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EDITORIAL—SOME HIGHLIGHTS

I General Economic Scene

State :

Flood Relief and Prices :

December witnessed a well orchestrated relief and rehabilitation programme of people and lands devastated by the November floods. By the beginning of December, the government assessment was Rs. 155 crores damage to public and private property, 557 persons dead, 199 missing, 4.05 lakh houses damaged for which Rs. 2.48 crores were disbursed as grants, with Thanjavur receiving the major part, Rs. 1.70 crores. 6,450 km of the national and state highways and 1,200 km of panchayat roads, 18 major bridges, 667 culverts and 72 minor birdges are being repaired. 3,818 tanks out of 16,400 with an ayacut of less than 100 acres which had been breached are being set right. It is reported that the river systems and channels battered out of shape by the cyclone will be restored in full by March this year after making them immediately serviceable. The Union government decided in early December to grant the State Rs. 33.91 crores as advance plan assistance for relief and rehabilitation work (and granted Rs. 75.13 crores to Andhra Pradesh for similar work). The Tamil Nadu aid comprises :- Rs. 2.60 crores for food-grains, Rs. 5.04 crores for irrigation, Rs. 5 crores for roads, Rs. 7.50 crores for government buildings, Rs. 50 lahhs for panchayat buildings, Rs. 30 lakhs for ports, Rs. 3 crores for State Electricity Board, Rs. 1.25 crores for local bodies, Rs. 75 lakhs for fishermen, Rs. 50 lakhs for weavers, Rs. 5.34 crores for agriculture, Rs. 25 lakhs for medical and health care, Rs.1.22 crores for aided schools and colleges, Rs. 4.40 crores for reconstruction of rails, Rs. 2 crores for short term loans and Rs. 24 lakhs for the drainage board. The government estimated that the relief and rehabilitation work that it is undertaking would amount to Rs. 128.6 crores comprising: gratuitous relief Rs. 4.98 crores, restoration of public property Rs. 67.85 crores, aid to huts and houses Rs. 25 crores, to agriculturalists Rs. 9.88 crores, to fishermen Rs. 1.35 crores, to weavers Rs. one crore, to co-operative credit institutions Rs. 8 crores, loss of revenue and loan dues and compensation to local bodies Rs. 10 crores. In addition, the Chief Minister's Flood Relief Fund amounted to Rs. 2.5 crores by the end of December. The Union government also announced studying the feasibility of a "garland scheme" of irrigation costing Rs. 15,000 crores to save the country from floods and provide irrigation to all parts of the country, making available electricity to the villages and creating large employment opportunities. From December 1, the State government brought within the purview of the Essential Articles Control and Requisition Act five items of building material for reconstructing the huts destroyed by the floods—cocoanut thatches, casuarina and bamboo poles and coir ropes, so that their prices were not raised and their easy availability ensured. It constituted in early December a 3 member enquiry committee to investigate the causes of the breaches to the Kodaganar Dam in Vedachandur taluk, the means of restructuring the dam and the ways of avoiding such tragic occurrences in future. The government has also started construction of a chain of community centres to act as emergency havens against cyclones and floods along with wirless and microwave sets at vulnerable points all along the coast from Mandapam to Madras against future natural calamities. The Community centres will accommodate 500 to 1000 people and act as dormitories with water and power supplies. Also inflatable boats are being acquired and maintained in areas prone to cyclone and floods. The government has asked the Union government to set up a technical team to prepare a comprehensive programme of coastal management, including using various types of equipment needed for a more accurate forecasting of cyclonic storms and planning steps to mitigate the havoc. The equipment suggested includes USEB RATTS equipment, Pulses Dipped Radar, Automatic Meteorological Data Acquisition system and HF static trans receivers and mobile trans receivers. The Union government on its side has exempted from excise and customs duty all relief supplies for cyclone victims in the southern states, along with instruction to the customs to clear speedily the gifts from abroad—particularly food, medicine, clothing and blankets. On the price front, December witnessed a steep rise in the price of vegetables due to the damage to the vegetable crop from rains, cyclone and floods. Cabbage which normally is exported from this State to Delhi has had to be imported from Nagpur, green chillies from Gujarat, tomatoes normally exported from Dindigul and vegetables from Ooty are all in short supply. As a consequence vegetable prices increased during the month by 75 to 100 per cent, with wide margins as between wholesale and retail prices. The State government attempted various measures to contain this price rise: using consumer co-operatives to sell vegetables at lower prices through procuring them and other essential articles directly from production centres and distributing them through co-operatives, making available edible oil, fire wood, kerosene and sugar at controlled prices and in the case of sugar by making arrangements for the sale of non-levy sugar at Rs. 3.80 per kg., distributing it to all cardholders at a uniform rate of 425 grammes per head per month to all in urban and rural areas. Meanwhile the wholesale market at *Kotwalchavadi* is being transferred to the 300 acres establishment located at Koyambedu which is being set up at a cost of Rs. 10 crores. MMDA and traders are working together to shift 2,500 wholesale traders to Koyambedu and more than 2 lakh work places, constituting 48 per cent of all work places in Madras city which are being transferred to the modern wholesale market site which is served by the Poonamallee High

Road and the inner ring road, along with 55 acres bus and truck terminals to serve both traders and customers. There is also a problem faced by the farmers who are not receiving a higher procurement price for their paddy, in view of the Union government's ban on payment of the bonus of Rs. 15 per quintal proposed by the State government. This has become a subject of agitation by farmers in the State. The supply of foodgrains has been improved through the Union Government's save grain movement (see Vol VII p. 291,376) which has encouraged farmers to adopt and use a package of policies involving use of improved storage bins, insecticides and other aids to improved post harvest practices. CSO's price index for July 1977 shows an increase of 4 points from 300 to 304, the main rise being by that amount in ood and prices in the State. Rural prices for July remained stagnant at 324 for food and 303 for general prices. The inter-city prices for June showed Madras at 304, with Tiruchy closely following it at 299 and Madurai at 286. The effect of the flood and cyclone on these prices will be seen in the reports for November and December.

Power :

As noted in the last issue (Vol VII p3), the losses from the November cyclone and floods suffered by the Tamil Nadu Electricity Board are estimated at Rs. 4 crores but by mid December all the 5,400 damaged transformers and electric poles were repaired. The power situation in December in the State was satisfactory, so that attention was turned to reducing the line losses which were 18.8 per cent in 1971-72, 20.20 per cent in 1972-73, 21.08 per cent in 1973-74, 21.45 per cent in 1974-75 and then began declining to 18.88 per cent in 1975-76 and 18.34 per cent in 1976-77. The State has a transmission network of 71,616 kms of EHT/HT lines and 2,16,517 KM of LT lines distributed over all villages and hamlets serving 32 lakh consumers including 7.90 lakhs agricultural pumpsets. The Board has started action to reduce losses by adding to the T and D net work under the Rs. 110 crores master plan to add 150 sub stations and 3,833 KM of EHT/HT lines. This year's outlay is Rs. 28.5 crores, up from Rs. 3 crores in 1973-74. Of this Rs. 28.5 crores, Rs. 6.60 crores are being spent up on improvements to HT and LT distributions to reduce over loading lines and inspection services have been intensified to bring down losses due to tampering with meters and theft of energy. Agricultural loads which contribute to high peak load conditions, have been staggered into 2 batches, one batch getting 8 hours in the morning, the other in the evening and both being supplied in the night. As a result, the daily load factor of the grid has been improved to 80-85 per cent. In view of the improvement in ground water resources in the State following the rains and floods, the Board is giving power connection to an additional 50,000 pumpsets involving an investment of Rs. 25 crores. This will provide assured irrigation to an additional 2 lakh acres. The Board is also to set up a 400 MW power station at Kadamparai in Coimbatore district, based on pumped water storage at a cost of Rs. 73.5 crores. The project is the first of its kind in the country with pumped water to storage tanks, using surplus power at night, to be used later for power generation. Preliminary work on the first two units is now under way and the civil works on the next 2 units will be taken up—at a total first phase cost of Rs. 54 crores. The State Planning Commission has developed a Sixth Plan high priority power programme to increase power availability in the State by 2,000 MW at a cost of Rs. 700 crores. The major part will be from the thermal schemes—Tuticorin, Mettur, Neyveli, Kadampari and several other lignite and coal based schemes as well as hydro-electric schemes in the Nilgiris. The government plans to implement this programme on a war footing —which will meet the power needs of Union public sector undertakings and attract entrepreneurs into the State—which will be supplemented by the large availability of cheap, intelligent and skilled labour.

In the country as a whole,11 States and Union territories faced power shortage due to inadequate generating capacity and delay in completion of projects. Harayana had a 25 per cent cut, Rajasthan 5-10 per cent, Uttar Pradesh from 33 to 50 per cent (with effects of retarding industrial production, the recovery of mini steel plants and dimming the rabi crops prospects), Goa 25-40 per cent, Madhya Pradesh 10-25 per cent, Maharashtra 10-25 per cent, Karnataka 10-55 per cent, West Bengal 15 per cent and Assam 10-25 per cent cut. In Gujarat, staggering of the weekly holiday and recess hours in industries were introduced. The Durgapur steel plant has had to reduce its production of hot metals and of its finishing mills due to the 50 per cent reduction in the power supply from DVC. The Union ministry reports that the total commissioning of power this year will be 2,400 MW against the target of 2,600 MW. The strategy for power development in the immediate future is to achieve self-sufficiency during the next 5 to 7 years, involving obtaining additional 10,300 MW capacity from ongoing projects. Projects totalling 6,700 MW have been sanctioned recently and projects for about 6,000 MW are being considered for early sanction. One of the unresolved questions under discussion between the ministry and the Planning Commission is with regard to switching over to 500 MW thermal sets. The ministry's plan for achieving the target of 17,000 MW of thermal power involves use of 500 MW sets, in place of the current 200 MW while the Planning Commission has questions about the suitability of this switchover. The advantage of the larger set's lower cost due to lower construction and civil works (which in the case of the 200 MW sets will call for putting up 80 units per year) may be counteracted by the complexities in running the large sets on which there is no national experience and international experience is limited only to one country —West Germany. Any programme to instal 500 MW should be on a limited and very selective basis in order to accumulate some experience on which judgements can be made.

Communications :

The Madras Earth Station for experimental satellite communication is expected to be ready now in February. The Station which is one of three, planned for the national network of telecommunication, television and radio broadcast is located at Meenambedu and will use the Franco-German satellite — Symphonie over the next 2 years after which India will launch her own satellite. The station will make remote places accessible to communication, will ensure a national hook up and would be impervious to weather conditions.

Housing :

MMDA's World Bank aided Madras Urban Development Project started in

April 1977 has begun work on 20 out of the 84 slums to be improved in 3 years. Work on 10 other slums was carried over into this year because of the delays imposed by rains and floods, including the hold up in the Corporation's repairing and laying of road works. The programme also involves work by the slum dwellers, for which MMDA is using the services of voluntary agencies. Also the Pallavan Transport Corporation's programme to acquire 285 additional buses is now under execution and the first 100 bus shelters are being completed. The All India Builders Convention held in mid December in Madras expressed the importance of making innovations in designs, efficient management and conserving materials as a means of evolving popular housing and giving unemployed engineers building work and contracts.

Urban Land Ceiling and Sales Tax :

In December, the Union government announced guidelines for exemption of agricultural land and land designed for commercial use under the Urban Land Ceiling Act. The guidelines for permitting a person to retain excess land for building houses for the weaker sections of society were announced in late December as well as the exemption of agricultural lands from the purview of the Act. The State government has extended the deadline for filing returns under the Act and announced that it will be introducing legislation to remove the restrictive features of the Act as far as the building industry is concerned. The government also set up in December a 5 member committee with the former first member of the Revenue Board as Chairman, to examine the sales tax laws and regulations and to recommend changes for reducing hardships to assesses, improve collections and eliminate corruption. The Committee will make a detailed review of the procedures laid down under the ST Act about registering dealers, demanding security and recommend measures for simplification and streamlining of the provisions.

Tourism :

The Annual All India Tourist Trade Fair in December in Madras was the National Handloom Expo-78 where the best handloom products from all over the country was displayed, along with sound and light programme on important tourist spots in the State plus displays by private and public sector undertakings and the Departments of State and Central government. The government on the occasion also announced that it has under study a plan to set up a permanent tourist exhibition in every district to educate the people on the State's culture and its modern achievements. In the long run this may be further extended to establish a permanent exhibition in every taluk. To start with, the funds allotted to this programme which stands at Rs. 40 lakhs need to be considerably increased. Haryana with 1/40th this State's population spends 1.5 crores on tourism. The internal and external benefits of the development of tourism need to be expressed in such an enhanced allocation.

National :

Sixth Plan :

Preparations for the Sixth Plan were under way in December. The guidelines sent to the States give the highest priority to irrigation and power, the phased starting of new projects and the employment potential of each. In preparing the 1978-83 five year plan, the targets and projections are to be worked out for the additional year at the end of each year. Alongside, the 15 year Perspective Plan is to be developed combining the quantitative and planning policy framework for rural development, educational planning and planning for employment and improved standards of living for the poorest section of the population. Agricultural growth is to be planned around expanded Irrigation and improved extension facilities to achieve output target of adequate growth through price stability and income distribution. Feasible cropping patterns and the development of other rural sectors such as animal husbandry are to be outlined. Rural poor are to be organised for the effective implementation of land reforms to ensure their participation in the reform. The unionisation of the rural poor is to be provided for improving their income position, with the State apparatus being given the lead role and adequate funds for this purpose. The relationship of rural development projects with industry and infrastructural investment are to be stressed in the demand for fertilisers, tube wells, rural electrification, non-commercial sources of energy, rural roads—all to be analysed under alternative assumptions. The science and technology sector is also to be oriented to rural development, supporting khadi and village industries, agriculture, housing, energy and natural ressources intensification together with establising a firm linkage between heavy industry and rural development. Technologies will be selectively developed and in some cases imported for this purpose with emphasis on adaptation and absorption of the latter for local purposes. Improvements in standards of living will involve relating them to consumption elasticities and a *priori* estimation of the minimum needs of the vulnerable sectors. The employment effects of agricultural development, scale, technology and the sectoral composition of investment are being worked but along with area planning. A consistency 89 sectors framework of output growth, a 9 sectors investment allocation model and their employment effects are being used, assuming different target growth rates and establishing the investment requirement for the Plan. The final growth rate will be chosen on the basis of making it consistent available domestic savings plus net foreign aid. Also cost comparisons between the big and small sectors in areas of production are being worked out in order to decide how far large industries should be limited and small ones developed in these areas. Central and State monitoring and project evaluation organisations are being set up or strengthened to meet the demands of the Sixth (rolling) Plan together with a data bank and a new computer system at Yojana Bhavan. On the basis of present exercises, it is likely that the private sector's share in the Sixth Plan will be smaller than the 42 per cent (Rs. 27,048 crores) allotted to it in the Fifth Plan. It looks as if in the Sixth Plan it will be of the order of 32 per cent, as a consequence of the greater emphasis on agriculture and the directive that medium and heavy industries generate more of their own resources for their further growth.

