase is from 9 per cent to 39 per cent. The female literacy rate has recorded a high rate of growth from 1.5 per cent in 1911 to 27 per cent in 1971, whereas the comparable all–India figures are respectively 1.1 and 18.7 per cent.

4.6 Income and Population Correlation

The average death rate per thousand is in the range of 45 to 50 in countries with an income below $200 per capita per annum and between 14 and 20 in countries with an average of $1000 per annum. The lowest rate is 13.7 for Sweden, here per capita income is the highest in the world. Similarly, the average expectancy is about 70 in the rich countries and 37 in the poor countries. The death rate is 23 for poor countries and 9 for rich countries. These statistics based upon data of the U.N. suggests the hypothesis that wealth and income ensure lower birth rate, lower death rate and higher expectancy of life. Rapid economic development brings about an equilibrium.

4.7 Just and unjust construction

Two possible constructions are often encountered in this context. We are not wanting in people who argue that our population is large and our population growth rate should be brought down. I would not contest this statement unless somebody over–enthusiastically adds that our large population is the cause of poverty. It is not the cause of poverty. It has been made a convenient excuse for explaining away poverty. Unwillingness to train our work force, inadequate political and social reforms to ensure equality, inequality in sharing the wealth produced and incapacity to apply science to agriculture and industry are some of the causes of poverty. If the population is made an asset, and if proper institutional safeguards are provided, we can create a human wave and upsurge, to wash off poverty. Nothing that has happened in India in the last 30 years has given me sufficient evidence to show that our population is responsible for poverty. On the contrary it is in populous states like Kerala and West Bengal—political, social and other institutional changes have taken place. In sparsely populated States like Madhya Pradesh (94 per sq. km.) and Rajasthan (75 per sq. km.),

socio-economic transformation has been rather slow. Tamil Nadu is on the path to bring about a thorough comprehensive transformation, but it has been far too long in the making.

4.8 A Problem of a surplus of Labour force is Paradoxical

This is what may be called "unsuitably educated people. Two thirds of those who matriculate stay on for some form of higher education and constitute a high proportion of failures"[5]. In Tamil Nadu nearly 4.5 lakhs of educated, are awaiting employment [6]. The terms like over-supply, unsuitably educated, job oriented education are the effusions of minds attuned to ratiocination. Without altering property relations, class stucture, social privileges and rigidities, it is futile to coin phrases out of fertile minds to keep the unemployed in a state of continued condemnation. The economy should be adjusted to use them. This is the first priority. This cannot brook delay. If the Government is for the people, and *vice versa* is not true, we expect policies for full mobilisation of work force. In the second priority, we could have rationalised long term educational and other plans. The food surplus and the social overhead needs of the community like provision of basic needs at increasing levels of consumption, could claim a large part of the educated manpower. For instance, Continuing and Adult Education presuppose a large network of libraries, authors for neoliterates, library management, etc. But this is now an occupation of matriculates—inadequately trained persons. Similarly elementary schools ought to employ only graduates or post-graduates but they in fact are very largely in the command of matriculates. Incomes and wages policy needs mending with this objective.

4.9 The Primacy of a Distributive Economy or a New Economic Society

There is undue emphasis on growth rates and financial accounting in Indian planning. And planning at the State level is a sub-set of Indian planning. The dominant role of money and old institutions like large property owners, hereditary investors, high income inequalities, *ad hoc* price adjustments, etc. distort our planning goals. Basically, most important resource available is the human resource, and the relevant high priority areas of production are: (i) Good services to meet basic needs and (ii) industrial and other infrastructure essentials for (i) above. The distribution and redistribution of National Income should therefore be largely wage-based or worker-oriented. In such a system the relationships given in Diagram I below should obtain between primary distribution and final distribution. In the new economic society contemplated, different phases of activity (Phases I, II and III) would not only ensure full satisfaction of basic needs but also make

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5. STREETON, Paul and LIPTON, Michael (Ed). *The Crises of Indian Planning,* (Oxford 1972), p. 214.

6. SHANMUGASUNDARAM, V (Ed.) *The Educated Unemployed in Tamil Nadu,* Government of Tamil Nadu (Mss.), Madras 1976.

the instruments of taxation, savings and accumulation serve the basic purpose of redistributive justice. Diagram I gives the new relationships.

4.91 Population and Wage Goods Relationship

The old Malthusian argument has some basic truths regarding food needs for survival and for generating industrial surpluses. The estimates of food production in Thanjavur (for rice) and South Arcot (for groundnut) suggest that if other districts in Tamil Nadu could take to comparable tempo of production, we can face the Malthusian dilemma. The wage goods relationship is largely a matter of food, oilseeds and goods which could be exchanged for them.

4.92 The production of rice in Thanjavur district in 1973–74 was 12,293 lakh tonnes. It is 22 per cent of the total production of rice in the State. The Task Force on Agriculture has projected the supply for 1978–79 and 1983–84. Using the same proportion, the production of rice in Thanjavur district is estimated as shown below. The estimated production based on the average annual growth observed from 1970–71 to 1973–74 also does not differ very much from these figures.

TABLE 5

INCREASE IN RICE PRODUCTION AND POPULATION INCREASE IN THANJAVUR DISTRICT, 1973-1984.

Year	Total Production of Rice in Tamil Nadu (in lakh tonnes)	Production of Rice in Thanjavur Dist. (in lakh tonnes)	Population in Thanjavur Dist. (in million)
1973–74 (actual)	55.58	12.29	4.0
1978–79 (est.)	69.00	15.18	4.3
1983–84 (est.)	76.50	16.83	4.7

Source : Estimate for State Planning Commission.

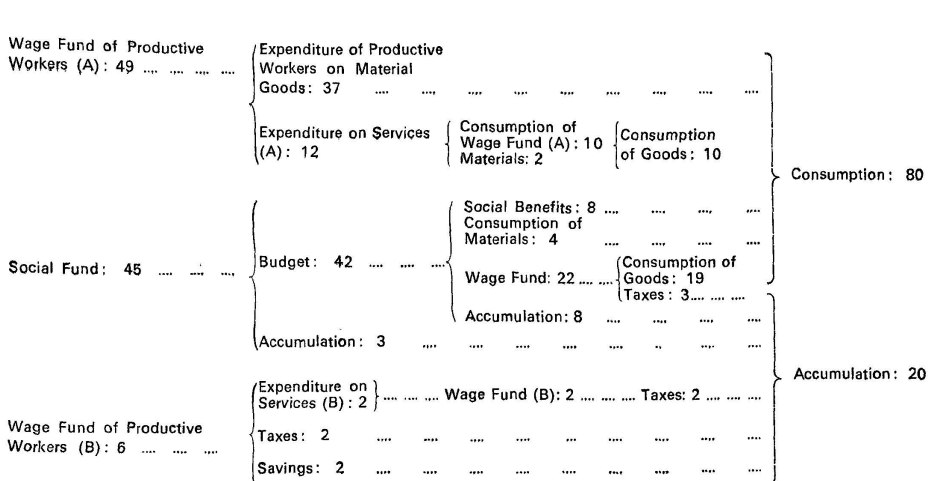

Diagram 1 DISTRIBUTION AND REDISTRIBUTION OF NATIONAL INCOME IN NEW ECONOMIC SOCIETY

Source: Modified from Parker, R. H. and Harcourt, G. C. (Ed): "A Note on Some Aspects of National Accounting Methodology in Eastern Europe and the Soviet Union" in *Readings in the Concept and Measurement of Income*, (Cambridge, 1969), Chapter 24. See also Zienkowski, L., *National Income*, (Warsaw, 1959).

4.93 The production of groundnut (unshelled nuts) in South Arcot district in 1973–74 was 2.546 lakh tonnes, or about 21 per cent of the total production in the State. The Task Force on Agriculture has projected the supply of 1978–79 and 1983–84. Using the same proportion, the production of groundnut in South Arcot district is estimated as shown below. The estimated production based on the average annual growth observed from 1970–71 to 1973–74 also does not differ very much from these figures.

TABLE 6

INCREASE IN GROUNDNUT PRODUCTION AND INCREASE IN POPULATION IN SOUTH ARCOT, 1973-84

Year	Total production of groundnut (unshelled) in Tamil Nadu	Production of groundnut in South Arcot District (in lakh tonnes)	Population in South Arcot District (in million)
1973–74 (actual)	11.99	2.546	3.8
1978–79 (est)	18.42	3.868	4.1
1983–84 (est.)	23.79	4.995	4.4

Source : Estimates for State Planning Commission data.

5.0 Significance of ecology and the required changes in attitudes in Tamil Nadu

5.1 Since the rise of mathematical, physical and quantitative sciences, the behavioural and moral sciences have taken a back seat. What was moral philosophy from the days of Aristotle to Adam Smith is now mathematics in numerous sets and subsets. Nevertheless, relationships between nature and man, man and man and innumerable interrelationships between different species constitute a total system of population known as ecological system. The small fish is devoured by the big fish. In turn, the latter is digested by the whale which lives long, but not for ever. The creatures of the sea and earth, and those of the space have to adjust their lives to each other under compulsions of life force. Command over laws of nature and use of science in such new technical forms like new modes of transportation, new chemical and physical products complicate the eco-system almost directly proportional to the new life styles of humanity. There are a number of possible relationships between co-operative, competitive and destructive population systems.

5.2 Man and his artifacts

The man and his artifacts have somehow managed so far to expand for thousands of years without showing any sign of reaching an equilibrium, whereas cases "of this sort are virtually unknown in the biosphere".[7] Artifacts are those populations which man himself creates like knowledge, capital goods, from primitive stone tools to computers. An equilibrium is reached either the Malthusian way, *viz.*, man's incapacity to produce (food and other) artifacts *or* the nuclear war or pollution way.

5.21 Human creativity very soon breaks the point of equilibrium and produces a further spell of excess of artifacts. Another relationship pertains to two spheres, the first of which benefits by the second, but the second detests the first: for example, fleas and dogs. Fleas thrive on dogs even as dogs detest fleas. And fleas multiply with every increase in the population of dogs. But there cannot be a large enough dog population which by itself can extinguish the flea population, unless a special blood grouping of the dogs make flea bite fatal to the flea. There will be some fleas with no dogs. As flea population increases there will be fewer dogs. A disequilibrium caused by excess of fleas can destroy the entire dog population.

5.22 It is important to know the ecological relationships between different living and non-living species and also between physical force and chemical force, one class of living being and another class. The survival balances suggest possible ecological equilibria.

5.3 Ecological imbalances in Tamil Nadu

In Tamil Nadu the ecological problems are complex because it is an old human settlement and the courses of rivers have changed and forests have been denuded. Overgrazing and trampling by villagers have removed the few surviving bushes and shrubs. Land has become barren and boulder covered hill masses are conspicuous in Tamil Nadu. Tamil Nadu has good red soil and in the past centuries it was covered by dense forests. The present "rocky ridges" represent the final stage to which land has been reduced by "destructive natural agencies let loose by thoughtless human actions".[8] The important areas for action pertain to the use of barren *poramboke* lands, forests, improper use of hill slopes, careful use of ground water, choice of plantations, preservation of wild life, careless dumping of wastes, and quarrying, are some of the issues for urgent ecological planning. Education and publicity should precede official action. Of particular importance is the preservation of wild life and certain healthy old systems. Herbs, native plants and trees whose uses are not known to western science, have been systematically eliminated. If mini-enclosure movements could be encouraged and *poramboke* lands preserved from trespassers and village cattle, natural vegetation itself would enrich the soil of Tamil Nadu. The Palar river in North Arcot district as well as the groundwater table in Coimbatore,

7. Boulding, K.E.: *Economics as a Science*, (New York, 1970), p. 29.

8. Shanmugasundaram, V., *et al.*: *The Ecological Situation in Tamil Nadu for Amelioration*, (Govt. of Tamil Nadu, 1973), p. 3.

Ramnad and Thanjavur have been steadily going down posing a new ecological problem accentuated by drought periods. The ecologist believes that man's activities constitute a perpetual source of disturbance of the environment which would otherwise tend to reach a natural state of equilibrium. Every discipline has its own central purpose. The ecologist's warning has to be heeded. A list of research themes and an agenda of work have been drawn up by the Government of Tamil Nadu. An ecological research body has been recommended.[9] At present, for the District Plans of Dharmapuri, Salem and North Arcot ecological data are being collected. The work done on the vegetation map by the French Institute in Pondicherry is very useful,[10] but not adequate to meet the problems posed by ecological deterioration. A plea for a bold forest policy and reservation of sufficient land area for afforestation has been made. A detailed programme was worked out by the State Planning Commission[11] for 1972-84.

5.4 Towards a Cleaner Coum, and Useful Buckingham Canal

The Coum and Buckingham Canal were meant to carry clear water and transport. Yet, along the Coum for several decades the refuse of the city and stink were abounding. This ugly line on the face of the city was cleaned and made fit for boating for considerable stretches during 1967–75. However, there are connecting lines of Buckingham Canal, near Lock Nagar (east of T. V. Centre) and running along the west of Kamarajar Salai, which require urgent care and attention. The slum houses with high density of population also seem to be wanting in additional sanitary facilities. The Madras Metropolitan Development Authority has to think of a total plan for water supply and sewerage.

5.5 Educating the young and also the "socalled educated".

School children at a sufficiently young age do not seem to develop healthy habits either in using drinking water or in keeping the place tidy. Children have to be caught young. Our successful Asian neighbour Japan, which introduced compulsory primary education earlier than Britain and other European countries, has more than a century of well established health habits. I recall the instances of deterrent punishment, sometimes even ruthless beheading of persons found spitting on the roadside during Japan's occupation of Singapore. The military motives apart, the intense desire to keep the place clean is typically oriental but it seems to have loosened in India. And today we have nothing but dirty villages, dirtier towns, and stinking cities. Good health practices should become life long habits of the poor and the rich, the latter especially because they encourage dirt outside their mansions, offices and factories.

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9. *Ibid,*
10. Project for International Map of Vegetation guided by Prof. Blasco of the French Institute, Pondicherry.
11. Adiseshiah, Malcom S: *Task Force Report on Forestry,* (Government of Tamil Nadu, 1973).

5.6 A plea for sanitary culture

The Madras Marina which is perhaps the most beautiful coastline in India and reputed to be the second longest in the world can be finer still. From the mouth of Cooum almost upto Mahabalipuram we can beautify the broad beach stretch. Along this health resort, the pollution that takes place by people using it as an open toilet close to the waterline should be seen to be believed. All along the railway lines, such sights are inescapable in mornings and evenings. The high literacy rate of the City of Madras does not seem to be a sufficient cure. The sanitary facilities provided to the hutment dwellers do not seem to be preferred alternatives. This is a question of sanitary culture which should be developed on a massive scale by suitable methods. Even in large offices and public institutions there is an unwritten law, that important persons should have good sanitary facilities, and the not-the-so—important should use polluted toilets. The status oriented society is ingenious in preserving its vested interests even if it costs the health of the people. In respect of basic human needs—food, clothing, housing and sanitation—human equality is both possible and essential. Could we appeal to common people in the name of "hoary culture and ancient past", and tell them not to pollute places like the Madras Beach which has been made the abode of great savants, scholars, poets and patriots starting with the statue of Veerama Munivar in the north to the statue of Mahatma Gandhi in the south, along the Kamarajar Salai. As regards the indifference of the educated, we need to think of a new system of re-education plus punishments and fines. Mass action, to be effective, should be preceded by a careful study of the ecosystem, sanitary habits and life styles of those responsible for this misdemeanour.

6.0 The Goals of Health Policy and Health and Allied Plans in Tamil Nadu

6.1 The goals of health policy for the period 1972–84, "will conform to the health objectives embodied in the constitution of the World Health Organization and the constitution of the Republic of India".[12] The W.H.O Constitution declares "Health is a state of complete physical, mental and social well-being and not merely absence of disease or infirmity ..... The achievement of any State in the promotion and protection of health is of value to all and ... unequal development in different countries in the promotion of health and control of disease, is a common danger"[13] and Directive Principles of the Indian Constitution state *inter alia*: "The State shall, in particular, direct its policy towards securing that the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength. The State shall, within the limits of its economic capacity and development, make effective provision for old age sickness and disablement. The State shall make provision for securing just and human conditions of work and for maternity relief. The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as amongst its primary duties."[14]

12. Adiseshiah, Malcolm S: *Towards a Healthy Society* (The Perspective Plan for Tamil Nadu. Report of the Task Force on Health, Family Planning, Nutrition and Sanitation, 1972-84), (Government of Tamil Nadu, 1972), p.1.
13. *Ibid*. quoted.
14. *Ibid*. quoted.