Prices and Anti-Inflation:

The Index number of wholesale prices for November showed a marginal rise of 0.1 per cent for the month, ending the month at 184.2 compared to 184.1 at October end. During November, the price of pulses rose sharply by 8.1 per cent followed by oil seeds at 5.3 per cent, jute, hemp and mesta textiles at 3.6 per cent and fibres and •il seeds at 1.8 and

1.7 per cent. On the other hand sugar registered a fall of 3.7 per cent and paper products 0.2 per cent. The others showed no movement or small rises. Thus November on the whole continued the price decline/stabilisation registered in October reported in the last issue. The *Economic Time's* retail price index for Greater Bombay shows a sharp rise for November by 1.3 per cent. Food prices rose by 2.6 per cent, with steep rises in pulses (12.6 per cent) vegetables and fruits (10 3 per cent) and oils and fats (3.3 per cent). On the other hand tobacco prices fell by 3.7 per cent, clothing by 2.3 per cent and meat, fish and eggs by 1 per cent. Against this background, the anti-inflation measures have slowed down. The question of government intervention in the edible oil area is under consideration including that of dealing with the restriction on inter-State movement on oil seeds and edible oils which prevail in the Southern States. Pulses is another product requiring special attention in view of its soaring prices referred to earlier. Also the maximum prices of recognised varieties and grades of raw jute for sale and purchase in various up country markets were fixed early December by the Jute Commission. The new rates were Calcutta prices minus transport, handling and other costs. RBI also decided in early December that further bank credit will not be available to industrial units defaulting in their provident fund payments. RBI also pointed out that the rate of money supply expansion till the beginning of November 1977 was 0.3 per cent lower than that during the 12 month period ending November 1976. But later, money supply has been liberalised so that as at November 18, 1977 the supply increase was 9 per cent against the 10.5 per cent increase in the corresponding period in 1976, due mainly to the increase in net foreign exchange; assets of the banking sector and increased net bank credit to the government. The expansion of bank credit to the commercial sector as at November 18, 1975 was lower at 5.7 per cent against the previous year's 12.9 per cent. The new Governor is also decentralising to the banks procedures of control and inspection, calling for strengthening of these procedures within each bank. Further RBI is encouraging banks to draw within its fold of beneficiaries and active agents, the poorest strata and most remote and backward regions to ensure that growth is both sustained and equally shared. To this end RBI has opened an additional window for refinance of bank advances to small farmers and the small sectors. On the side of price increases, the price freeze on aluminium expires in 1977 and an increase in non-levy price of commercial grade aluminium will take place from 1978. Also from December 16, 1977 the price of fuel oil for Indian coastal shipping companies has been increased, though the prices of HSD and LDO have been lowered as a compensation to these companies. On the basis or the recommendation of the consumer price index committee concerning the introduction of a new series involving the discontinuation of the publication of the existing series with 1960 as a base a new series of consumer prices index with 1971 as the base will be started from January 1978. This is an important event, as it will affect many of the decisions of banks, industry, commerce, trade unions and governments.

Central Loans :

The Union Finance Ministry on December 7 announced further loans of 3 loans to a total of Rs. 175 crores to be raised by RBI for being made available to investors at prices to be notified from time to time. These loans are to be used to replenish the holdings of medium and long dated security of the RBI so as to cater to the requirements of provident funds and institutional investors.

Industrial Policy :

The Union government announced its industrial policy on December 23 in the Lok Sabha whice involves effective promotion of cottage and small industries widely dispersed in rural areas and small towns. Whatever can be produced by small and cottage industries will be so produced and to ensure this the number of items reserved to the small scale sector is increased from 180 to 504. Special attention is to be given to the tiny sector, that is those units with investment in machinery and equipment of upto Rs. 1 lakh and situated in towns with less than 50,000 people and villages. Margin money will be provided to these tiny sector units. Special legislation is tin be introduced for promoting the interests of cottage and household industries, which provide self-employment and which will become a part of the industrialisation programmes. In each district there will be established a District Industries Centre which under one roof will provide all the services and support required by small and village entrepreneurs, including investigation of the district's raw materials and other resources, supply them with mechinery, equipment and raw materials, credit, quality control and marketing. IDBI will set up a separate wing to meet credit needs of the small sector and will co-ordinate, guide and monitor the entire range of credit facilities offered by all institutions to the small and tiny sectors.

There will be an annual review of reserved industries to ensure that the reservation for the small scale sector is efficiently used, really applied and continually expanded. New industrial licenses are not to be issued for cities with more than 10 lakh population and urban areas of more than 5 lakh population. The public sector will continue to have an expanding role as a producer of important and strategic items of a basic nature and as a stabilising force for maintaining essential supplies for the consumer. It will widen its ancillary units and make available its technology and management to small scale and cottage industry sectors. To promote technological self-reliance, there will be import of technology in sophisticated areas and such technologies will be purchased outright and adapted to the country's needs, which will involve the firms importing technology developing also their own adequate R and D facilities. FERA is to be strictly enforced and the resulting 40 per cent foreign holdings will enable the firms to be treated like Indian companies. Foreign investments will be subject to government approval and control and where permitted there will be complete freecom, for remittance of profits, royalties etc. Exports of manufactures are to be encouraged and export based manufacturing proposals will be given favourable cousideration. Government intervention in the case of sick units both in the small and large sectors will be, as in the past, selective. Some curbs are to be introduced on the expansion of large houses and they are expected, as noted earlier, to generate their own finance for their growth. This statement is aimed at the double objective of generating employment and dispersal of industrial units. As a supplement to the well tried industrial policy resolution of 1956 on which it builds it is good. There is however a little too much reliance on market forces and what it calls basic demand which is not in consonance with its objective of industrial expansion and self-reliance. Further the precise role of heavy industry and that of the public and private sectors in regard to large manufacturing units have yet to be worked out, together with the need to correct the past slowdown in their investment under the new policy. For that, it will not be possible to rely soley or even largely on their generating their own resources internally. There will have to be a determined effort to increase the public share in their investment.

Industry and Public Sector Performance:

The economy is not doing well from the point of view of industrial growth. Money supply is likely to increase in the balance of the year and government deficit likely to be enlarged. Industrial growth for the period April-August 1977 was a low 4.7 per cent compared to 13.1 per cent during April-August 1976. The main declines were in cement, power, textiles and steel, due to inadequate capacity use and the official emphasis on agriculture and irrigation and small and cottage industries. One lacuna which CSO should correct is the absence of an aggregated as well as detailed statement of investments in the private sector as a result of which there are varying views as to whether or not private sector investments have risen or fallen this year. The RBI Governor in his review of the economy states that despite the fall in industrial growth rate, the economy this year will have a 5 per cent growth (compared to last year's less than 2 per cent), due mainly to the bumper kharif harvest and the expected good rabi crop. The public sector units report diminishing or empty order book positions. One of the worst hit in this regard is MAMC, the biggest manufacturer of mining and materials handling equipment in the country, which has received cancellation and suspension of orders and deferment of deliveries by its aid grant. Out of Coal India's order of Rs. 20 crores for equipment, Rs. 12 crores have been suspended and the balance will be executed by March, after which there will be no work. Also the Rs. 40 crores orders for ore handling facilities from Paradeep, Vizag, Madras and Goa have been executed and the Corporation faces idle capacity. Export prospects are not very bright and in any case the public sector in this vast country is not established merely to export its products. This non-utilisation of capacity of the public sector has multiple effects on employment via ancillaries and subsidiaries. To revive and use fully the public sector plants, what is needed is an accelerated programme of investment in ports, ships, steel production, fertilisers etc., as noted earlier and emphasised in previous issues of the Bulletin. It is in this regard of accelerated investment in heavy industry that the industrial policy statement referred to in the previous section, through its silence and indirect references to its being of lower priority is weak. There is some evidence that the government is beginning to realise this important truth and is facing the problem of finding resources for stepping up the rate of investment in this sector. A further push in this direction is its decision to aim at a growth of 7 per cent, which is double the average growth rate of the past 30 years. For this additional investment, resources will have to be found from some further taxation, particularly of the agricultural sector and some increase in deficit financing and a more purposeful use of its foreign reserves.

Indirect Tax Panel :

The Jha Committee on Indirect Taxation has presented its final report for the *rationalisation of the duty structure and* for lowering the cost of production as a whole as a means of moving towards VAT at the manufacturing stage. It has recommended lowering import duties on inputs and machinery in view of our large and growing foreign exchange reserves, reducing the inter-state sales tax from its ceiling of 4 per cent to 1 per cent, moving over to a single tax in the long run in regard to sales taxes by the States and totally abolishing octrois. The Committee has proposed rationalising the duty structure on products needed *for fulfilling economic priorities,* rationalising taxes on raw materials to lower the economy's cost structure relieving input taxation and moving over to a system of Value Aided Taxation (VAT). It recommends that VAT be introduced to start with in three or four industries producing final products such as automobiles and diesel engines which suffer from the ill-effects of cascading taxes, and this pilot attempt be evaluated before extending the system further. It specifically recommends the exclusion of petroleum products, tobacco and its products, sugar, coffee, tea and matches from VAT which yielded in 1976-77 Rs. 2,081 crores, which was 46.4 per cent of the total excise revenue not only to avoid reducing the government's revenue receipts but also to avoid the administrative burden of operating the new VAT system. This will give the government the time to test the procedures and the reactions of tax payers to VAT before extending it further. Whether this partial introduction and operation of VAT is feasible needs further examination. The government has the *report under study and will have to make* decisions in time for the budget and to ensure the raising of additional resources for investment as well as spurring the growth of the economy.

National Production Front:

Steel :

The Union minister of steel reports (somewhat optimistically) that steel production for this year may reach 10 *million* tonnes. Production of steel ingots in the integrated steel plants was 5.6 million tonnes in the first eight months April-November 1977, which was 2 lakh tonnes more than during the same period in 1976. SAIL which is being reorganised (see Vol VIII p 9) will have a loss of Rs. 1 crore. The earlier decision breaking up HSL into 3 independent companies *and setting up the new* companies cost Rs. 1 crore in registration fees. But this decision has again been changed and it is now decided to have 1 company—SAIL which will have 3 Vice-Chairmen. This means that the Rs. 1 crore spent on breaking up SAIL into three separate companies is now wasted. As against the production expansion to 15 million tonnes being *planned* for 1982-83, SAIL reports improved domestic demand for steel and the clearing of accumulated steel goods in the stock-yards. From a monthly stock position of 1.8 million tonnes in December 1976, steel stocks have come down to 1.3 million tonnes in November 1977. Goods that were available off the shelf now *require a* short waiting period. SAIL however feels confident that it can meet fully the growing steel demand. There are parts of steel goods such as rounds and bars where both demand and prices are still low. These items are being exported despite the sluggish export market for steel. Also more mills like Bhilai, should switch over from rounds and bars production to flats and plates for which there is a growing demand. Also the supply of cold rolled sheets to the mills is being increased from 30,000 tonnes a month to 40,000 tonnes. In order to diversify production and ensure further use of capacity which now averages 60 per cent, the steel tube units have asked SAIL to ensure that steel in API and ASIM specifications is regularly supplied from indigenous plants. This will enable overseas markets to be more regularly supplied and overcome the shortage of steel in API and ASTM specifications.

Crude :

ONGC reports the production of 5.78 million tonnes in 1976, comprising 4.18 million tonnes from the Western region, 1.16 million tonnes from Assam and 0.39 million tonnes from Bombay High. By the end of March 1977, 1,374 wells were drilled, of which 735 were oil bearing, 89 indicated the presence of gas, 29 were water injection wells and 363 dry. For this year, Prakla Seismos, a West German firm, is being engaged for a detailed seismic oil exploration survey in the Godavari and Kerala offshore area over a total of 6,000 sq. kilometres. The survey is expected to be completed in 2 months at the end of which exploratory drilling in the two offshore basins will start. Prakla Seismos will also do offshore seismic survey for OIL in the Mahanadi offshore basin. Bombay offshore High now yielding at the rate of 4 million tonnes a year will reach 10 million tonnes in the next few years. On the import side, for 1978, contracts for importing 13.1 million tonnes (against a demand for 13.5 million tonnes) have been finalised. Saudi Arabia has been requested to provide 2.5 million tonnes and as at the beginning of December had agreed to provide 1.1 million tonnes. If the balance is not supplied by Saudi Arabia, the government will call upon Exxon to supply 1.48 million tonnes which under the agreement it will have to. Iran is to supply 2 million tonnes, Iraq 3 million tonnos, USSR 1.5 million tonnes, Abu Dhabi 1 million tonnes and 0.5 million tonnes will be available as India's share of the Rostum crude from Iran. The Madras refinery will receive an additional 2.6 million tonnes from Iran's NIOC. On the international price front, OPEC has decided to freeze oil prices from January 1978 for six months at the current level of $ 12.70 per barrel. This was the result of the ministers' meeting at Venezuela held at the end of December and it means that for the first half of 1978 at least there will be no additional outgo on account of crude import. The Soviet Union in its turn has agreed to supply its share of 1.5 million tonnes to India at the lowest posted price instead of the average price in the Gulf which was the price paid hitherto. This is an important concession from the Soviet Union. The refinery of BHC in Bombay is implementing a Rs. 8 crore modification programme to make the changes to process the 2 million Bombay High crude it will receive in 1978-79 on completion of the submarine pipeline from the Bombay offshore oil fields to Uran in New Bombay. The first stage of handling 2 million tonnes annually is complete, the second stage costing Rs. 2

crores will enable it to handle 3 to 4 million tonnes and the third stage costing Rs. 3 crores will integrate BPC and HPC operations. The Oil Prices Committee headed by the Deputy Governor of the Reserve Bank has in its final report recommended that with the entire oil industry coming into the public sector, *IOC need not have the predominant and* growing position it now has in the marketing of petroleum and petroleum products as BHC, HPC and AOC which are also now public sector units should be allowed to increase their market *shares. IOC's present share of 61 per* cent of the market should be gradually reduced to 55 per cent. The Committee has also recommended a fourth oil berth at Bombay, the super tanker oil jetty at Cochin, the oil berth at Vizag and an oil co-ordination committee for deciding on crude allocations and monthly production patterns, an increase in the price of naphtha by Rs. 100 per tonne, reduction in the excise on fuel oil, a Rs. 100 per kilolitre rise in aviation fuel and fixing coastal bunker fuel price at the same level as land prices. The government has accepted the recommendations and is acting on them. Negotiations for the takeover of Oil India between the government and BOC are almost complete. The issue to be settled is the compensation to be paid to BOC for its 50 per cent of the shares and it seems likely that the final amount agreed to will be between Rs. 25 to Rs. 30 crores. With that, the entire oil industry will be in the public sector.

Coal and Zinc :

Plans are being finalised for increasing the production of coal to meet the increasing demand of thermal plants and the expansion programmes for paper and cement. In addition, each colliery would have to keep one month's production as buffer stock. GSI reports discovery of a large reserve of coal suitable for power generation at Rajmahal hills. 440 million tonnes have been identified in the Hura coal field, another 982 million tonnes in the Chuparbita coal field. The coal is *inferior in quality but makes possible* establishment of power stations on the Ganga in Bihar and West Bengal, as this type of coal is in current use for power generation. Thus this coal discovery is related to the increasing power demands *of the country and will be one major* means of meeting it. The production of zinc has increased with the commissioning of the HZL's Russian smelter at Vizag in January with its capacity to produce 30,000 tonnes of high grade electrolytic zinc and 10,000 tonnes of lead per annum. The HZL will market 50,000 tonnes of zinc in 1978-79, meeting 50 per cent of the country's requirements. The Debir smelter at Udaipur where capacity was increased from 18,000 tonnes to 45,000 tonnes in February 1977, produced 22,000 tonnes in 1977-78 and will produce 30,000 in 1978-79. The Vizag smelter will make available 12,000 tonnes of ingots in 1977-78 and 20,000 tonnes in the following years. Thus total zinc production in 1978-79 will be 50,000 tonnes and along with the Tundoo smelter of Bihar, lead production will amount to 16,000 tonnes in 1978-79.

Iron ore :

Iron ore stocks in the country have accumulated to 4.5 million tonnes, and so private sector investment on the ore mines has stopped. With the continuing slump in the export market, MMTC has not been able to help the mine owners. In fact the export target for iron ore for this year has been scaled down from 21 million tonnes to 14.3 million tonnes. This stopping of investment in the iron ore mining sector is serious, because this is the fourth year running since the investment stoppage in 1974–75. Of the total 1976 production of 43.75 million tonnes —over 50 per cent—23.21 million tonnes—was in the private sector. There is need for helping investment in this sector as otherwise its unscientific functioning will be further accentuated.

Cement :

The corporate sector produces 80 per cent of total cement in the country, 18 big manufacturers accounting for 90 per cent of all cement production. The private sector produced in 1976 14.55 million tonnes. The new cement policy being developed by the government is aimed at giving a major role to the public sector. Private sector units will be allowed to expand their capacities and build up dispersed cement grindling facilities in the country. The new policy envisages an annual growth of 7 per cent, the creation of an additional capacity of 6 million tonnes for our investment of Rs. 300 crores to avoid serious future shortages and the establishment of large plants of 2,000 tonnes per day and mini cement plants. The cement Research Institute of India (CRI) has found 43 sites which are suitable for the mini cement plants and 12 sites have been taken up by CRI for techno-economic feasibility studies. The 43 sites have been chosen on the basis of various parameters such as availability of raw materials (there are 94 small limestone deposits in the country) as well as a infrastructural facilities, labour, markets, and accessibility. As far as technology is concerned, it is running a 20 tonne a day plan with vertical shaft kiln processes at its centre and Tamil Nadu has plans to use this technology in other mini centres when they came up.

Edible Oils, Sugar and Cotton :

The Union government has decided to import 10–12 lakh tonnes of edible oils to hold the price line down. Half of the imports will be through STC and the free licensing for imports of edible oils is to be extended beyond March 31, 1978. In this regard the government has proposed to the trade that a consortium of importers be formed to arrange and regulate the imports to avoid competition in the international oil market among Indian importers. Beside enabling imports on fair terms, such a consortium could also ensure a continuous inflow of oil throughout the year. The Indian Oil Producers and Exporters Association has accepted these responsibilities. The government also announced in late December in the Rajya Sabha that the CBI investigation into the alleged malpractices over the Rs. 500 crores of edible oil licenses issued in February 1977 has resulted in exonerating the importers from any violation (see Vol VII p. 369). For the future it has been stipulated that private traders who are issued import licenses will have to import the oil within 3 months of the issue of the license. On the sugar front, with Iran's refusal of 1.2 lakh tonnes of sugar exports and EEC not being able to lift its contracted 25,000 tonnes this year (see Vol VIII p. 15), the government has released in December 50,000 tonnes of sugar from stocks held by STC to bring down the price of sugar and relieve the large 1.13 lakh tonnes stocks of STC. The State governments have agreed to ensure uniform distribution of levy sugar in rural and urban areas and it is on this basis that the dual pricing policy is being continued. Total production for the year is expected to be 52 lakh tonnes (against last year's 48 lakh tonnes) and internal consumption is expected to be 37 lakh tonnes, so that the carryover to next year will be larger than the 15 lakh tonnes from last year. With regard to cotton, the Cotton Advisory Board estimates a cotton gap of 6.65 lakh bales for the year September 1977 to August 1978. The total supply is estimated at 82.10 lakh bales. The total consumption is estimated at 71 lakh bales, including 2 lakh bales to the decentralised sector. This leaves a carryover of 11.10 lakh bales against the needed one of 17.5 lakh bales, which is a 3 month consumption. The Board has recommended against the export of cotton and has implied that imports which had been suspended from October should be resumed. The cotton crop is placed at 66.25 lakh bales against the earlier estimate of 70 lakh bales.

Roads :

A national plan for road development and the road transport industry is in the making. Its importance is that 50 per cent of passenger traffic, 30 per cent of freight traffic and 60 per cent of export cargo are moved over our roads. Goods traffic has doubled in the last 5 years to 110 billion tonne km from 65 billion tonne km in 1973-74. 10 million persons are employed on roads. On the other hand, 90 per cent of trucks and lorries are owned and operated by single owners and the same percentage of passenger transport is under State control. The needs in this area are in the section of maintenance and laying of roads, which are costly. The poor roads lead to a national loss of Rs. 800 crores. In terms of employment, road development has a multiplier effect. Rs. 1 crore spent on road building will employ 11,870 persons and its use will give employment to another 4,100 persons. The Union government is planning to increase the allocation to roads and the Planning Commission is giving it priority because of its employment effect and multiplier consequence for trade. All national highways are being converted into dual lane highways (28,000 km) and new routes are being designed in areas and districts not now covered by the system.

Fertilisers :

The total consumption of fertilisers this year is expected to increase by 26.3 per cent compared to last year's 17.9 per cent. MMTC which has a stock of 18 lakh tonnes of urea is importing Rs. 450 crores worth of fertilisers to meet the growing demand for fertilisers. With the expansion of Nangal and the commissioning of Panipat and Bhatinda and the better performance of existing units, the gap between availability and demand has diminished and will close up further. *The gap this year is* 10 *lakh* tonnes and for next year will be 4.5 lakh tonnes. In phosphatic fertilisers, there will be a surplus of 33,000 tonnes next year against this year's shortage. This year, against a capacity of 3.5 million tonnes of nitrogen, 2.14 million tonnes will be produced and the consumption will be 3 million tonnes. In phosphatic fertilisers the capacity is 1.3 million tonnes and production 7.1 lakh tonnes and the consumption is expected to be 8.76 lakh tonnes. Kharif fertiliser consumption this year rose sharply to 1.5 million tonnes (30 per cent increase), and rabi consumption is also up. FAI estimates a total consumption of 3.9 million tonnes this year—revising its estimate *of nitrogen* consumption from

25 lakh tonnes to 27 lakh tonnes, phosphates from 6.79 lakh to 7.56 lakh tonnes and potash from 4.03 lakh to 4.32 lakh tonnes. This means the buffer stock will be depleted and MMTC will have to import more fertilisers.

Agricultural Production :

The year's foodgrains target of 118 million tonnes will be attained. Rice production is to be expected to be between 73 to 74 million tonnes, despite the loss of 1.5 million tonnes due to the Andhra Pradesh and Tamil Nadu cyclones and floods. Punjab and Haryana report record arrivals of rice in the markets at 3,210,771 tonnes and 1,24,745 tonnes compared to last year's 2,182,016 and 878,922 tonnes respectively. FCI bought all it could, as did private millers. Incidentally the new kharif policy which has helped both producers and consumers, has resulted in higher prices for the farmer's paddy and lower prices for the consumer's rice. This is attributed by the government to the removal of all inter-State obstacles and restrictions to the movement of paddy and rice. Paddy prices in December 1977 were Rs. 80-87 per quintal in Uttar Pradesh against Rs. 70-75 in 1976 December. They are higher also in Haryana, Punjab and Andhra Pradesh. But market prices of rice are lower notably In Bihar, Karnataka, West Bengal, Kerala, Punjab, Maharashtra etc. Procurement of rice at December 1977 at 15.45 lakh tonnes was 25 per cent higher than the 12.5 lakh tonnes in December 1976. The government is also planning to close the gap in rice production as between scientific institutions and the farms. Rice production in Bihar, Orissa, West Bengal, Uttar Pradesh and Madhya Pradesh which together account for 65 per cent of the rice output and of the country is to be the subject of a special campaign to increase their production yields. In the case of low lying areas in these states, a new package is to be introduced involving high yielding varieties tolerant to water logging and flooding, improved material and management practices, and better post harvest technology. Pilot projects using this technology are to be taken up in areas of 1,000 hectares and 2,000 hectares with the full involvement of the farmers of the area. These projects also will be extended to other crops in those areas. As far as rabi prospects are concerned, the government estimates are that they are good and a record harvest of wheat, gram, rape seed and mustard is expected. The area where wheat is sown is higher by 1 million hectares compared to last year's 19 million hectares. With extensive sowing, increase in fertilisers offtake by 30 per cent, and good showers at the right time—December end—in Punjab and Haryana, as well as the cyclone and rains in Andhra Pradesh snd Tamil Nadu also having provided abundant water for the summer and rabi crop, there is reason for the optimism and for the expectation that the rabi crop in the Southern States may even compensate for the loss they suffered during the kharif harvest. The forecast is that the rabi output will be about 49 million tonnes. Thus there are ample stocks of foodgrains. The good rabi harvest will pose storage problems. FCI will have to complete its plans for additional storage space before the rabi harvest, if the rates of loss from poor storage and in fact from post harvest grain losses are not to increase further. The Union government announced in early December the exemption of mini tractors upto 12 HP from the excise duty of 15 per cent. This is part of the government programme to reduce the cost of agricultural inputs for the farmers. In December the Union government rushed pesticides, fertilisers, HYV seeds and other agricultural inputs to the cyclone affected areas in East and West Godavari and Krishna districts to help resumption of agricultural operations. Particular attention is being paid to land preparation and making up the loss of cattle and cattle fodder. The application of zinc sulphate and super phosphate helped in a fast rate of decomposition of stables. The crop being so raised will also help in sainity control of the affected land. The RBI's survey on saving and investment shows that aggregate capital expenditure in agriculture, non-farm business and residential housing of small households amounts to Rs. 1,822 crores in 1971-72, reflecting an increase of 74 per cent over 1961-62. Expenditure on durable household assets increased from Rs. 47 crores to Rs. 61 crores (240 per cent increase); total fixed capital formation in farm and non-farm business and residential housing registered an increase of 107 per cent from Rs. 349 crores to Rs. 721 crores. Farm business accounted for 50 per cent of total fixed capital formation. In farms alone fixed capital formation increased from Rs. 167 crores to Rs. 356 crores. Purchase of agricultural implements and machinery was the major item of capital formation and increased from 28 per cent to 43 per cent. The trends in agricultural capital formation are thus all positive.