TABLE 7

FIFTH AND SIXTH PLANS OF TAMIL NADU FOR SOME ASPECTS OF DEMOGRAPHIC DEVELOPMENT CHANGE

(Rupees in lakhs)

Sl. No.	Sector	Perspective Plan Outlay		
		Vth Plan	VIth Plan	Total
I.	**Manpower and Employmet**			
1.	Craftsmen Training	962.88	1,565.00	2,527.88
2.	Employment Services			
i)	Employment Guidance and Placement	105.74	221.78	327.52
ii)	Vocational Guidance	59.30	116.82	176.12
iii)	Occupational Research and Analysis	33.63	50.00	83.63
iv)	Implementation of the Compulsory Notification of Vacancies Act	34.00	50.00	84.00
v)	Manpower Research	338.95	620.00	958.95
vi)	Placement of the Physically Handicapped	7.00	30.00	37.00
3.	Employment Generation Scheme (Central Sector)	4,100.00	8,200.00	12,300.00
	Total	5,641.50	10,853.60	16,495.10
II.	**Labour Policy and Programmes**			
	Programmes for Labour Welfare	121.50	326.50	448.00
	Total	121.50	326.50	448.00
III.	**Development of Human Resources and Social Change:**			
1.	Human Resource Development and Social Change	1,975.00	4,650.00	6,625.00
2.	Public Co-operation Planning Forums	25.00	75.00	100.00
	Total	2,000.00	4,725.00	6,725.00

Table VI (Contd) (Rupees in lakhs)

Sl. No.	Sector	Perspective Plan Outlay		
		Vth Plan	VIth Plan	Total
IV.	**Welfare of the Harijans**			
A.	SCHEDULED TRIBES:			
1)	Research	20.00	30.00	50.00
2)	Education	57.50	181.45	238.95
3)	Employment & Economic Advancement	53.12	131.54	184.66
4)	Special Health, Housing and other Schemes	68.40	198.90	267.30
	Sub–Total	199.02	541.89	740.91
B.	SCHEDULED CASTES:			
1)	Research	88.65	200.00	288.65
2)	Education	925.09	2,239.60	3,164.69
3)	Employment and Economic Advancement	252.91	613.13	866.04
4)	Special Health, Housing and other Schemes.	484.70	1,425.70	1,910.40
	Sub–total	1,751.35	4,478.43	6,229.78
	Total A+B	1,950.37	5,020.32	6,970.60
V.	**Welfare of other Backward Classes**			
1)	Research	—	75.00	75.00
2)	Education	1,291.63	3,413.40	4,705.03
3)	Employment and Economic Advancement	267.15	650.00	917.15
4)	Special Health, Housi.._g ...d other Schemes	100.00	250.00	350.00
	Total	1,658.78	4,388.40	6,047.18

Table VII (Contd) (Rupees in lakhs)

Sl. No.	Sector	Perspective Plan Outlay Vth Plan	VIth Plan	Total
VI.	**Welfare of the Denotified Tribes (Central Sector)**			
1)	Education	232.00	617.33	849.33
2)	Employment and Economic Advancement	191.00	473.00	664.00
3)	Special Health, Housing and other Schemes	45.00	135.00	180.00
	Total	468.00	1,225.33	1,693.33
VII.	**Social Welfare and Social Defence:**			
A.	SOCIAL WELFARE :			
1)	Women's Welfare	70.00	152.00	222.00
2)	Family and Child Welfare	1,454.30	2,960.60	4,414.90
3)	Programmes for the Physically Handicapped	95.25	234.00	329.25
4)	Research and Analysis	101.00	235.00	336.00
5)	Other Social Welfare Programmes	145.00	200.00	345.00
6)	Administrative Set-up	148.13	219.00	367.13
	Sub-Total	2,013.68	4,000.60	6,014.28
B.	SOCIAL DEFENCE :			
1)	Approved Schools and Vigilance Service	216.16	458.38	674.54
2)	Jail Administration	192.75	385.50	578.25
	Sub-Total	408.91	843.88	1,252.79
	Total A + B	2,422.59	4,844.48	7,267.07
	Grand Total I to VII	14,262.74	31,383.63	45,646.37

Sources : Shanmugasundaram, V.: *Human Resources for Prosperity in Tamil Nadu* and *A New Society Through Renaissance in Tamil Nadu* (for Tamil Nadu 1973).

6.2 Plans for Health and Family Planning

The Union Government has followed in the year 1976—especially under the Emergency a policy of intensified family planning drive. The National Development Council which approved the V Five Year Plan 1974–79 provided for spending Rs. 497 crores, more than half of which was planned as outlay for 1977–79.

TABLE 8

SUMMARY OF PLAN OUTLAY FOR FAMILY WELFARE PLANNING PROGRAMMES DURING THE FIFTH PLAN

(Rupees in crores)

Programme	Draft Fifth Plan	1974–77 Anticipated Expenditure	1977–79 Proposed	Revised Fifth Plan Outlay
1. Services and Supplies	422.53	197.74	221.67	419.41
2. Training	13.54	6.17	5.90	12.07
3. Mass Education	22.00	6.45	6.68	13.13
4. Research and Evaluation	14.33	3.45	5.58	9.03
5. World Bank Project	19.50	15.68	9.06	24.74
6. Meternity and Child Health	15.00	2.73	5.84	8.57
7. Organisation	9.10	5.43	3.98	9.41
Total	516.00	237.65	259.71	497.36

Source : Government of India : *Fifth Five Year Plan, 1974–79.* (Planning Commission, New Delhi, 1976).

6.3 Outlay, Setbacks and Success of health progrmmes

In contrast to this fairly large budget the nutrition programme was slashed from Rs. 400 crores in the draft plan to Rs. 116 crores. It is not the magnitude of Rs. 497 crores as against the earlier proposed outlay Rs. 516 crores, which is important. We have to view the religious reaction of traditional people on the one hand, and the motives (intended or feared) which are backed by official action. We are too close to contemporary events in India to know all the economic and social causes of the defeat of the Congress and the victory of the Janata Party in forming the Government of India. Family planning practices seem to have added oil to the fire of political agitation.

6.31 Reasons for successful policy acceptance in Tamil Nadu

Of more direct relevance for Tamil Nadu perspective is that in neither the Parliamentary elections nor the Assembly elections of 1977 Family Planning formed a major theme as it did in the rest of India. The reason was that whether it was the former Congress Government or its successor Governments formed by Dravida Munnetra Kazhagam (DMK) and All India Anna D.M.K. (AIADMK) family planning was a basic article of faith. The people of Tamil Nadu more particularly non-Congress parties that have been ruling Tamil Nadu during the last 10 years, came under the social reformist, rationalist and humanistic movements headed by the octogenarian leader Periyar E. V. Ramaswamy and the three successive Chief Ministers who came under his influence—Dr. C. N. Annadurai, Dr M. Karunanidhi and Thiru M. G. Ramachandran, subscribe to the ideal of family planning as a facet of rationalist movement. Popular and non-official support has preceded efficient official actions and has made family planning a success in Tamil Nadu, though much more remains to be done.

6.4 Tamil Nadu — A Perspective Plan 1974-84

The Perspective Plan[15] relating to health, nutrition, family planning, water supply and sanitation and allied aspects was based on the Task Force Report which recommended among other things, provision of mini health centres, subsidisation of thousands of indigenous medical practitioners belonging to the Sidha, Unani and Ayurvedic schools besides the Homeopathic doctors. The Report recommended a State Health Insurance Programme. In respect of Family Planning the target was the reduction of birth rate to 25 per thousand in 1979 and 22 per thousand in 1984. The Nutrition Plan suggested antenatal and postnatal care and special care of the pre-school children aged 0-5. The first priority in respect of sanitation is for the provision of drinking water to 4,916 villages which had no (protected) water supply. As many as nine groups of detailed projects/categories of services were also identified. The Perspective Plan was never meant to be a once-over exercise. The concept of a rolling plan was accepted and it implied that the plan would be continuously updated, depending on Union-State financial relations, and other new factors which should be taken into account in updating the Perspective Plan.