Exports :

Exports for the first six months, April-September, amounted to Rs. 2,584.06 crores, an increase of Rs. 225 crores (10.9 per cent over the level reached in April-September 1976. The export target for the year 1977-78, is Rs. 5,750 crores, which is 11.8 per cent over the previous year's performance and is likely to be attained as exports pick up fast in the second half of the year. This is of special interest because world trade which grew at 11 per cent in 1976 has begun to decline to 5-7 per cent in 1977. If oil exports are excluded, real growth in world trade was a mere 4 per cent. Also exports have increased for India despite the export of mass consumption items—sugar, vegetable oils, oil cakes, fresh vegetables, fruits and critical materials like cement—being banned or cut back. And the exports have expanded despite protectionist developments in the industrialised countries. As a result of the protectionist trend, India's handloom exports fell by Rs. 40 crores in the first 6 months and iron ore exports fell even more sharply as noted earlier. Engineering exports increased by 18 per cent, as also chemicals, handicrafts, gems and jewellery which did well. Tea and coffee exports earned substantial increase. In regard to imports, these were Rs. 2,415 crores during this period April-September 1977, slightly lower than the Rs. 2,420 crores in April-September 1976. In 1976 while foodgrains imports were Rs. 202 crores, in 1977 it was fertilisers and edible oil imports which increased. The government has announced that there will be liberalisation of the import of industrial raw materials. In fact there must be a large hike in imports leading to a trade deficit if the mounting foreign reserves are to be turned into an investment resource. As at October, foreign remittances amounted to 1,505 crores compared to 1,240 crores in October 1976. Among the good exports performers, mango exports crossed the Rs. 10 crore mark for 1976-77, UK accounting for 70 per cent of the export from India. Indian jute and coir goods will have an unrestricted duty free entry into EEC from January 1,1978. under two sectoral agreements signed by India with the EEC commission in early December 1977. Exports of jute to EEC totalled Rs. 21.68 crores, and those of coir and coir-products Rs. 13.24 crores. The jute agreement also provides for carryover and anticipated utilisation of quota and their transfer between various categories to make the terms of the accord more flexible. The trade with USSR recorded a surplus of Rs. 100 crores in favour of India, for the first time in the bilateral accord and negotiations are now under way to increase imports from the Soviet Union in accordance with the agreement to increase the trade by Rs. 100 crores over that of last year. In 1978 Indo-Soviet trade turnover will amount to Rs. 1,056 crores, due to the crude imports. Jute exports are likely this year to all countries. In the first 8 months, April to November orders for four lakh tonnes have been received, the principal buyers being the US and USSR. Hungary is expanding its imports from India in textiles, leather and garments and in return will collaborate with India in manufacture of buses and specially articulated coaches. Despite sluggishness in the coal and iron ore export market, during the first 8 months, April-October, MMTC has recorded a turnover of Rs. 42 crores and a total export earning of Rs. 130.61 crores between April and the first week of December. Iron ore exports increased from 7.5 to 8.5 million tonnes and the earning from Rs. 96.63 crores to Rs. 111.17 crores this year. Manganese ore export fell from 3.7 lakh tonnes to 1.8 lakh tonnes and earning from Rs. 9.44 crores to Rs. 4.21 crores. Coal also declined from 3.32 lakh tonnes to 3.18 lakh tonnes. The Indo-Czechoslovak trade agreement signed in December provides for a total trade turnover of Rs. 175 crores in 1978, compared to Rs. 95 crores in 1977. Also the pact signed with Bulgaria in December provides for a turnover of Rs. 113 crores for 1978. The trade agreement with Poland involving an annual trade of Rs. 200 crores is to be switched over to free convertible currencies from January 1, 1978. India and Roumania also signed a trade agreement for a 10 per cent increase in their trade of over Rs. 145 crores for 1977. In general, the government has decided to end rupee trade and switch over to free currency in a phased manner as a means of increasing economic co-operation and meeting the changing requirements of the countries concerned. Rupee trade has been ended with Yugoslavia, Sweden, Egypt and Bangla Desh, from 1978 January with Hungary, and from January 1981 with Poland. With Afghanistan, Bulgaria, Roumania, GRD and Czechoslovakia the switchover will take place over the next 4 or 5 years. Only with the Soviet Union which has given India large credits, the switchover will take longer. As India's import requirements have changed over the years, there has been a continuing shortfall of 30 to 50 per cent in the trade with most East European countries, as imports from those countries have declined, resulting in a trade surplus for India. Also these countries have been reluctant to supply India with vital raw materials and machinery, as they could get better prices and earn hard currency from other countries. As a result there will be increased trade with these countries with the switchover to free currencies. India's import policy is being reviewed by the Committee set up by the Union government (see Vol VIII p. 14). Of the total value of import licenses issued up to mid December amounting to Rs. 12,000 crores, only Rs. 3,000 crores (25 per cent) have been utilised. Those who secure licenses hold them awaiting a price fall abroad, or an improvement in the quantum of industrial demand within the country. One way is to increase the validation period of the licenses beyond the present one year period, and to have a single list of restricted items as far as inputs are concerned instead of the present system of multiple lists of banned goods. Another remedy is to reduce the number of importers and also decrease the number of items which are at present canalised. (In the case of exports, as noted earlier, the government has decided that export targets of all canalised items like sugar, cement, readymade garments shellac etc. should be reduced to make available larger quantities for the domestic market). In addition to increasing the period for the use of the import licenses and simplification of procedures, further liberalisation of capital goods imports along with incentives to investment shy industries are under consideration by the Committee. The incentives would be fiscal concessions for investment in recession hit industries and in those where fresh investment is not forthcoming. There is also study of a phased shift from import controls to tariff mechanism. Also the import of industrial raw materials is being further liberalised to provide inputs for accelerated industrial growth. It is good that the reshaping of export-import policy is to be accompanied by other measures to spur investment and industrial growth—which is one of the main aims of foreign trade. In connection with our exports, the strictures of the Public Accounts Committee of the Lok Sabha on the grant of massive cash assistance of Rs. 11.52 crores for export of manmade fabrics during the six years 1968-69 to 1973-74 termed as "irrational and unwarranted" apply also to the subsidies being granted to exports in general and need overall review and examination. Export subsidies are one way of perpetuating our high cost industrial structure.

Aid :

In December, IDA announced two loans to India. One was for $ 87 million to improve and rehabilitate Calcutta's water supply, sewerage and sanitation facilities, and the other $ 8 million for reorganising and strengthening agricultural extension services and to upgrade and develop adaptive research to increase foodgrains production in Bihar. EEC also announced in December two grants to India—$ 7.22 million to the Central Warehousing Corporation for a foodgrains storage and fertiliser project and $ 6.19 million to increase by 25,000 tonnes capacity the grain storages in a number of villages in the State. A general problem faced by the government in the use of aid only Rs. 450 crores of foreign aid has been used, against the Rs 1,976 crores in the pipeline plus the Rs. 2,000 crores pledged for the year by the Aid India Consortium. Out of this total of Rs. 4,000 crores, only a little over a tenth is in use. This *means that savings have to be stepped up* to provide the rupee resources for these high priority projects and some deficit financing may be unavoidable to generate further rupee resources.

International :

Bangla Desh :

The first meeting of the Indo-Bangla Desh committee for implementation of the Farakka agreement met in December from the 11th to 29th. As a result of its technical work, the Ganga Water would flow from Farakka from January 1 to May 31 to the two countries in the proportions laid down in the agreement. Bangla Desh has proposed that India, Nepal and Bangla Desh should join together in a study of the projects for utilising the tributaries of the Ganga which originate in Nepal. This is a long term project which may also involve China, if all Himalayan waters and rivers are to be considered. Bangla Desh jute was selling at a premium of $ 40 to $ 45 over the minimum registration price. The Bangla Desh government introduced in December the system of prior sanction to keep itself posted with international enquiries for raw jute. This would enable it to restrict the sale of goods which are in short supply and which are needed by its domestic industry.

International Aid and World Debt :

ECM approved soft loans of $ 385 million to 36 countries through IDA, as its share of the $ one billion special action agreed at the IECC, Paris last year (see Vol VII p. 635). 23 of the countries are from Africa and 12 from Asia, as well as from Haiti. UNCTAD announced that the world's non-oil exporting countries have debts totalling $ 200 billion. Sweden has proposed that some 10 per cent ($ 20 billion) of this burden should be written off by the rich countries on behalf of the poorest countries.

UNCTAD and GATT :

The UNCTAD secretariat has once more appealed to the industralised countries to set negotiations moving by April so that an International Fund to stabilise leading world commodity markets can come into being. There is need for the countries to agree on the basic issues—to allow the Fund to be used flexibly to promote development and stabilised prices (see Vol VIII p. 17). At GATT, the world's leading textile exporting and importing countries reached agreement by mid December to extend the 1973 International Textiles Trade Treaty which expired on December 31, 1977 (see Vol VII p 510) for another 4 years period during which period it will yield an annual 6 per cent return. The annual session attended by 83 States through its Chairman warned the nations responsible for 4/5 of the world's commerce against their growing protectionism. The restrictions on foreign imports to safeguard troubled home markets can disrupt world trade, he pointed out.

OPEC :

OPEC at the end of 1977 had made foreign investments of $ 200 billion. Its external debt amounts to $ 50 billion and external assets $ 185 billion. In the year 1977 its current account surplus, that is trade balance plus net investment income, amounts to $ 35 billion and will in all probability decline in 1978 to $ 28 billion.

Food aid Fund :

The U. N. Food Aid Fund of $ 1000 million came into operation in mid December. It plans to use the food in the coming 3 years for the food deficit countries to help them expand their foodgrain production. India will be aided by the Fund to build or expand fertiliser plants, and augment its storage capacity for its food buffer stocks. As part of an international grains agreement, an international foodgrains reserve is to be established by July.

World Food :

Though world wheat harvest estimates for 1977 have declined to 722 million bushels from the previous year's output of 866.7 million bushels, and with a smaller world cereal crop in 1977, FAO estimates that cereal supplies in 1978 will be sufficient to meet rising world demand and maintain a world buffer stock at 1977 levels. The 1977 world cereal crops will amount to 1,342 million metric tonnes, which is 1.2 per cent below the 1976 output. The 1977 output comprises a minus 8 per cent in the wheat crop as noted earlier, due to less favourable weather in the wheat producing countries, plus one per cent in coarse grain and a 4 per cent rise in rice production. The major development in 1977 was USSR's cereal and pulse production totalling 194 million tonnes, which was 30 million tonnes less than production in 1976. While the wheat output in Australia and Argentina declined, that in US and Canada increased. FAO also forecasts that world rice trade in 1978 may amount to the high 1977 levels of 8.7 million tonnes, due to increased imports from SE Asian countries—Indonesia, Malaysia, Laos and Vietnam, despite good rains and large crops in South Asia. FAO's international commission completed plans at the end of November for a multi-million dollar campaign on post harvest food losses in the Third World with a view to cutting food losses by 50 per cent through fighting against poor food storage, insufficient processing and marketing systems and ravages as insects, other pests and dampness. These problems are to be attacked at the local farm and village level, using simple techniques and the skills and abilities of local people. The campaign will at the start cost $ 10 million and will be raised later to $ 20 million.

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II Agricultural Development

Farming after Cyclone and Floods :

To compensate the damage and loss suffered by the farmers in the Thanjavur and Tiruchirapalli districts, Mettur water which normally ends in January is being made available till the end of March to help in growing a thaladi crop. The fact that Mettur is full and overflowing, (in the first week of December it was still receiving a daily inflow of 9,000 cusecs and was discharging 10,000 cusecs) also facilitated this decision concerning a late thaladi crop in the 2 districts over some 3.5 lakh acres. So too 50,000 acres are being used in

South Arcot and Salem districts to grow summer crops, and to help all those farmers who have suffered from the cyclone and floods, the government is supplying free seeds, manures, fertilisers and other inputs by the end of December. In the Coimbatore district where hybrid cholam, hybrid cumbu, HYV cholam—all at the harvest stage which have been affected by the continuous rains (the district received 600.5 mm in place of the normal 253.22 mm) spoiling the grain and lowering its fodder value, and so too, far the late sown groundnut where the pod formation and maturity have been affected and most seriously the cotton crop where extensive squares and boll shedding are noticed throughout the district, a series of remedial measures and alternative cropping actions are under way. These include: (a) retrieving the partially damaged crop of cotton, (b) sowing alternative crops where the previous ones are completely destroyed, (c) increasing HYV paddy and millets during the ensuing navarai season and (d) resowing the area under groundnut and pulses. On the cotton crop, the Coimbatore district co-operative Central Bank and the Coimbatore Development Bank are offering farmers a loan of Rs. 500 per acre for reviving the cotton crop. With all tanks, wells and reservoirs full, about 2 lakh acres are coming under HYV paddy for the navarai season, 25,000 acres under irrigated groundnut, 25,000 acres under KM–1 and KM–2 hybrid cumbu, 30,000 acres under CSH-5 kovilpatti tall hybrid cholam, ganga and maize and 25,000 acres under 0–7, Co–10 and PR 202 ragi. Also the area under pulses—152 cow pea, T–9 black gram and Co–1 Bengal gram—is being expanded, with the required seeds, fertilisers and pesticides being moved to the villages and the banks instructed to extend liberal loans and credit to the farmers in these revival projects.

Research Results :

The moderate use of pesticides in the cotton growing areas of Coimbatore and their replacement by the use of parasites and pathogens is being urged as a result of both national and international research. The loss suffered from pests by cotton farmers is more than of others, hence the temptation to use more and stronger doses of pesticides, to which the pests develop resistance and immunity and in turn the farmer uses even more virulent applications of insecticides, which is not only costly but results in ecological imbalances, environmental pollution, spoiling of the soil and results in a fall in production. Besides shifting to biological control of the pests, the Coimbatore farmers are also advised on crop rotation, that is raising alternative crops and not to concentrate only on cotton to control the further growth of pests. A rather important research demonstration was the Agri Expo 77. The results of farming with its varied technological inputs, specialisation in crops and animal husbandry were well demonstrated in the composite farming practices that were demonstrated. It was also one more effort to close the gap between increasing specialisation of farm research and the poor small farmers who also are the majority and the extent to which they can adopt *integrated farm practices*. The Expo was useful in highlighting the means of forging market links for the farmers and close relations between agriculture and industry. The machinery on exhibition was of interest to large farmers and showed two gaps: first there were not enough single instruments with improved versions that are in use by the small farmer: second there is not enough creativity and development of indigenous tractors, reapers, threshers etc. suited to our conditions in different parts of the country. Research in use of green manure in paddy fields shows that the use of widely growing *Ipomeaca Cornes* gives a higher paddy yield than an application of ammonium. The former contains nitrogen and its use at the rate of five tonnes per hectare yields more than double that a chemical fertiliser yields at a five to ten times the rupee investment involved. Research has also thrown further light on the crops that can be and should not be grown along with sugarcane. On the one side, maize, jawar and mustard should not be grown along with sugarcane, as the yield of both is affected. In this State potato can be grown as a companion crop as it boosts the cane yield, also green gram and bendai can be grown as spring planted crops and late ratoons, and in South Arcot, groundnut, blackgram, ragi and coriander crops as companion crops to sugarcane are recommended.

Animal Husbandry :

An animal husbandry plan for the State has been drafted at a conference in December of the officers concerned involving: (a) a massive programme starting 5 more intensive cattle development projects and 200 key village blocks which will cover the State, (b) provision of regulatedmarkets for cattle sale in selected centres, (c) enlarging the use of frozen semen, (d) production of vaccine for control of rinderpest, (e) the formation of a veterinary public health wing with a veterinarian, the establishment of poultry strains in and around major cities, (g) establishing a duck farm as a pilot project in East Thanjavur district, (h) establishing a separate wing of Extension and Publicity in the Animal Husbandry Department, (i) starting production schemes for increasing green and dry fodder and (j) forming an animal husbandry research council. Australia made available in December a gift of 110 Jersey heifers and 2 bullocks with supplies of frozen semen and artificial insemination equipment. The animals have been lodged in Eachenkottai in the Exotic Cattle Breeding Farm in Thanjavur district which will have a stock of 250 animals. The State government has developed a Rs. 35 crore sheep development project to be operated in sheep farms in Chinnakalrayan Hills and Chinnaselam and has submitted the scheme to the Union government for approval and financing. The project will organise sheep farmers, improve extension services for sheep rearing, and improve the quality of sheep with exotic meat breeds. The special characteristic of the project is the delivery of all goods at villages, and the integrated rural development of small and village sheep based industries. With the help of the Union ministry, 7 disease free zones are being established in the State —free from rinderpest and foot and mouth disease—at a cost of Rs. 41 crores. Also a dog breeding farm at Kattupakkam and a horse breeding farm at Hosur are also being set up. In the State 4 district projects has been sanctioned by the Union government (out of 68 projects for the country as a whole) under which 3,000 families of small and marginal farmers and agricultural labourers are chosen in each district and assistance given for setting up poultry units of 50 or 100 birds. Out of a capital investment of Rs. 2,350 per unit, the small farmers will get a subsidy of 25 per cent, and the marginal farmers and agricultural labourers 33 1/3 per cent, the balance being medium term loans from banks. Technical inputs and service are being made available to the families in a package form and project officers are providing 2 weeks practical training in poultry keeping at the nearest government poultry farm or demonstration centre in the scientific rearing of birds. They will ensure supplies of good quality balanced poultry feed, adequate marketing facilities linking feed delivery on credit and collection of eggs which will ensure loan recovery, together with extension services and the provision of health cover. On this basis, some 12 more projects will be started in the Sixth Plan.

Fishing :

The State government is supplying through co-operatives catamarans, boats and nets to fishermen who lost their means of livelihood in the cyclone and floods in Madras, Thanjavur, Pudukottai, Chingleput and South Arcot districts at a cost of Rs. 1.32 crores. The aid is on the basis of 50 per cent subsidy and 50 per cent interest free loan. Further to promote the development of fishing by both those using catamarans and mechanised boats, the government has asked the Director of Fisheries to indicate the 3 mile limit from the shore through floating buoys within which mechanised boats will be prohibited from fishing. The buoys are being floated along the coast between Ennore and Covelong and the seaway Corridor leading to this limit from the fishing harbour of Kasimode.

Tea :

As noted in the last issue (p. 20) with the increased production for the year estimated at 570 million tonnes and falling domestic and international prices, the tea industry is concerned with the two restrictions imposed by the government. The first is the ceiling on exports at 225 million kg., compared to last year's export of 240 million kg. out of a total production of 512 million kg. The other is the export duty of Rs. 5 per kg. Both those are aimed at increasing availability of tea in the domestic market and at reasonable prices. Now with the increased production for this year, there is a question whether there should be this ceiling on exports. Apart from the doubt as to whether the domestic market can absorb the increased supply, Indian tea is doing so well on the export market, that this is the time to expand its sale and capture new markets. Between April and October 1977, tea exports amounted to 126.2 million kg. earning Rs. 334 crores, whereas in 1976-77 242.41 million kg. were exported, earning Rs. 295.26 crores. At the present rate, a further 100 million kg. will be exported and will earn more than Rs. 200 crores. This means that tea will emerge this year as the top foreign exchange earner at over Rs. 550 crores. This is the moment therefore to raise the ceiling on exports, and parallelly the trade should take steps to meet the complaints of the foreign buyer about the falling quality of Indian tea, the slippage in shipment schedules and inferior packaging standards. On the price front, the government has set up an export committee to review the question of the London auction of tea from the point of ways and means of securing a better price as well as avoiding any underhand or black market transactions. There are 111 sterling tea companies in the country and all of them have submitted proposals for their indianisation. The steady decline in tea prices together with the increased production of tea by all countries, India, Sri Lanka and East Africa has made urgent a meeting of producers to aim at stabilising prices. The World Tea Production Organisation which was to come into being this year, 1978, has not yet been formed. Hence the Conference of World Tea Producers and Consumers convened by UNCTAD in Geneva from January 4–14 will evolve a formula of regulation acceptable to all major producing and consuming countries, including East Africa which until now has opposed joining in an effort to regulate international tea prices and which is attending the Geneva meeting as it sees the need for such international action.

Coffee :

As recorded in the last issue (p. 21), coffee production has been steadily increasing. from 83000, tonnes in 1975-76, 1.02 lakh tonnes in 1976–77 and 1.1 lakh tonnes in 1977–78. There are adequate stocks to meet internal demand and keep down domestic prices. Exports are expected to earn Rs. 170 crores, which is higher than the forecast in the last issue. The Coffee Board announced completion of a survey of growing coffee in Maharashtra as part of the plan to develop coffee production in non-traditional areas and of doubling production by the end of the century. The Planning Commission and the Union government have sanctioned a Rs. 10 crore scheme to provide finance for small coffee growers in Tamil Nadu, Kerala and Karnataka. Under the scheme small growers with less than 25 acres are being given credit facilities for replanting and varietal improvement. At the international level, the International Coffee Agreement countries are continuing to consult each other about evolving a suitable mechanism to ensure support and remunerative prices to growers. Brazil the largest producer has stated that it wants the international price raised from 180 cents in the agreement and 188 cents in the market per lb to $ 2.10–$ 2.20 per lb. This will have to be negotiated and the quotas agreed upon to make the suggested price come into being.

Rubber :

Rubber stocks at the end of November amounted to 52,000 tonnes and while the prices in Malaysia was over Rs. 700 per quintal, the Indian price was Rs. 585 per quintal. Rubber growers are urging the government to allow an export of 10,000 tonnes and entrust the trade (and not STC) with the export operation, both to reduce the increasing inventory and keep the domestic price from falling further. STC had not been able to prevent the price falling below the notified level and hence the trade should be given more of a role, it claims. It forecasts a shortfall of 3,000 tonnes on production and of 4,000 tonnes in consumption by the end of the year and so an increase in the surplus stocks is reported as at November.

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III Industrial Development :

Neyveli :

The Union ministry of energy announced in mid December that the second mine cut of NLC which will step up lignite production by a further 4.7 million tonnes per annum and the thermal power station with an additional power generation capacity of 600 MW—have both been cleared by the Public Investments Board. It must now be approved by Union Cabinet, after which official action will start. The total cost of the 2 projects is Rs. 360 crores—Rs. 145 crores for the mine cut and Rs. 215 crores for the power station. The foreign exchange component is around Rs. 100 crores, mainly for the mine cut. The 600 MW equipment as three 200 MW sets will be fabricated by BHEL. The 2 projects will be completed within 2 years, with West German aid for the mine cut. It will be noted that the Planning Commission has backed the projects fully, unlike in earlier years (see Vol IV p 210) when it constituted the main obstacle to their realisation. This is due to the higher priority given by the new government to power and its realisation that the real solution to the problem of the power famine in the South is this project and the super thermal station in Andhra Pradesh. The lignite output from the second mine cut is for the exclusive use of power generation unlike the first mine cut which shared its product between power and fertiliser production.

Industries :

The State government is setting up a permanent commission comprising representatives of industries, technical institutions and the government to study problems of industries in the State and recommend means of solving their difficulties. For the quarter ending October 1977, in the State, 4 public companies with a total authorised capital of Rs. 225 lakhs, 36 private companies with a total authorised capital of Rs. 168.74 lakhs and a guarantee company were registered. Of these, 3 companies were large scale, each having an authorised capital of Rs. 50 lakhs and above. One company with a paid up capital of 1.51 lakhs went into liquidation and one with a paid up capital of Rs. 90,000 was struck off under section 560 of the Companies Act. About 2,164 prosecution cases were pending at the beginning of the quarter in July 1977, 79 new cases were launched and 90 cases were disposed of. A total fine of Rs. 17,575 was imposed in the cases resulting in convictions. Compared to other States this record of the working of the companies in the State is not unsatisfactactory.

Textiles :

The National Textiles Corporation is diversifying its activities. As a first step it has started the production of hosiery in 3 out of its 14 mills in the State. It is also producing blended yarns. To contribute to employment generation, NTC has stabilised the handloom sector and started yarn depots in weavers' centres at Kadayanallur, Madurai, Salem and Erode and will be starting one in Coimbatore. In December, the Union government authorised the Tamil Nadu Textile Corporation to take over the management of Somasundaram super spinning mills which had remained closed for 3 months.

Growth Centres :

A survey sponsored by the Inter-Institutional Group led by SIPCOT and conducted by the Tata Economic Consultancy Services has identified four districts—Madurai, Tiruchirapalli, Tirunelveli and Salem—for locating growth centres with regional dispersal in the State. These four districts, it is pointed out, have an industrial base from which there could be further industrial growth and development. 350 industries have been identified as suitable for establishment in the State in large, medium and small industries sectors. The concentration of industries in Madras, Coimbatore, Madurai and Tiruchirapalli and the industrial neglect of Dharmapuri, North and South Arcot, Thanjavur, Ramanathapuram and Kanyakumari are a form of regional imbalance which should be corrected. Power shortages and strained industrial relations are further bottlenecks to industrial development. And so diversification and rapid and balanced industrial growth in the neglected areas, starting with the 4 districts which have been identified are proposed as a corrective. The growth centre concept proposed is that of an urban centre capable of growth with a rural hinterland, which it serves, providing employment through the industries established at the centre.

HPF :

The Hindustan Photo Films organised at the end of December a discussion with consumers, the representatives of the film industry, and a review of the quality shortage and price of its films. As a result it announced a reduction of Rs. 34 per roll in the selling price of Gewa colour films and its decision to maintain a buffer stock of 10,000 colour rolls.

TIIC and Indian Bank :

TIIC announced in December a scheme for providing financial aid on concessional terms and conditions to industrial units by the cyclone and floods in order that they may repair the damage to plant machinery, electrical fittings and buildings. The concessions include a lower interest rate at 9.5 per cent and extended period of repayment. To expedite grant of such aid, the managing director is authorised to sanction loans upto Rs. 1 lakh on the merits of each case. In the case of the units which have suffered losses and which are debtors, TIIC is granting time for repayment of the loans and rescheduling the payment of the principal. Indian Steel Rolling Mills, Nagapattinam, which suffered extensive damage has been granted Rs. 5 lakhs to repair its motor, machinery, steel structure and necessary works. The Indian Bank on its side has developed a credit plan for Dharmapuri district under which Rs. 76.21 crores will be disbursed between 1977-78 to 1981-82. Rs. 48.56 crores will be provided as crop loans, Rs. 1.46 crores for land development programmes and Rs. 1.20 crores for minor irrigation. The Plan will finance the purchase of 7,550 million animals, 2.22 lakh sheep, 30,000 poultry birds, 2,500 plough bullocks, 25,000 ploughs, 500 sprayers and assist calf rearing schemes covering 3,000 calves. Rs. 34 lakhs will be used for supporting 1,000 gobar gas plants. This programme followed a study by the Bank of various parametres of the district such as occupational pattern, sources of irrigation, spread of small and village industries, size of holdings, area under each crop and work of commercial and co-operative banks. Rs. 9.16 crores will be provided as additional working capital to 895 small units, Rs. 2,04 crores to be industrial units based in the rural areas, and Rs. 53.5 lakh to finance 17,500 handlooms and 200 power looms. The plan will also finance 600 single transport operators, 6,800 professional and self-employed persons and 425 retail traders. As a result, there will be a net additional income generated in the district of Rs. 14.98 crores from the end of the fifth year of the plan.

Black Granite and Pulp Plant :

The State government announced that from December 7 the black granite industry will be nationalised and from that date no lease will be granted to a private person for quarrying black granite. The State government will itself be engaged in quarrying black granite and will grant any leases for its quarrying to any corporation wholly owned by the State. The second phase of the pulp plant expansion of South India Viscose at a cost of Rs. 7.5 crores was inaugurated from December end. With this expansion, the output of the factory has increased from 60 tonnes per day to 100 tonnes, saving the country a considerable sum in foreign exchange. The third stage of expansion which should be completed by the end of this year will be the manufacture of polynosic fibres at a cost of Rs. 11 crores. These fibres are a substitute for long staple cotton which is imported by the country at present.

Handloom :

Handloom exports from the State are estimated at Rs. 45 crores for the current year. Orders from US, UK and France were expanding and a new order for Rs. 1 crore was received in December from Australia. The government has also a scheme for unemployed graduates to set up handloom retail shops, under which graduates who could raise Rs. 10,000 individually or in groups of 5 to open a shop will be given handloom textiles manufactured in the co-operative sector, on credit. The State is also participating in the Union government's Five Year Plan to provide full employment to 7.5 million weavers out of the 10 million presently in the sector. To attain this, the production target for the five years has been fixed at 3,500 million metres of cotton textiles and 200 million metres of man made and blended fabrics. As noted earlier, under the industrial policy statement announced by the Union Government further expansion of the textile sector will be in the main through the handloom sector. For the co-operative sector, RBI's handloom finance scheme is being used. For this year, it has been Rs. 40 crores. For those outside the co-operatives, the commercial banks are to help. The new handloom programme is not only to augment production but also to give facilities like treatment, processing of yarn, and the processing of finished fabrics and those made from manmade and blended yarns. To solve the basic problems of fluctuation in yarn prices, the government is making yarn supply arrangements directly with mills. Also new weavers co-operative spinning mills are being set up to increase the spinning capacity of use to the weavers. For marketing, apex marketing institutions like the State Co-operative Societies and Handloom Development Corporation are being strengthened.