Finance wise the proposed outlays in the Perspective Plan and the actual outlays over the completed years of the V Plan showed a remarkable similarity in the percentage of allocation to the total outlay. However, one should go into the details and the projectwise expenditure. Secondly, the rise in the cost of many projects, at an annual rate of 7 to 10 per cent is now noticeable. Consequently cuts are more severe wherever inflationary pressures are high.

15. State Planning Commission: *The Perspective Plan for Tamil Nadu, 1974-84* (Government of Tamil Nadu—March 1974), Ch. 13.

6.5 Age at Marriage and Population Control

The age at marriage in India appears to be the lowest among the countries of Asia. The median age of the female is 14.5 and of the male 20.03. In North America and Europe[16] the female age at marriage is around 20 and 22 and male 25 and 27. Would the postponement of the age of marriage substantially reduce the poputation? Further, in a country where marriages are arranged, one has to balance the extra time and attention required every year of the postponement of the marriage to protect the "Bride" and the risks of not finding bridegrooms for overaged girls against the uncertain gain of reduction in population. We may therefore give low priority to the "law based postponement" of marriages except on health grounds. Prof. Gyan Chand[17], a believer in balanced thinking on population problems, advocates marriage by love and beckons *"Love's coming of age."* Should such a social change become a reality the marriageable age would reach 25–30 as it does in rich countries.

6.6 Malnutrition and Calorie Deficits

Official statistics in developing countries often underestimate the nutritional needs, and overestimate food output trends. The daily calorie deficit seems to be the highest (in the range of 202–213). It is true that Asia has populous countries; but is it not also true that they have feudal systems and a high degree of social and economic inequality? Under equitable sharing, the motive to increase output would be strong.

TABLE 9

DAILY CALORIE DEFICITS IN DEVELOPING COUNTRIES, 1965

Region	Regional Averages	Country Averages	Income Group Averages
Latin America	0	19	32–74
Asia	202	213	225–283
Middle East	19	32	32–45
Africa	48	50	61–86

Source : Reutlinger, S. and Selowsky, M. : *Malnutrition and Poverty*, (UN, 1976), p. 3.

16. *UN Demographic Year Book* and *Census of India*, 1961 and 1971.

17. Gyan Chand : *Population in Perspective*, (Orient Longman, 1972), p. 65.

6.7 Demographic Plan Outlays

According to the projections given in Task Force Report on Human Resources and Social Change for Economic Development, a total outlay of Rs. 142 crores was suggested for manpower, labour programmes, social change, Harijan welfare and backward communities at 1968–69 prices. Allowing for inflation, an amount of Rs. 308 crores proposed in the V Plan tallies with the expectations. The financial outlay for health and family planning was proposed at Rs. 424 crores but actual provision was only Rs. 131 crores in the V Plan. Fifty–eight projects were proposed for health and allied activities. The actual annual plans and the Five Year Plans are not component–wise comparable with the Perspective Plan, and the differences in the composition of projects proposed and the programmes drawn up in consultation with the Government of India are therefore difficult to spot out.

TABLE 10

PROPOSED FINANCIAL OUTLAYS ON HEALTH, FAMILY PLANNING, NUTRITION, WATER SUPPLY AND SANITATION, 1972-84

(*Rupees in crores*)

Year	Capital Expenditure	Recurrent Expenditure	Total outlay Proposed	Committed Expenditure
1972–73	10.14	81.84	92.18	—
1973–74	13.88	118.03	131.91	81.84
1974–79	43.41	380.75	424.16	222.47
1979–84	55.15	579.23	634.38	380.75

Source: Adiseshiah, M. S.: *Towards a Healthy Society* (Government of Tamil Nadu, 1972) p. 77.

Similarly 195 projects have been prepared for the use of human resources and social change for economic development. As in the case of health, it is difficult to point out which projects have been transformed into a comparable or different programme in the V Plan. But the outlay on welfare measures has been large as was intended.

6.71 Decline in Birth Rate Not Yet Achieved

Even recently we had hopes that the population growth rate could be reduced from 2.5 per cent per annum to 1.5 per cent in 1980–81. This requires a 20 per cent to 25 per cent decline in birth rate after allowing for expected decline in death rate.[18] A similar hope has been expressed by economists in Tamil Nadu. Yet we are quite far away from the targets.

7.0 CONCLUSION

7.1 Towards a Global Population Policy

In spite of our efforts to reduce populations, estimates by specialists indicate that Indian population growth rate would be around 2.52 per cent per annum during 1974–80 and 2.43 per cent per annum during 1980–85. Other developing countries of the world except Argentina, Egypt and Sri Lanka seem to have a high population growth rate between 2.5 per cent and 3.4 per cent per annum. Consequently Indian or international goals of population control seem to be still far away.[19]

Consistency in some respects may be a virtue of only uncritical minds. But in spheres which bear out truths and basic values consistency is indispensable. For over three decades I have held the view that population studies in India could broadly be deemed Demagogy rather than Demography. All the problems of poverty, ecology and failures of social and economic planning have been explained away by the myth of population explosion. If it is explosion at all, it is not peculiar to China or India and surely not special to Tamil Nadu.

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18. Dandekar, V. M. and Bhate, V: *Prospects of Population Control. Evaluation of Contraception Activity*, (Poona 1971): Foreword by V. M. Dandekar, p. vi.

19. United Nations: *World Population Projections*, 1975.

APPENDIX A. TOTAL POULATION OF TAMIL NADU 1961-81

(Population in lakhs)

	1961			1971			1981
	Males	Females	Total	Males	Females	Total	Projection
Rural	123.32	123.65	246.97	144.39	142.95	287.34	—
Urban	45.79	44.11	89.90	63.89	60.76	124.65	—
State	169.11	167.76	336.87	208.28	203.71	411.99	507.61

APPENDIX B. GROWTH RATE OF POPULATION IN TAMIL NADU DURING THE DECADE 1961-71

(Per cent per annum)

	Male	Female	Total
Rural	1.59	1.46	1.53
Urban	3.39	3.25	3.32
State	2.11	1.96	2.03

APPENDIX C. DISTRICTWISE POPULATION AND THE RATE OF GROWTH IN POPULATION IN TAMIL NADU, 1971-81

(Population in lakhs)

District	Population in 1961			Population in 1971			Rate of Growth per cent per annum			1981 Projection
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Average	
1. Madras	—	17.29	17.29	—	24.69	24.69	—	3.63	3.63	34.20
2. Chingleput	17.41	4.55	21.96	18.97	10.11	29.08	0.86	8.31	2.85	38.86
3. North Arcot	25.15	6.31	31.46	29.73	7.83	37.56	1.69	2.18	1.79	44.56
4. South Arcot	26.56	3.92	30.48	31.05	5.13	36.18	1.57	2.73	1.73	48.17
5. Dharmapuri	—	—	—	15.34	1.44	16.78	—	—	—	22.08
6. Salem	—	—	—	21.97	7.95	29.92	—	—	—	37.88
7. Coimbatore	25.25	10.32	35.57	28.17	15.56	43.73	1.10	4.19	2.09	53.76
8. Nilgiris	2.29	1.80	4.09	2.51	2.43	4.94	0.92	3.05	1.91	6.48
9. Madurai	21.95	10.16	32.11	26.14	13.24	39.38	1.76	2.68	2.06	48.13
10. Tiruchirapalli	25.12	6.78	31.90	29.92	8.57	38.49	1.76	2.37	1.89	46.11
11. Thanjavur	25.84	6.62	32.46	30.53	7.88	38.41	1.68	1.76	1.70	45.64
12. Ramanatha-puram	18.22	6.00	24.22	21.13	7.47	28.60	1.49	2.22	1.67	35.15
13. Tirunelveli	18.82	8.48	27.30	21.71	10.29	32.00	1.44	1.95	1.60	37.36
14. Kanyakumari	8.47	1.50	9.97	10.18	2.04	12.22	1.86	3.12	2.05	15.73
Tamil Nadu	246.97	89.90	336.87	287.34	124.65	411.99	1.53	3.32	2.03	507.61

Source : Director of Statitics. Some of the projections were made by R. Bakthavatsalam of the State Planning Commission.

APPENDIX D. SEX RATIO OF THE POPULATION IN TAMIL NADU AND INDIA, 1901 to 1981

Year	(Number of Females per 1000 Males) Tamil Nadu	India
1901	1,044	972
1911	1,042	964
1921	1,029	955
1931	1,027	950
1941	1,012	945
1951	1,007	946
1961	992	941
1971	978	930
1981 (Projection)	979	—

APPENDIX E. DISTRICTWISE SEX RATIO, TAMIL NADU, 1961 and 1971.

(Number of Females per 1000 Males)

District	1961			1971			1981
	Rural	Urban	Total	Rural	Urban	Total	Projection
1. Madras	—	901	901	—	903	903	
2. Chingleput	966	938	960	964	916	947	
3. North Arcot	990	986	989	972	969	971	
4. South Arcot	986	973	984	972	953	969	
5. Dharmapuri	—	—	—	970	952	968	
6. Salem	—	—	—	966	953	963	
7. Coimbatore	981	930	966	974	926	956	
8. Nilgiris	923	902	914	960	927	944	
9. Madurai	1,010	971	998	997	964	986	
10. Tiruchirapalli	1,018	971	1,008	1,000	962	991	
11. Thanjavur	1,019	1,004	1,016	994	993	994	
12. Ramanathapuram	1,066	1,042	1,060	1,053	1,011	1,042	
13. Tirunelveli	1,058	1,040	1,052	1,051	1,022	1,042	
14. Kanyakumari	977	987	979	989	990	972	
Tamil Nadu	1003	963	992	990	951	978	979

APPENDIX F. DENSITY OF POPULATION IN TAMIL NADU DISTRICTS, 1961 and 1971

(Number of Persons per Square Kilometre)

District	1961			1971		
	Rural	Urban	Total	Rural	Urban	Total
1. Madras	—	13,644	13,644	—	19,293	19,293
2. Chingleput	221	1,426	268	261	1,577	367
3. North Arcot	212	2,236	259	247	3,286	306
4. South Arcot	250	1,407	279	291	2,153	332
5. Dharmapuri	—	—	—	160	2,132	174
6. Salem	—	—	—	265	2,265	346
7. Coimbatore	172	1,121	228	191	1,657	279
8. Nilgiris	123	262	161	153	268	194
9. Madurai	180	2,516	255	215	2,872	312
10. Tiruchirapalli	182	1,561	223	215	2,179	269
11. Thanjavur	276	1,972	335	324	2,422	395
12. Ramanathapuram	150	1,702	194	174	1,862	227
13. Tirunelveli	176	1,125	239	203	1,356	280
14. Kanyakumari	517	4,092	596	620	4,779	726
Tamil Nadu	198	1,721	259	231	2,115	317

APPENDIX G. URBANISATION IN TAMIL NADU, 1931 TO 1971.

Year	Number of Towns	Percentage of Urban Population to Total Population
1931	204	17.7
1941	238	19.4
1951	266	23.7
1961	338	26.7
1971	439	30.3

APPENDIX H. DISTRICTWISE LEVEL OF URBANISATION IN TAMIL NADU, 1961 AND 1971

District	1961		1971	
	Number of Towns	Percentage of Urban Population to Total Population	Number of Towns	Percentage of Urban Population to Total Population
1. Madras		100.0	1	100.0
2. Chingleput		20.7	74	34.8
3. North Arcot		20.1	32	20.8
4. South Arcot		12.9	14	14.2
5. Dharmapuri		—	7	8.6
6. Salem		—	43	26.6
7. Coimbatore		29.0	58	35.6
8. Nilgiris		44.0	17	49.2
9. Madurai		31.6	38	33.6
10. Tiruchirapalli		21.2	32	22.3
11. Thanjavur		20.4	32	20.5
12. Ramanathapuram		24.8	34	26.1
13. Tirunelveli		31.1	52	32.2
14. Kanyakumari		15.0	5	20.0
Tamil Nadu	338	26.7	439	30.3

APPENDIX I. PROPORTION OF LITERATE POPULATION TO TOTAL POPULATION IN TAMIL NADU, 1971

(Percentage)

District	Total	Rural	Urban	Male	Female
1. Madras	62.0	—	62.0	70.6	52.5
2. Chingleput	39.7	31.4	55.4	51.8	27.0
3. North Arcot	34.7	29.9	52.8	47.5	21.4
4. South Arcot	31.1	27.3	54.2	44.1	17.8
5. Dharmapuri	22.3	19.7	50.2	31.7	12.7
6. Salem	31.7	25.7	48.4	42.7	20.3
7. Coimbatore	38.9	30.7	53.8	51.3	25.9
8. Nilgiris	47.0	41.3	53.0	58.5	34.9
9. Madurai	41.5	33.5	57.4	55.1	27.8
10. Tiruchirapalli	37.5	31.1	59.9	51.2	23.7
11. Thanjavur	39.6	35.7	54.8	53.1	26.1
12. Ramanathapuram	39.7	34.1	55.5	54.7	25.4
13. Tirunelveli	44.8	40.1	54.8	57.1	33.0
14. Kanyakumari	58.2	56.6	66.1	64.1	52.1
Tamil Nadu	39.5	32.1	56.4	51.8	26.9
Total literates in Tamil Nadu (in lakhs)	162.56	92.31	70.25	107.84	54.72

APPENDIX J. PROPORTION OF WORKING POPULATION TO TOTAL POPULATION IN TAMIL NADU, 1971

(Percentage)

District	Total	Rural	Urban	Male	Female
1. Madras	28.2	—	28.2	49.1	5.1
2. Chingleput	32.0	36.1	29.3	54.5	11.8
3. North Arcot	35.5	37.2	28.9	55.8	14.6
4. South Arcot	34.7	35.9	27.3	57.0	11.7
5. Dharmapuri	36.4	37.1	28.9	58.1	14.0
6. Salem	39.5	41.4	34.3	59.7	18.6
7. Coimbatore	40.8	44.4	34.5	60.3	20.5
8. Nilgiris	38.8	41.0	36.6	50.8	26.1
9. Madurai	36.9	40.4	30.0	55.8	17.7
10. Tiruchirapalli	37.0	39.4	29.0	58.0	15.9
11. Thanjavur	33.4	35.1	26.8	55.5	11.2
12. Ramanathapuram	35.7	37.2	31.4	54.4	17.7
13. Tirunelveli	36.6	39.1	31.3	54.3	19.6
14. Kanyakumari	28.7	29.0	27.1	50.6	6.1
Tamil Nadu	35.8	38.2	30.2	56.0	15.1
Total workers in Tamil Nadu (in lakhs)	147.42	109.73	37.69	116.67	30.75

Summary of Discussion

In the discussion of the paper at the Seminar held in the Seminar room of the Institute on 25th July, 1977, under the Chairmanship of Dr. C. T. Kurien, Professor of Economics, Madras Christian College, the author in presenting the paper, said that he had certain disclaimers to make. First, the prefix Ecology was a sub-theme, the emphasis being the "Demographic Perspective". Second, in regard to the population statistics, the statistical projections were not very definitive after 1984. Such information we have has to be inferred from psychological factors and sociological trends. The total perspective of demographic growth, in the paper, is interpreted from the historian's view of population trends. Of late undue emphasis is being laid on the propagandist approach to population control, overlooking the role of human resources as an asset in the development process, Contemporary discussion of population growth displays generally a pre-occupation with mere statistical analysis, measurement and quantification. Population growth *per se* need not be considered as a problem because, if adequate levels of economic growth precede such increase, such a rise in numbers does not tax the absorptive capacity of the economy. To-date we have mainly concentrated on developing a conceptual basis for population planning. The population census in India does not usually analyse sociological contents and aspects, unlike the U. S. Census which compiles comprehensive data on ethnological composition. Such data would reveal those groups where the birth rate is high owing to socio-religious norms, patterns of economic activity or high rate of infant mortality. An interesting feature is the high population growth in urban areas where social security measures are available. One of the constraints in population computation and derived projections is the lack of reliable data on rural and urban migrations. Despite the limited allocations for health programmes, the results achieved have been comparatively satisfactory. The future need is to work out global population policies and studies in demographic change may be given a new direction with this in mind. Referring to ecological changes that have arisen owing to advance in science and technology and population growth, the author observed that a new ecological pattern has evolved and the means of achieving an equilibrium between man and his environment require careful study.