Leather :

Leather exports for the 8 month period, April-November 1977, record a decline of 15 per cent from Rs. 20,014.91 lakhs to Rs. 17,112.51 lakhs as between 1976

April–November and the 1977 6 month period. Among the finished products, leather products have declined sharply by 42 per cent, goat hair by 71 per cent and ET tanned hides and skins by 32 per cent. These declines are due to the slump in demand from the European markets. On top of this, there is to be a further cut on semi-finished leather in 1978–79, which is causing anxiety to the small units which do not have the resources or equipment to switch over to finishing. The Leather Export Promotion Council predicts a decline for the year of 10 per cent in exports, from Rs. 370 crores in 1976–77 to Rs. 300 crores in 1977–78. The Council is making a case for the State government putting all their financial resources in existing units in order to provide them with raw materials so that they could provide optimum results instead setting up new tanneries, which will not have the technical expertise to function optimally.

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IV Education, Science and Health

Educational Unrest :

December saw a mixture of student unrest and teachers' agitation. 5 centres in Patna, Calcutta, Hyderabad and Madurai witnessed students clashing with busmen, the police or one another and in support of teachers' agitation in one centre. On the whole, the trouble was both short lived and limited to the centres referred to. In this State, as a result of a meeting of students, teachers, parents, the government police and busmen, it was decided to form a standing committee comprising 6 students, 6 members of the public, and representatives of the the government, police and busmen to meet once a month to solve problems arising between students and busmen and students and the public. The committee is also to review the Rs. 15 all-route bus pass concession to students which has given rise to several cases of misuse. It was interesting that all parents present at the meeting wanted withdrawal of the bus pass, because it led their children to keep late hours and frequent theatres and hotels. Madurai and Madras University teachers launched agitations for improved conditions of work and for full implementation of the Fifth Plan salary scales. The Madurai university teachers boycotted examinations and were arrested in large numbers—of over 600—when they picketed the examination centres. Madras university college teachers took casual leave on December 13 and went in a procession to the Secretariat, met the Education minister and presented their demands comprising full implementation of the Fifth Plan scale, upgrading of the posts of tutors and demonstrators and security of service. Their plan to follow this up by boycotting the examinations was given up and the Madurai university teachers also withdrew their agitation, pending assurance by the government that their grievances will be studied and met within the resources available. There is need for issues to be settled on a long term basis as otherwise the March examinations will be disrupted.

Educational Reform :

A National Education Conference called by the all-India Nai Talim Samiti and Dr. Shriman Narayan has proposed a new structure of education—an eight year primary school, free and compulsory for all, four years of secondary education and three years of university education along guidelines laid down in Gandhiji's basic education principle, involving imparting education through socially useful productive activities closely linked with economic growth and development. In accordance with Article 45 of the Constitution, all the States must arrange for free and universal primary education upto class 8 by the end of the Sixth Plan. This is a tall order because it means that some 20 per cent of students not now in the five year elementary school and over 60 per cent not enrolled in the middle school–amounting to a total of some 50 million—will have to be enrolled in the next 5 years. The conference has also recommended a common school system of public education, providing equality of access to all children irrespective of caste, class and creed, involving the public schools now patronised by children from affluent families offering free education, reserving 50 per cent of places to children from the weaker sections of society and using the mother tongue as the medium of instruction. Fifty per cent of total school time, it recommended, should be devoted to productive and creative, activities, with the class-room and text–books burden reduced accordingly. In the 4 years secondary school, various types of technical and vocational courses should be offered in line with local employment opportunities. The medium of instruction at all stages of education including universities, agricultural, medical and engineering courses should be in the mother tongue, and for this, the all–India competitive examinations should be conducted in the mother tongue. To reduce the present rush for college education, it recommended delinking university degrees with various types of employment and rocommended government and employing agencies to hold their own selection examinations without requiring degrees. Many of the recommendations such as that on productive work, delinking degrees from employment qualifications are unexceptionable and repeat what has been established by previous conferences, CABE and commissions. The switchover to the mother tongue as the medium of instruction requires a good deal of prior preparation of parents. In this State, 80 per cent of students and parents choose the English language medium, because mainly of the employment opportunity. If employers ask for Tamil competence, this would be one way out. The problem of drop-outs because of the peoples' poverty has not been dealt with and it is linked with the major question as to whether the school system can ensure equality when society is unequal. The curricular problem is not that it is overloaded but that it is irrelvant and the examination system is anti-learning. It is those substantive problems that demand attention and not the arithmetic of 10 + 2 + 3 vrs. 8 + 4 + 3. In fact, the educator in India is now placing himself in a ludicrous position vis a vis the public in this debate on numbers. Surely the objective of the conference which is to redeem the constitutional pledge of providing education to all children upto the age of 14 can be met by ensuring that the elementary (5 year) and middle school (3 years) is given priority in all States, and there is cent per cent enrolment without any drop-outs before the end of the Seventh Plan. Along with this, the curricular and examination reform *and non-formal and* adult education programmes if executed can achieve the education system which all desire. As part of this proposal, the Ishwarbhai Patel Committee submitted its report in early December under which (a) in the elementary school 20 per cent of time will be allotted to socially useful productive work and 20 per cent for games and creative activities and (b) in the middle school and secondary school 6 hours out of a total of 32 hours a week are recommended for socially useful productive work and four hours for games. This will *lighten* the load of book learning and home assignment. Also in the 10 year school, study of humanities, science and mathematics are included for all to provide a broad based education. At elementary school stage one language will be studied, at the middle school stage two languages will be studied and at the secondary stage 3 languages will be studied. The committee has made a detailed inventory of socially useful productive work at every stage—elementary, middle and secondary—and *the consequent time tables for each of* these levels as a kind of model. Now what is needed is a certain period of quiescence and stability so that the educational changes launched under 10 + 2 + 3 system can be carried out and assimilated and with the first eight years receiving priority and the programme of what the Kothari Commission called work experience and what the Patel *Committee and the National Conference* calls socially useful productive experience which are identical concepts built into the system. The Union education minister announced in December that because of the opposition of the Congress which controls the Rajya Sabha and the opposition of teachers organisations, education which was to be taken out from the concurrent to the State list will remain in the concurrent list. This is a retrograde move as far as children are concerned because it will only produce more debates like those taking place now, as education in the *final analysis* is a one to one learning relation.

Adult Education and News Agencies :

The State government in December has opened a second non-formal education centre in each of the 374 panchayat unions in the State for the age-group 6-14, *in addition to the one centre in* each union which has been functioning since 1977. The second centre will start functioning from January 1978 and though each session is supposed to have 30 students for each centre, the pressure on it has led to the opening of the second centre. A hundred centres for non-formal education of the age-group 15-25 in each of 6 districts of North and South *Arcot*, Salem, Tirunelveli, Coimbatore and Tiruchi will also start from January 1978, and will be followed by 100 centres each in Dharmapuri and Ramanathapuram districts. *Under the* farmers education and functional literacy programme 630 centres are functioning in 8 revenue districts. In early December, the Asian National News Agency meeting in Colombo decided to establish a regional Asian centre to collect and redistribute news from national agencies. A working group of India, Indonesia, Iran and Mongolia and Sri Lanka is establishing the centre. This would promote co-operation between Asian people and better knowledge of each other's social and economic development efforts. ITU was requested to help lower the cost of press transactions for the new centre. The Union government is reviewing its position with regard to satellite based TV. It is of the view that a decision on this should be taken after study of all elements, including the magnitude of the outlays involved, effectiveness of black and white TV as a mass media for rural development in light of our experience under SITE and participation of State governments in community viewing arrangements. While some provision may be made for base production unit at Jaipur, Raipur, Gulbarga and Muzaffurpur where transmitters have come up, the impact of the TV programme under the ongoing SITE scheme which should be rural oriented should be further evaluated before there is any large scale investment in the ground segment of INSAT-I, whose capital cost is Rs. 239 crores. In 1978-79 a capital cost of Rs. 137.10 crores and revenue expenditure of Rs. 39 crores have been requested, and this has been provided in the Sixth Plan with the provision that the whole project will be thoroughly reviewed. TV's effectiveness as an educational medium in the rural areas is questioned. The radio which is much cheaper and already covers 80 per cent of the country and 90 per cent of the population is a primary medium. The Union minister of information has requested for TV Rs. 238 crores for the VIth Plan against Rs. 50.98 crores for the Vth Plan, for radio the request is Rs. 75 crores, being double the Fifth Plan quantum of Rs. 38.40 crores.

Technical Education :

The Madras university of Science and Technology is in the final stage of preparation and the legislation to establish the university is to be introduced in the State legislature at its budget session in February/March. Its main campus is to be the College of Engineering, Guindy, which has a sufficient infrastructure to serve as a nucleus of such a university. The University of Madras will be transferring to the new university, the 3 technology departments of chemical, textile and leather technology and the school of architecture and town planning. The Syndicate has set up a committee to establish the conditions of their transfer. A seminar in Madras in December on Medical Libraries has recommended the standards to be followed in developing such libraries. It has suggested that foreign books should be purchased at established exchange rate, less a standard discount, and Indian books should be purchased at published prices less a standards discount. A committee to set standard for medical college libraries for stock management, consumer services, personnel services and library layout has also been recommended. As part of its consumer services, the library should offer bibliographical and information services relating to the inflow of books. Neighbourhood doctors should have access to the medical college library.

Science :

IARI has recommended increasing the subsidy on small biogas plants from 20 per cent to 50 per cent. It has also recommended co-ordination of bio-gas research on the biogas and slurry yields of the various plant designs and the streamlining of bio-gas design plants on the basis of performance, cost-benefit *ratio and efficiency of methane production.* CLRI, Madras, reports a new method of curing raw hides and skins with a mixture of organic compounds obtained from neem oil and also a new leather finishing agent based on chlorinated rubber. The Cement Research Institute at Ballah garh reports developing techniques to utilise industrial wastes such as fly ash of thermal plants and *paper sludge and has perfected processes* to manufacture substitute and cheaper products for mass consumption. Fly ash from the thermal plants in Uttar Pradesh, Andhra Pradesh and Delhi have been ground with clinker and gypsum to produce good quality cement at lower cost. Another reported technique is to use fluidisation and admixing portland cement with fly ash. Preparation for the International Solar Energy Congress to be held in latter half of January in New Delhi will bring together 1,000 delegates including 650 from abroad. This country has been chosen as host because of its advanced level of research in solar energy. In fact solar energy is fast catching up in *the developing countries and is already* economically competitive in rural areas of Africa and Latin America where many simple and practical solar devices are in use in a variety of settings. The Union government announced in December that it is considering setting up a National Agricultural Research fund with a loan from the World Bank to finance location specific research in agricultural universities. *The fund will stimulate research* tailored to the agro-ecological and social economic features unique to each state. New research projects to be established now include a research centre for rainfed rice in Bihar, operation research projects in deep, medium and shallow water paddy areas, an international cotton institute, a new central institute in buffalo research, goat research, soil research, agricultural *economics and technology* and national research centres in oil seeds, pulses, animal nutrition, fisheries and basic research in use of solar energy of plants, plant and animal physiology, biological nitrogen fixations, agricultural micro-biology and chemicals and a national bureau of animal and fish genetic research.

Health :

The National Family Welfare fortnight observed during the second half of December was an effort to rehabilitate the family planning programme. In organising the fortnight, the Union government asked the State government to bear in view the goal of reducing the birth rate from 30 per 1,000 in March 1979 to 25 per 1,000 by March 1984, *and asked that* all should be told that unless this goal was attained by restricting the size of families, poverty could not be abolished within the country. To highlight the small family norm, a massive motivation and education campaign was launched to promote all methods of contraception, including the importance of sterilisation. The extent to which the fortnight succeeded in rehabilitating the *family planning* programme remains doubtful. The State programme emphasised the need to cut back on the 3,888 babies born in the State every day. The Union government's rural health scheme (see Vol VII p 311, 393 and 603) was under debate at the *annual* conference of the Indian Medical Association. While the Union minister of health appealed to the members of the Association to change the medical profession's attitudes towards the need for more social services and for adopting a farsighted approach in rural health services, the president of the Association warned the government that if the community health worker was allowed to carry a kit of medicines and dispense them, it would add to the number of quacks in the country, enhance allergic manifestations, resistant to life saving drugs and produce a panorama of iatrogenic diseases. This was not a helpful comment as the community health worker is not to dispense medicines. The proposal made at the Health ministers' conference in April 1977 for a two year compulsory service in rural areas by medical students has been rejected by a committee of medical experts to whom the government referred the proposal. The conference had proposed that medical education might consist of 3 years in medical colleges, followed by 2 years practical experience in the villages and then 2 further years in the medical colleges. It was also suggested that the LMP course should be revived. The expert group rejected the revival of the LMP course, because the licentiates settled in towns to practice, and invariably insisted on further training to become MBs. On the proposal for 2 years of practical work by medical students in the villages (which would provide 30,000 additional medical personnel for the villages, making possible a coverage of 1 doctor to 10,000 persons), the committee felt that the proposal was unnecessary. Instead after graduation, the State government might employ the graduate doctor for work in the villages with a salary and suitable allowance. The committee endorsed IMC's emphasis on community health with special reference to the rural areas in the new medical curriculum. In this State, a mini health centre to cater to the people of Vaniyanchavadi and its 3 near by villages was opened in December by a voluntary agency. This was the second such centre started by the agency located in a 10 acre plot with an out-patient department and a maternity ward. More voluntary agencies have been urged to follow this example to improve rural health services in the State.