During the discussion it was observed that the paper has dealt with a wide range of subjects. In a perspective study, one should visualise a scenario which projects population, its urban proportions' age-wise breakup, etc., particularly the employment distribution. A perspective plan should aim at the maximum utilisation of human resources, in terms of numbers and skills, if the economy is to be effectively activated and the tempo of development sustained. The other aspect is the matching of resources and population. A reference was made to the fact that health programmes and policies to date had provided facilities for the sick, but had not fully covered development of programmes for maintenance of community health in terms of nutrition and environmental conditions. This requires an examination of the factors

which are basic to healthy living. On developing these programmes a major constraint is the size of the population. Referring to the necessity for more detailed information in census enumeration—as for example ethnic groups—it was pointed out that the ratio of growth of population among agriculturists in Gujarat seem to be affected in some measure by market prices. The view was expressed that demographic studies in India suffered from an unresolved tension between micro and macro approaches. The core of the problem of the population size management lies in factors like the perceptible drop in mortality rates owing to elimination of malaria by health programmes like spraying, while birth rates are insensitive to policies at micro level. It was pointed that no satisfactory explanations have been advanced for the varying growth rates of population during the last few decades in Tamil Nadu. A Kerala study by the Centre for Development Studies seems to indicate that education, particularly the education of women, is an important factor for generating a response to population policies. An observation was made that the inter-relation between the ecological frame and population growth was not clarified in the paper. Particular attention has to be paid to the study of eco-systems in the rural sector. A query was raised as to the influence of redistribution of income on population growth. In Tamil Nadu it is evident that population is dense in wet districts while relatively sparse population is a characteristic of dry areas. In the main, however, the pattern of population in some developed countries shows paradoxical tendencies, notably Japan with its high educational level and high population and Scandinavia with high income levels and a high birth rate. Evidence and experience seem to point to the fact that a major aspect in population perspective is firmly established health services and nutrition programmes for vulnerable groups.

As a mark of sorrow on the passing away of Miss S. Pothan, one of the founder members, the participants of the Seminar stood in silence for two minutes. And they resolved to convey their heartfelt condolences to her sister Mrs. Elizabeth Adiseshiah.

EDUCATIONAL FINANCING*

PART II

The Financing of Public Educational Expenditure

18. At this point, I return to our starting point, that the major part of educational expenditure is borne by the State. The residual question is the means of financing this large and growing educational expenditures in each of our countries.

19. The sources of financing may be classified as follows:

(a) Allocation from general taxes—central government; local government
(b) Earmarked taxes
(c) Cesses
(d) Loans
(e) Tax relief
(f) Contribution in kind
(g) Foreign aid and international assistance

General Taxes

20. The allocation to education from the revenue derived from general taxes is in all countries the major means of financing education. Here a distinction must be made between countries with a federal structure like Canada, India, Australia and Nigeria and those with a unitary poiltical structure like most of the African and Commonwealth countries. For both groups of countries, a further distinction must be made between central government tax revenues allocated to education and local government tax revenues set apart for education. Taking the federal structures, education particularly at levels below post-secondary education in most of such countries is the responsibility of the constituent states of the federal structure. The problem faced in this situation is that the constituent states have inelastic sources of revenue such as land tax, sales tax, transportation tax, etc. against expanding sources of development expenditures which education, health, social welfare, rural and community development, housing and agriculture represent, while the federal structure has the elastic sources of income such as the income tax, wealth tax, corporotion tax, customs and excise, etc. The result is that education has to be subsidised by the federal centre *vis-a-vis* the states, to the point where the development of education in the states has come to depend on the nature and quantum of the subsidy received from the federal centre. These in turn are determined by a host of criteria, in which the real demands of educational development have a relatively

* Extracts from the second and final part of the Lead Paper presented by Dr. Malcolm S. Adiseshiah to the Seventh Commonwealth Education Conference of Accra, Ghana, at the Commonwealth Secretariat, Marlborough House, London, in March 1977.

minor decisive role. One reform that is needed in federal structures is a long-term (if not constitutional) provision for the sharing of these elastic sources of public revenue, particularly the income tax, corporation tax and the central excise between federal centre and the constituent states which reflects the functions of the two political sectors. Such long-term provisions are necessary because educational outlays are like capital formation. But this sharing cannot be a straight uniform division, because allowance has to be made for the extent of the cultivable land and the school-going age groups which vary between the constituent states on the one hand, and the educational and socio-economic backwardness of some of them on the other hand. I would suggest that 50% of the elastic sources of revenue should be allocated to the states for the first group of considerations and a further 20% pooled for distribution to the educationally and socio-economically undeveloped states.

21. There is also the financing of education through tax revenues by the local government authority, the city corporations, the town municipalities and the village governments. Parallel to the view that educational planning and execution—particularly at the primary school and adult literacy levels—should be as close to the operating level as possible, the financing of these two forms of education—primary and adult literacy—should be the responsibility of local government authorities. In most countries this operation is accepted and the local authorities are made responsible for operating the primary schools and adult literacy programmes. But in fact their financial resources are meagre and there is a general lack of incentive for raising additional revenues. In federal structures, the taxable capacity of the people is almost completely pre-empted by the federal and state authorities and what is left to the local authorities are very small sources of tax revenues, usually additional cesses on taxes levied by the constituent state governments. In unitary structures, local governments have a little more leeway in regard to sources of tax revenue, though even here they are usually the inelastic sources such as house-taxes, professional taxes, tolls, etc. The other feature, that of the local governments' disincentive to raise revenues up to the hilt of what is possible to them, arises from two factors: first being the most direct form of democracy, the elected personnel vie with each other in pledges to keep local taxation down; second the state government's (in the case of federal structures) and the central authority's (in unitary political systems) subsidising of the local government budget which is inescapable, given the meagre tax resources available to the latter, is in effect a call not to make an effort to maximise the incidence of its taxation powers.

22. Some of the general problems in regard to local financing of education just referred to are highlighted and made specific in an investigation that I conducted in one state in a federal structure. It was seen that the educational financing of primary schools for which local village governments in that state were responsible was declining over the last decade, both in absolute and relative terms.

TABLE 7

Unit	1965–66	1968–69	1973–74	1974–75
(1) Percentage of Local government's contribution to total primary education expenditure	20.29	15.75	9.78	9.75
(2) Percentage of education allocation in that budget of the local governments	13.58	12.10	7.88	7.57

(Source: Table compiled by the Directorate of Rural Development, Tamil Nadu, India, 1975.)

The disincentive factor can be seen in the manner in which the subsidising of the educational expenditures of the local governments operates. Each local government received a flat per capita subsidy of a given amount from the State Government. The balance of its educational expenditure was shared between the local government and the state authority in accordance with the degree of development of the area covered by the local governments which for this purpose were classified into six groups, the most developed being in group I and the least developed in group VI. The resulting financial sharing is as follows:

TABLE 8

Group	State Government Share	Local Government Share
I	60	40
II	70	30
III	80	20
IV	85	15
V	90	10
VI	95	5

(Source: Directorate of Rural Development, Tamil Nadu, India, 1975)

The above table shows that local governments' financing of the first level education is extremely tenuous. Even for the most advanced areas, the local governments contribute a minority of total expenses and the system of subsidies is in effect a major disincentive. In this situation, I have recommended (and the state government has accepted) that (a) the flat rate subsidy be abolished, (b) the local governments be allowed to levy an educational surcharge on its people, proceeds to be maintained and operated in a separate account, (c) a per capita ceiling for each student place be established for the entire state to prevent the rampant feather bedding and (d) the state government share be reduced by around 50% for categories I to IV. The moral here is that there are local taxable resources, and fiscal machinery needs to be devised (in a democratic structure) to induce the local governments to raise the normal taxable resources.