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V Employment

A savings-cum-housing scheme and a Janata Provident Fund-cum-Insurance scheme has been recommended by the Committee on Industry and Labour of the National Savings Central Advisory Board under which a person whose salary does not exceed Rs. 750 per month will become eligible for a housing loan after he makes monthly subscriptions to the small savings scheme for 5 years. The minimum and maximum cost of the house is fixed at Rs. 4,000 and Rs. 12,000. The State government has set up a committee to study the labour laws in the State and suggest ways of tightening their provisions. The panel will be asked to recommend modifications to serve the interests of workers better and reduce the occasions for labour disputes. Since March there were 603 such disputes in the State. The State government proposes to help jobless graduates in the State and set up handloom retail shops as noted earlier, with loans from nationalised banks. To start with, 50 such shops are being promoted. Also a scheme has been finalised to extend preferential and concessional treatment to qualified unemployed engineers on public works projects on a self-employed basis. The scheme might also help builders improve the quality of this work.

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VI Other Items

Third World Centre, Mexico :

A meeting of economists and other social scientists on the Future of the Third World was held in the Centre for the study of economic and social problems of the Third World, Mexico city from December 21-23. The 25 specialists present agreed upon poverty and inequality —both national and international—as being the main feature common to all countries in the Third World and this was analysed in economic and social terms. When it came to charting the way forward the members from the industrialised world were most insistent on reduction of nuclear stockpiles, to be followed by full and complete disarmament as pre-conditions to the development of the Third World. The main conclusion of the meeting was in outlining the main areas of regional and inter-country study around problems of North-South relation in regard trade, energy use, debt relief, commodity stockpiling and agreements and an international system in which there would be more of an equal partnership between the industrialised and Third World countries in regard to decision making. It was also decided that the Third World participants will intensify their action oriented programme to analyse the reasons for the restriction on freedom of political opinion and activities and freedom of expression and the press and inequalities in economic and social relations within their own countries. The results of the meeting are to be set forth in a publication on the major issues facing the Third World, as part of UNESCO's programme of futurological studies.

+ 2 Committee :

In early December, there was a final meeting of the sub-committee of the Higher Secondary Education (+ 2) Committee which reviewed the NCERT document--the Vocationalisation of Secondary Education. The emphasis was on agri-vocational streams and options at + 2 level, in view of the major occupations for the country being in agri-rural areas. There was also a meeting of the Chairmen and rapporteurs of all the four sub-committees of the committee—on the agricultural streams, the industrial streams, the academic streams and the main NCERT document in order to co-ordinate their preliminary findings and prepare for the plenary meetings in January and February.

Higher Education for Women :

In December, there were two events concerned with Higher Education for women. The All India Council of Christian Higher Education brought together some 50 principals of women's colleges from the Roman and non-Roman Churches to examine the preparations they should undertake for educating the Indian woman of tomorrow. The high level discussions resulted in agreement that more of the women who have been kept out of higher education so far should be brought in and they should be given training for taking their place as equals in society. About the same time the University Commission on Higher Education for Women finalised and submitted its report to the Vice-Chancellor in which a long term programme for the education and equality in the employment of women beginning with the university was emphasised.

ICSSR and IAEA :

A meeting of the Research Advisory Committee of the ICSSR met in mid December and reviewed and approved some 50 research projects. In addition the possibility of spreading the Ph. D. awards as well as the research grants, more equitably between the geographical regions of the country was emphasised. The Executive Committee of the Indian Adult Education Association met at the same time, reviewed the four seminars planned for the year and made tentative a decisions about the 1978 annual conference to be held at Ramakrishna Vidyalaya, Coimbatore. It accepted the recommendations of the editor for strengthening the English version of the journal so that it covers news of the National Adult Education Programme and the continuation of the Hindi edition.

Bible Exhibition and Rajaji's Birthday :

In December, the Bible Society of Madras organised an exhibition of the Bible, which made available to the public, information on the Bible as translated in all Indian languages as well as in all languages of the world. It was an impressive display of the popularity of the Bible as literature as well as a second text. In mid December, the 100th birthday of Rajaji was celebrated on the same day as the UN Human Rights day. Rajaji's wide ranging and persisting contribution to nuclear disarmament as part of his fight for human rights and the right to life was recalled, and the need to publish his thought and writings on the subject emphasised.

National Adult Education Programme :

The University's Advisory Committee on the National Adult Education Programme met in early January and drew up a plan for the University's participation in the the programme. In mid month, this was followed by a meeting of the university department heads and the CSS and NSS co-ordinators of the colleges for a two day period when the plan was discussed and approved. The plan calls for each Department or groups of Department adopting two villages, and each college adopting 2 or 4 village, where as part of the CSS work, literacy in the broad functional sense will be made available for illiterates in the age-group 15-35. In this way it is planned to cover some 2 lakh illiterates over the Sixth Plan period.

NCAER and TV and AIR Committee :

The Board of Governors of the National Council of Applied Economic Research met at its headquarters in New Delhi in December and reviewed the functioning of the Council in 1977 and its programme of work in 1978. Its research studies for the departments of government in regard to industry, markets and productivity were approved, and emphasis was laid on further studies on the economics of recycling and use of waste. A further meeting of the committee on Doordarshan and AIR has held in December when the organisational structure of the future autonomous bodies was discussed at length and broad lines of agreement established as to its autonomy and decentralised nature.

Chemistry Refresher Course and Orientation of Principals:

Under UGC's University Leadership programme, a refresher course for teachers in the affiliated colleges in physical chemistry was organised. The course is one of three and will be followed up by similar ones at Tiruchy and Coimbatore, so that all chemistry professors and assistant professors are updated. The National Staff College organised a one week orientation course on educational planning for principals of 30 government colleges. The need to decentralise responsibilities to the principals was emphasised as a pre-condition for institutional planning. The techniques of institutional planning were fairly thoroughly reviewed and endorsed.

Population Cell and MIDS Selection Committee :

At the end of December, the Population Cell established with the financial help of the Family Planning Association of India in the Department of Adult and Continuing Education was formally inaugurated. Its function is to start population education clubs in the affiliated colleges, help in university and college students making decisions about the size of their families when they marry, and to incorporate the message in the Adult Education programme which the University is undertaking. The Selection Committee of Madras Institute of Development Studies met in December and interviewed five candidates each for the two posts of Administrative Officer and Librarian and made its recommendation on the posts to the Governing Council.

Indian Economic Conference :

The Diamond Jubilee Conference of the Indian Economic Association was held in the Madras University from December 28 to 30. It was inaugurated by Dr. I.G. Patel, Governor of RBI who emphasised the need for an early break-through in the economy, using all the positive factors that are now available in skills, science, reserves etc for it The presidential address warned that all indicators of the economy—wage goods, productivity, saving and investment, employment, real wages—are declining and only money supply, prices and population are increasing. There is need for saving and investment to increase rather sharply to avoid the economy moving into a stationary state, it was stated. The Conference conclusions revolved around its 3 basic themes of Ricardian Economics, Theory of Wages and Income Distribution in India. There were 10 past presidents who assisted the conference and gave lectures on the 28 to 30 December in various places in the city. The two symposia on the rolling plan and education and economic development aroused lively interest. The conference was a good occasion for economists to meet, but it has yet to define the means by which it can also be an occasion for meaningful exchanges and debates on subjects of importance to the discipline and the country.

January Development Seminar :

The paper for the monthly seminar in January, *"Tamil Nadu Economy in 1977"* by Dr. C. T. Kurien, Professor and Head of the Department of Economics, Madras Christain College, together with a summary of the discussion of the paper which took place at the seminar under the Chairmanship of Dr. T.S. Venkatswamy, Professor and Head of the Department of Economics, Presidency College, Madras appears as the first article.

Second Article :

A paper on *"The Role of the Heavy Industry"* appears as the second article.

Some Aspects of Economic Change in Tamilnadu

1950—1975

By

C. T. KURIEN

Madras

1. It is now generally recognised that the time has come to make a critical valuation of the economic changes that have come about in the country during the three decades since Independence and especially during the quarter century of planned economic development. At the all-India level a number of studies of this kind have started appearing. But studies of economic change at the State level have not yet become common. This is a major drawback indeed because in a country as vast and varied as ours the generalisations at the all-India level have to be supplemented by the variety of experiences at the State level so as to make our understanding of the changes more accurate and comprehensive. With this problem in mind during the past five years I have concentrated on studies on economic change in our state. A regionally and functionally disaggregatad study of economic change in the state from 1960 to 1970 which I did (along with my colleague Prof. Josef James) is to be published soon. (*Economic Change in Tamil Nadu: A Regionally and Functionally Disaggregated Analysis:* Allied Publishers, 1978). The procedure that was adopted in that study was to partition what is called "the Economy" of the state simultaneously into four functional characteristics—labour force participation, agriculture, industry and urbanisation—as well as into the districts and taluks of the state to probe into the manner and meaning of the changes that took place within a decade. Subsequently I have been making a more detailed study of the changes in rural Tamil Nadu for the period from 1950 to 1975. This study is now nearing completion. In both these studies I have tried to use a variety of analytical tools, some of them rarely made use of by economists. But I have always held the view that tools are only tools and that what is important in economic analysis at least is not the glamour of the tools, but the insights that they lead to. In this paper I shall present some of the major findings of my studies without going into the procedure of analysis and without attempting detailed documentation.

II

Changes in State Domestic Products and Related Indicators

2. Economists generally envisage what *they call "the Economy" as an income*-producing machinery and concentrate their attention almost exclusively on what the machine produces. As a first approximation this approach gives some idea of the changes that come about over a period of time. Hence I shall start with these indicators. (Para 3 to 5 are taken from Celine DeSouza's "Economic Trends in the Planning Era").

3. During the period 1950-51 to 1973-74, per capita income at 1960-61 prices rose from Rs. 257 *to by* Rs. 374 or by 45.5 per cent. As population increased by 44.52% during the same period, the aggregate State Income in real terms grew by 109.9 per cent in 23 years.

4. In the first half of the period under study i.e. during the decade 1951-52 to 1960-61, the per capita income at constant prices grew from Rs. 267 to Rs. 334 *or by* 25.1 *per cent in* 10 *years.* Then the size of per capita income declined to a level of Rs 317 in 1965-66. After 1966-67 the per capita income again started to grow, the figure being Rs. 374 in 1973-74. The rise in the per capita income in the first half, followed by a decline since 1961-62 upto 1965-66 and the subsequent rise to 1973-74, does not reflect the rate of growth of State Income because of the different rates of growth of population during the two periods. While the population grew only by 9.53 per cent during the period 1951-52 to 1960-61, it increased by 19.65 per cent during the period 1961-62 to 1970-71. The State income grew by 36.6 per cent in the first half and by 32.3 per cent in the 2nd half and by 4.7 per cent during the period 1971-72 to 1973-74. Thus while the tempo of growth slackened in the second half, the performance of the State economy was not as bad as conveyed by the figures of per capita Income. The compound rate of growth of State Income, population and per capita Income during the period under study is given in Table below:

TABLE 1

ANNUAL COMPOUND RATE OF GROWTH (PERCENT)

Period	State Income at 1960-61 prices	Population	per capita income
1951-52 to 1960-61	3.5	1.0	2.5
1961-62 to 1970-71	3.1	2.1	1.2
1971-72 to 1973-74	2.3	2.2	0.1
1951-52 to 1973-74	3.2	1.6	1.6

5. Thus (a) the analysis shows that the rate of growth of per capita income over the entire period 1951-52 to 1973-74 is low, being 1.6 per cent per year. At this rate, per capita income of 1973-74 would *double in 47 years.* The rate of growth of State Income over the whole period was 3.2 per cent a year, while the annual compound rate of growth of population was 1.6 per cent per year. (b) The later decade 1961-62 to 1970-71 shows a lower rate of growth of per capita income but a more or less similar rate of growth of State Income as compared to the earlier period. The rate of growth of population was 2.1 per cent per year in the decade 1961-62 to 1970-71 as *against only* 1.0 per cent per year during 1951-52 to 1960-61. (c) The rate of growth of per capita income during the first half (1951-52 to 1960-61) was higher than the latter half, but the rate of growth of State Income was more or less similar in comparison with the rate prevailing in the earlier decade. This is because, the past decade of higher rate of growth in per capita income was characterised by low rate of population growth at 1.0 per cent per year during 1951-52 to 1960-61, while the rate of growth of population during the period 1961-62 to 1970-71 was as high as 2.1 per cent per year (d) The rate of growth of State Income in the recent past i.e. 1971-72 to 1973-74 is considerably lower (at 2.3 per cent) than the rates obtained in the past two decades. *The rate of growth of per* capita income (0.1 per cent) in the latest 3 year period was also below our past performance. This goes to show that the rate of growth of per capita income during the *periods characterised by very low rate* of population growth is higher than the rate of growth of per capita income obtained in the latest period.

6. To get a clearer idea of the performance of the economy over the two decades it *is necessary* to examine a sectoral decomposition of the Net State Domestic Product. Agriculture *and allied* activities accounted for over 52 per cent of the NSDP in 1950-51 commerce, transport and communications coming second with close to 22 per cent and mining and *manufacturing and* other services claiming approximately 13 per cent each. Over time a steady *decline* is noticed in the share of agriculture and allied activities. By the beginning of the sixties it came down to below 50 per cent and in 1967-68 it went down to *even less than* 40 per cent. But, 1967-68 was a drought year when the performance of agriculture was very poor. However, even with a major absolute increase in the output of the sector since then, the share of the sector was only a little over 40 per cent in 1970-71. The sectors that gained at the expense of the agricultural sector were industry and services. The former improved its share from less than 13 per cent to close to 22 per cent and the latter from over 13 per cent to 19 per cent. The big increase in industry came about in the sixties.

III

7. At the beginning of Section II, I *compared* "the Economy" to a machine producing "output" or "income". And something of the performance of the machine during the quarter of a century from 1950-1975 (approximately) has been given in the rest of the section. But the economy is not such a simple thing. It is a multi-dimensional complexity that defies easy representations and conceptualisations. The only way to get an idea of this

complexity is to look at it from many more angles. That is also the only way to capture the multi-dimensionality of economic change. In what follows, therefore, I shall turn to some other aspects and dimensions of the changes that have come about in the economy of Tamil Nadu.