23. There are four further comments that need to be made before leaving this first source of educational financing, the revenues allocated to education from general taxes. First, before the question of the inadequacy of the financial resources from this source for education is raised, there should be a technical, management and financial audit of how the existing resources are being deployed in the educational enterprise. This is particularly important with regard to the education sector as compared to the other sectors such as agriculture, manufacture or even health, because in all countries about 90% of educational expenditures are just a continuing commitment from the past 10, 20 or 30 years of expenditures on teachers, salaries, educational administration, repairs of buildings and equipment. If such an examination is carried out, it will be seen that somewhere around 20% of total educational expenditure in the country is "wasted" in various forms of feather bedding in teacher placement, wasteful administrative procedures and personnel, uneconomical buildings, and unused and unusable equipment. As a result of the investigation made with regard to the educational expenditures in the state that I have referred to earlier, the general conclusion on this issue of financial waste was expressed in my letter of transmittal in the following terms:

> "The economical use (of the allocated educational funds) include a more rational and restrained policy of teacher recruitment based on an effective application of recommended teacher:pupil norms, which in turn calls for a realistic method and form of reporting average monthly school attendance. There are also certain infructuous expenditures currently incurred as in regard to financial incentives for study in one's mother tongue, the State carrying the financial burden for the first stage of post-secondary education and for teacher and physical education training, the expenditures on the central kitchens run in their present form, duplicating and overlapping uneconomical higher elementary and unviable high schools, and the State subsidising the wide gap in the fees charged as between the Government and private aided colleges, to which I wish to call your attention. This group of economies is estimated to yield an annual saving of around 20% of the Annual Education Budget.

"The more efficient use of the existing resources recommended which also will meet future growth expansion needs, include launching eight programmes, covering a programme of continuous in-service of teachers, improvement of the school environment, non-formal education for school dropouts and non-attenders (which is also the way to meet future expansions), introduction of work experience in schools, functional literacy to eradicate illiteracy, vocationalisation of the higher secondary course, setting up a full fledged State Council of Education Training and Research and taking over the scholarship programme for the poor till now financed by the Union Government and operating a small talent and merit scholarship programme. This group of essential qualitative reforms is estimated to cost around 10% of the Annual Education Budget, which is about half the level of economies recommended.

"Thus, there is no increase in the State's educational expenditure that is envisaged. The essential qualitative inputs that we have recommended are to be financed from within the existing level of appropriations.

"All this involves two essential preconditions. The performance budget for education must become much more of a control instrument than it is at present. And it must be established after a detailed review and scrutiny of every so called non-Plan as well as Plan scheme."

24. The second problem is that the revenue raised by the existing taxes at the federal, state and local levels—can be considerably increased by improved methods of tax collection, plugging tax loopholes, taking punitive action against tax evasion which is almost a national pastime in all countries. Here again the experience of some Commonwealth countries who have taken action to improve tax collection shows that the result is an increase of 10–12% in the revenue returns. The educational financial allocation do in such cases share in the increased revenues accruing to the State. A third comment relates to the effect of taxation and that part of its proceeds allocated to education on the growth of the economy. Here a distinction must be made between the industrialised countries where the overall tax system with its major reliance on direct taxes is progressive and the developing Commonwealth countries where indirect taxation is the major revenue producing instrument and is in its incidence regressive. The effects on economic growth of the two types of incidence of taxes involve the possibility that for developing countries the regressive tax instrument acts as a brake on growth. In the short run, the tax proceeds allocated to education represent in a sense allocations withheld from agriculture and industrial development and to that extent call for deployment of educational expenditures in a manner which will contribute to growth in the short as well as the long run. In fact a case can be made for either a rather heavy short term diversion of tax revenues to education or a short-term increase in the general tax effort despite its possible depressing effect on growth, if educational expenditures are so planned and deployed as to produce early returns and so speed growth. A fourth and final comment relates to the

effect of the tax effort on distribution—particularly in the developing (Commonwealth) countries with their widespread inequitable distribution profiles. As noted earlier their heavy reliance on indirect taxation means that the sources of financing are worsening the unequal distribution of assets, wealth and living levels. In addition the hidden private costs (including the opportunity costs) of education tend to fall disproportionately on the poor majority of the country. To counter these mal-distribution effects, education should be functional to increasing rapidly the income of the poor families and progression should be an avowed aim of both general and earmarked taxes in these countries.

Earmarked Taxes and Cesses

25. Another means of financing some parts of education is through taxes earmarked for specific educational expenditures. Technical, technological, management and engineering education and workers' education expenses should be met by taxes levied on manufacturing industry and trade, with their revenues earmarked for meeting these forms of education. Similarly a part of expenditures on agricultural education, particularly at the university level and farmers, functional literacy, should be met by earmarked taxes on large and medium sized farms and co-operatives associated with them. There are several alternative bases for the levy of these earmarked taxes. The taxes could be based on the wage bill or the number of workers employed in the firm or farm. This, however, raises the problems of encouraging inappropriate capital intensive techniques in both manufacture and agriculture and of placing a heavier burden on labour intensive units. The taxes could be levied on value added, which however does not form the tax base in most Commonwealth countries and gives rise to computational difficulties of its own. There is then left total sales or profits in the case of manufacturing and commercial units, and net income in the case of large or medium farms and co-operatives. Given the problems raised by taxing turnover in relation to inter-firm relations and inventories, profit or net income seems the most appropriate basis for such earmarked taxes. It may be noted that the case for earmarked taxes is only in relation to those forms of education and training which render or plan to render identifiable service to manufacture, commerce and agriculture: it cannot and should not be used for financing primary, secondary or general university and literacy programme.

26. Cesses are in effect a form of earmarked levies except that they are smaller in scope and the revenues derived are used for even more specific services. Usually a cess is levied as a fraction of some other tax-in urban areas, a cess for financing libraries is usually attached to the urban land or the profession tax, in rural areas the local authority's educational financial resources are often raised by a cess expressed as a percentage of the land tax. For municipalities, corporations and village governments, the cess can be an appropriate source of revenue which, though not elastic and expandable, is suited to the specific nature of recurrent educational costs.

Loans

27. Loans for financing education are a supplementary instrument, supplementary to the major taxation instrument. Loans have not been used generally for finan-

cing education mainly because educational returns are, as earlier pointed out, not separable and quantifiable, and the returns are long term ones, except in regard to professional education and training including functional literacy programmes, whereas the amortization of loans is usually within a 5–7 year period. To start with, the capital expenditure, what is called non-recurring expenditures, for such forms of professional education and training can be financed by loans. Similarly educational building costs can be financed by loans.

28. Loans can have an inflationary impact, they can create balance of payments problems, and in the case of loans used for financing education, there is the further question of choosing between education versus other competing sectors in the use of loan finances. Except in regard to the last issue, the other problems are general ones, not specifically related to educational financing, and must be resolved within a general economic policy framework.

29. Educational loan finance as a resource must be tied in with the tax revenues allocated to education, for while the former provides for building and equipment, these constructions must be timed to coincide with the expenses incurred for teachers salaries, student scholarships and the other ongoing educational amenities that are a part of the educational system. Ideally the bond issues should be launched by the local government authorities, as they are disbursing agents for the capital constructions which the loan finance is to subsidize. But given the problem of the need for a uniform, co-ordinated approach in the undeveloped capital markets of most developing countries, the problem of meeting interest and amortization payments for the loan which the local government does not have the resources to meet, and the need to time non-recurring and recurring expenditures whose major source is the central and/or the state government, educational bond issues have to be centralized either in the matter of actual issue or in their co-ordinated regulation. On this basis, educational bond issues are a source which countries need to tap more widely than is the current practice in educational financing.

30. Thus far, in the discussion, the raising of educational loans has been restricted to the financing of the capital costs of the educational system. The International Development Association credits of the World Bank have, however, introduced a new element in the use of loan finance to meet the capital as well as the recurrent costs of the educational system. Apart from the fact that the division between the two costs is a useful but essentially an accounting device, and should not be taken as a firm basis for financing, the IDA credit which is repayable after a long period of 30–50 years, with a 10 year grace period and no interest charge, enables integrated planning and long-term co-ordinated financing of educational reform programmes — without worrying too much about such questions as to whether the training costs of teachers is capital or recurring, the library cost, similaly, a one shot affair or a continuing cost incurring item and so on.

Tax Relief and Contributions in kind

31. In the area of the private financing of education, there is need in most of our countries for a coherent national policy on income tax, wealth tax and gift tax

relief and concessions for financial contributions made to education. This can be a not inconsiderable source of financing, as the manufacturing sector begins to expand in a country and as legislation is adopted with regard to land ownership and control, urban land size, and ownership of industrial assets, with a view to reducing glaring distributional inequalities in most of our societies. In one Commonwealth country, private contributions made to research are granted 150% tax relief. This suggests that the taxing authority can regulate the flow of private funds into those sectors of education, training and research that constitute its priorities for the present through legislating that contributions made to what it has from time to time established as the priority education sector will be afforded the tax relief. In view of the many ingenious ways in which these concessions are liable to be misused, safeguards should be built into the rules as to the beneficiary agency being separate from the donor and being a real educational agency. One area where tax relief can start is in regard to firms who run workers education or apprenticeship training programme. An other area for such relief is the financing of research and R and D in the universities.

32. At another level, there is the untapped contribution (in labour, local building materials and teaching personnel) that the local community can make to the educational enterprise, which the examples of the successful efforts made in Tanzania highlight. The Tanzanian experience indicates that what is lacking in mobilising this resource is the political will and technical machinery. Given the political will to make the people responsible for their educational facilities (as part of a radical decentralisation of political and socio-economic structures and decision making), what is further needed to call forth massive public contributions is small funds to lubricate the machine, purchase iron or steel rafters and, in some cases where local material is unavailable, to indent for roofing materials. The contributions of the local community is not only in labour and local material, in so far as the reformed educational structures enshrine work experience as an educational activity, the best teacher of arts and crafts could be the local village artisan, the best agricultural or fisheries teacher could be the local progressive farmer or seasoned inland fisherman, the music master may be the village musician. There are thus large possibilities for incorporating in the educational system, contributions in kind from the local communities. I have a suspicion that what is holding up this means of financing education in our countries, is the lack of a political will—such as obtains in China, Cuba and the Communist countries and in Tanzania.

Foreign Aid and International Assistance

33. In all developing countries, the internal sources of financing of their educational system are inadequate to meet the demands imposed by (a) the natural growth of the education system, (b) the increase in emoluments and intakes resulting from the youthful nature of the population and trends in rapid population growth and (c) the reform of the education system. In a sense any foreign assistance to a country whether it be for building irrigation dams or setting up a fertiliser or textile factory or for any other purpose, releases to that extent local resources, a part of which would be used for the financing of education. Hence, the first note that I wish to strike is one of regret at the long stagnation of

foreign aid at 0.34% of the combined national income of the OECD countries (for 1975 it is estimated to have up to 0.36%) as against their pledged 1%.[1]

34. Second the brain drain represents foreign aid in reverse – the developing Commonwealth countries aiding the affluent Commonwealth countries. The extent of the resource transfers involved have been computed by UNCTAD and UNITAR Secretariats and the U. S. Congress Studies. The remedy for the brain drain situation lies with the developing countries, and is basically due to the fact that the quantum of their scientific manpower is ahead of the local economy's absorptive capacity. For some countries, this situation may require a planned short-term programme of migration of its scientists and engineers. Given the brute facts of the brain drain situation and the absence of any simple speedy remedy to counter them, this contribution being made by the developing countries' educational system must be taken into account in decisions on the sources of the financing of their educational system.

35. Third there is a stronger case for educational aid than is commonly recognized. Whether we regard education in a country as investment or a consumption item or as noted earlier a bit of both, it is one of the largest – in terms of scale – industries with a high income elasticity of demand. Aid is needed to meet its capital costs as well as its recurrent costs, without regard to such further divisions as those relating to foreign exchange or import components of its total educational expenditures. Education is one industry which is heavily a public sector industry, depending, as noted earlier, to the extent of 80 to 90% of its financing on the government, which in turn faces an all round fiscal inadequacy in relation to the growing competing claims of its various sectors.

36. Fourth, the time is past when the so called criteria of the absorptive capacity of the country or the lack of teachers and other real resources can be brought up against the need for aiding education. Apart from the vagueness and subjective nature of the concept of the capacity of a country to absorb foreign assistance, it should be remembered that aid to education in a country by increasing the trained manpower needed for expanding and diversifying its agricultural production, its irrigation system, its flood control programme and its manufacturing and capital goods production sector and being the change agent in social structures, tastes. consumer demand, is itself a means of increasing the country's need for foreign aid and a guarantee that it will be used effectively. In other words educational aid is one means of increasing the country's capacity — meaning, need and effective use — to use external aid in other sectors. The period of teacher shortage—even in recently independent African countries—is now past, and some countries face unemployment of their trained teachers. Educational unemployment, up to point, is a signpost of a growing and expanding economy, because education, given its longer gestation period, has to be ahead of the rate of growth of the economy. The moral of the discussion thus far is that a good rule of thumb is that 15-20% of a country's foreign aid should be educational aid.

1. Development Co-operation—1976 Review, OECD, Paris.

37. More viable criteria for allocating this amount of educational aid between countries would be (a) the extent to which the country is making the maximum effort from its own resources to finance its education system, (b) the extent to which the education system is being planned and is tied in with the country's national plan and (c) the extent of the reform and restructuration of the educational system underway.

38. The first criterion — the extent to which the country is making the maximum effort to finance its education system — is not simply indicated by the percentage of GNP devoted to education: for one thing GNP estimates are in some countries a rather crude approximation, and in all countries can be considerably improve; but more serious, the amount of national resources devoted by a country to education depends on its level of development, on the age structure of its population, and the prices and wages prevalent in the country. Taking all these into account, it is possible to arrive at a rough estimate of the national educational effort.

39. The second criterion is more urgent and necessary. Educational assistance must be within the framework of a national educational plan, if the creation of white elephants by power groups within the country or by the external aiding agency is to be avoided. Equally disastrous would be the lopsided development of certain forms or levels of education which has happened when education aid is not within the educational plan. The internal coherence of the educational system should be reflected in the educational plan. And the integration of the education of the educational plan with the national plan with result in many a hard decision, but is the only means of ensuring educational economy and educational and national relevance. Such integration sets the priorities of the educational system.

40. The first two criteria are a prolegomena, a prior setting to aid relations between countries. I would recommend as the major area for educational aid between the Commonwealth countries, educational reform and restructuration that is now underway in each country. The borrowed educational model which served as a good starting point is now being critically re-examined and gradually replaced by an education and training system relevant to the country's political, socio-economic and cultural characteristics, as well as the demands of each of the disciplines. This calls for new structures, new learning content, changed methods of learning and evaluation, a complete re-writing and creation of learning materials, continuous and demanding research and its accompanying costly equipment needs. This is the new area to which I call the attention of the Conference. In the exchange of scholars and teachers, the training through fellowships of teachers and experts and the provision of equipment, the Commonwealth programme of assistance should concentrate on aid to the educational reform programme of each country. And within this major areas of concentration, a new form of assistance that I would recommend to the affluent Commonwealth countries is to finance the exchanges in this area between developing Commonwealth countries. For instance, India's

emerging non-formal education structures can be assisted by experts from Jamaica, Trinidad and Tanzania, Sri Lanka's vocational training experts can help Ghana in its vocationalization programmes and so on. This third country aid programme would involve an affluent Commonwealth country also financing the capital costs-buildings, books, equipment and pilot experimets involved in the reform programme—costs which may be incurred in any of the developing Commonwealth countries.

41. A further aid needed is a commonwealth documentation centre which can collect, analyse and diffuse both basic educational financial statistics with a far greater degree of specificity than is now available from UNESCO, and the educational reform programmes underway in the countries. The Centre will make available not plans and ideas (of which we probably have more than what can be practised), but the actual profiles of educational finance and educational reform in the Commonwealth countries.

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