Population and Labour Force

8. The population of the state moved up from 30 million in 1951 to 33.6 million in 1961 and 41.2 million in 1971. The increase of 11.85 per cent during the 1951-61 was very low compared with the all-India figures and there has been no adequate explanation for it as for the sudden increase to 22.3 per cent in the 1961–71 decade. Another interesting feature is that inspite of such big variations in the rate of growth of population the age composition of the population has remained very stable over the two decades as can be seen from Table 2.

TABLE 2

AGE COMPOSITION OF THE POPULATION

Age groups	Share in total population		
	1951	1961	1971
Below 15 years	36.2	37.6	36.3
15 to 59 years	58.2	56.8	57.8
Above 60 years	5.6	5.9	5.8

Source : Census Report

9. Another noteworthy aspect of the population and labour force characteristics of the state during this period is that in terms of the broad sectors of the economy the distribution of the labour force has not shown much change. The primary sector (consisting primarily of agriculture) claimed 62.4 per cent of the labour force in 1951, 63.3 per cent in 1961 and 64.8 per cent in 1971.

The secondary sector (consisting mainly of manufacturing) accounted for 14.2 per cent in 1951, 14.7 per cent in 1961 and 14.9 per cent in 1971. The residual tertiary sector accounted for the rest, 23.4 per cent in 1951, 21.9 per cent in 1961 and 20.3 per cent in 1971. It is one of the empirical laws of economic development that as the economy grows over time there is a shift of the labour force from the primary sector into the secondary and tertiary sectors. Not only has this not happened in our State, but along with the growth of the past, our experience appears to be in the opposite direction. In Section II it was noticed that the share of the agricultural sector in NSDP had come down significantly over the two decades and that of manufacturing and service sectors had gone up. What it implies is that the growth of the secondary and tertiary sectors has not been of a labour absorbing kind and that consequently the agricultural sector has the burden to contain all the residual labour force. It means also that in relative terms the disparity between the productivity of workers in the primary sector on the one hand and the rest of the economy on the other must also have increased.

10. Because of the change in the definition of the term "workers" in the census reports, especially of 1961 and 1971 it is not easy to make more detailed inter-temporal comparisons of the occupational distribution of the labour force. But Table 3 will give some rough idea of what has been happening.

TABLE 3:

DISTRIBUTION OF 1000 PERSONS AMONG THE WORKERS AND OCCUPATIONAL CATEGORIES, 1961 & 1971.

		1961		1971	
		M	F	M	F
I	Cultivators	250	133	193	29
II	Agricultural Labourers	85	82	135	82
III	Livestock, Forestry, Fishing, Hunting, Plantations, Orchards and allied activities	20	6	14	5
IV	Mining and Quarrying	40	31	2	N
V	Manufacturing, Processing Servicing & Repairs:				
	a) At Household Industry	44	6	23	9
	b) Other than H.H. Industry			56	7
VI	Construction	10	2	10	2
VII	Trade & Commerce	39	6	51	4
VIII	Transport, Storage & Communication	15	N	22	1
IX	Other Services	93	46	54	12
	Workers	597	313	560	151

Source : Census Report

11. The *reduction in participation* rate resulting from the change in the definition is seen from the fact that among males only 560 out of 1,000 were workers in 1971 as against 597 out of 1,000 in 1961, and more strikingly, only 151 out of 1,000 females were workers in 1971 compared to 313 out of 1,000 in 1961. Similar big changes are noticed in the case of cultivators, mining and quarrying (where the numbers are rather small in any case) and in other services. On the other hand, it is seen that in the case of males there are significant increases in trade and commerce category and transport and communications category.

12. Some more observations are in order about the changes in the occupational patterns of the labour force between 1961 and 1971. If occupations are divided broadly into two, viz. agricultural activities and non-agricultural activities, there has been slight increase in the proportion of workers engaged in the former during the period. In 1961, 605 out of 1,000 workers were in agriculture. It moved upto 618 in 1971. Although this is only a marginal increase, it must be remembered that the change in the definition of "workers" between 1961 and 1971 had *a tendency to reduce* workers engaged in agriculture. Hence even this marginal increase is significant indicating a definite shift of the labour force into agriculture. That this should have happened in a decade of rapid industrialisation is a telling commentary on the nature of that industrialisation.

13. Table 3 shows another significant change, the big fall in the proportion of cultivators both among males and females, but particularly so among the females and the equally striking increase *in agricultural labourers particularly* among men. Here again certain definitional problems make it difficult to say really what it means. But I have scrutinised the data as carefully as possible and have come to the conclusion that the increase in the proportion of cultivators and increase in the proportion of agricultural labourers is one of the most striking aspect of change in the economy of Tamil Nadu in recent times.

14. Cutting across the occupational classifications is the division of the workers into the organised and unorganised sectors. The organised sector, according to an official definition "comprises of all establishments in the public sector and those of private establishments in the non-agricultural sector employing 10 or more workers." In 1961 the organised sector so defined accounted for 8 per cent of the total labour force and 22 per cent of the *workers in non-primary* activities. After a decade its position improved somewhat to a little over 10 per cent and 30 per cent respectively. But if an adjustment is made for differences that come about because of the change in the definition of "workers" (which tends to underestimate workers in the unorganised sector), it may be reasonable to infer that the share of the organised sector in the labour force may not have increased at all.

15. To sum up this section,we may say that a shift of the labour force into agricultural and the primary sector in general. and within agriculture from cultivators into agricultural labourers and within the *non primary sector marginally at least* from the organised to the unorganised sector have been the main features of the changes in the distribution of the labour force in the state in the recent past. All

these must be thought of as retrogressive in terms of the kind of transformations economists associate with growth and development.

IV

Land and Asset Distribution

16. When attention is concentrated on the performance of the income producing machine, the *structure* of the machine itself tends to be overlooked. Even if the economy is *conceptualised as a machine (and it is a very poor representation indeed)* its structure cannot be ignored *because qualitatively one must distinguish* between change that is achieved without major structural alterations and change that is *induced by*, accompanied by and leading to structural *transformations*. The structure of the economy is the *manner in* which the resources of the economy, particularly non-human resources are owned and used. *Information on this aspect*, particularly at the state level is extremely limited. But fortunately on the ownership and *utilisation patterns* of land we have information available over a period of time, primarily from the Reports of the National Sample Survey. Based on the NSS Reports it is possible (subject to some limitations, once again) to see what has been happeninng to the ownership and operational *patterns of land roughly* between the late fifties *and the early seventies*.

17. *Households* owning and operating land constitute *more than* half of the total number of households in rural Tamil Nadu. Between 1961-62 and 1971-72 the percentage *declined only* from 57.7 to 55.1. Households not owning, but operating land (that is those who operate land fully by leasing in land) are a very negligible proportion, 2.3 per cent *in* 1961-62 and 2.9 per cent in 1971-72. While the relative position of these two categories has remained fairly stable, there was a *substantial increase* of those owning land but not operating it (from 18 per cent to 27.8 per cent) and a significant fall in the *proportion* of those neither owning and operating, from 21.8 per cent to 14.1 per cent.

18. *Information on distribution* of area of land owned according to different size classes of households is also available. *In* 1959-60, the lowest size group owning less than one acre of land and consisting of 60.4 per cent of the households *accounted* for 3.4 per cent of area owned. In 1971-72 the same group and about the same proportion of households (60.5 per cent) accounted for a slightly higher share of land, i.e. 4 5 per cent of area owned. At the other end the large size group owning above 20 acres and accounting for 0.98 per cent of the households claimed 18.1 per cent of land owned. In 1971-72 the *same* group accounting for 0.73 per cent of households had 13.0 per cent of owned land. This may be taken as evidence of some shift, however modest it may be of land *owned from the biggest owners* to the smallest.

19. But this matter requires further *scrutiny*. A more *detailed examination* of size classes leads to the following *conclusions*:

1. Between 1959-60 and 1971-72 there have been some changes, but not very significant in the *inter-class* distribution of ownership holdings.

2. The top class of those owning above 50 acres, has lost its share of land.

3. The lowest three size-groups owning less than 5 acres of land have improved their position but the changes are not significant.

4. All other groups (i.e. those owning more than 5 acres but less than 50 acres) have improved their position and the changes are significant.

5. The major beneficiaries of changes in the ownership of land have been those owning more than 15 acres but less than 50 acres.

20. In terms of operational holdings the comparison is between 1959-60 and 1971-72. During both these periods more than half the number of households operated less than one acre of land, 56.47 per cent in 1959-60 and 56.07 per cent in 1971-72, and the proportion of area operated by them also remained about the same, 3.2 per cent and 3.8 per cent respectively. In terms of other size groups also there has been relative stability except in the case of the largest size groups operating more than 50 acres. This group included 0.1 per cent of the households and accounted for 4.3 per cent of the area operated in 1959-60. By 1971-72, these percentages came down to 0.03 and 1.1 respectively. Here again a more detailed examination shows that changes in the distribution of operational holdings have been to the advantage of larger operating units, especially those with between 20 and 50 acres.

21. Two studies by the Reserve Bank, one relating to 1961-62 and the other relating to 1971-72 give information about the distribution of assets in rural Tamil Nadu. In these studies assets include all items owned by the households which have money value such as land, buildings, livestock, agricultural implements and machinery, non-farm and transport equipments, durable household assets and all forms of financial assets. Households with asset value of less than Rs. 500 accounted for 29.5 per cent of the households and 1.2 per cent of the total assets in 1961-62. The same group accounted for 25.5 per cent of the households and 0.9 per cent of the assets in 1971-72. On the other hand, the top group of households with asset value of over Rs 20,000 constituted 5.3 per cent of households and claimed 43.3 per cent of the assets in 1961-62. Their share moved up to 8.2 per cent of households and 60.5 per cent of the assets in 1971-72.

22. A further study (R. P. Pathak, K. R. Ganapathy, and Y. U. C. Sarma: "Shifts in Pattern of Asset Holding of Rural Households, 1961-62, to 1971-72" *Economic and Political Weekly March 19, 1977*) has made a more detailed examination of the RBI data. According to the study in 1961-62, the lowest 10% of the households in rural Tamil Nadu had averaged assets worth Rs. 42, and their share accounted for 0.08 per cent of the total assets. Over the decade, these figures came down to Rs. 27 and 0.04 per cent respectively. On the other hand, the top 10 per cent of households had assets worth Rs. 37,906 and their share in assets was 72.57 per cent in 1961-62. These figures moved upto Rs. 53,001 and 77.64 per cent in 1971-72. A further

breakdown of the top decile group shows that the top 1 per cent accounted for 33.0 per cent of the total assets in 1961–62 as against 27.4 per cent of the first 9 groups put together over the decade, the share of the top one per cent increased to 38.97 per cent, while that of the first 9 decile groups declined to 22.36 per cent. On this basis, the evidence is that there is a very heavy concentration of assets in the hands of the wealthiest group in the rural areas and that their relative share has increased over the decade while that of the first nine decile groups taken together has deteriorated.

V

Agriculture and Industry

23 During the period under study, agriculture in Tamil Nadu witnessed some major changes, but also retained some of its main characteristics. To gain some insights into the kind of agricultural transformation the state has had in the quarter of a century from 1950 to 1975, it is necessary that both these aspects of change and stability are taken together for a detailed examination. Basic data pertaining to the past performance of agriculture in the state are available from the two official periodicals, *Season and Crop Reports* and *Tamil Nadu—An Economic Appraisal.*

24. The total gross cropped area in the state was 6,357,000 hectares in 1951–52 and 7,650,000 hectares in 1973–74. Between 80 and 85 per cent of the gross cropped area has been under cereals (paddy, cholam, cumbu, ragi and others), pulses, groundnut and cotton. Paddy has been the most important crop in the state and has improved its position. The area under paddy was 28.14 per cent of the gross cropped area in 1951–52, which increased to 35–35 per cent in 1973–74. The gain in paddy is offset by decline in other cereals which kept the share of cereals as a whole fairly steady. Total cereals accounted for 62.09 per cent of the gross cropped area in 1951–52 and their share continued to be between 60 and 65 per cent till 1973–74, when cereals came down to 57.54 per cent. It was mainly a result of tbe fall in the share of the millets—cholam declining from 11.28 per cent to 8.3 per cent, cumbu from 8.45 per cent to 5.24 per cent and ragi from 5.24 per cent to 3.44 per cent in 1951–52 and 1973–74 respectively. The performance of groundnut and cotton had been erratic Groundnut accounted for 12.27 per cent of the gross cropped area in 1951–52 which came down marginally to 11.90 in 1960–61 and then it started increasing with its share moving up to 14.85 p in 1973-74. Cotton shows a different pattern. After increasing from 3.10 per cent in 1951-52 to 5.41 per cent in 1960–61, its share in the gross cropped area declined to 3.91 per cent in 1973-74. Among the crops sugarcane is the one that shows steady and striking increase over the period with its share in gross cropped area going up from 0.80 per cent in 1951–52 to 1.11 per cent in 1960–61 and to 2.43 per cent in 1973-74, (though the total area itself has always been rather small). Such a threefold increase in the share of sugarcane is the sole instance of major change in the cropping pattern. It is, thus, evident that during the past 25 years the two 'wet crops', paddy and sugarcane, have improved their position while the dry crops, especially the non-paddy millets have lost ground.

25. These observations, however, relate to the shares of different crops or crop groups in the gross cropped area. In terms of actual area, sugarcane registered the highest increase of 202 per cent over the period, followed by paddy (which showed an increase of 50.3 per cent). The area under cultivation moved up from 17 89 lakhs hectares to 26.89 lakh hectares in the case of paddy, from 7.79 lakh hectares to 10.83 lakh hectares in the case of groundnuts, from 0 51 lakh hectares to 1.54 lakh hectares in the case of sugarcane and 1.97 lakh hectares to 2.60 lakh hectares in the case of cotton in 1951-52 and 1975-76 respectively. All the non-paddy cereals have shown a decline in the area. The decrease was from 7.17 lakh hectares to 5.38 lakh hectares for cholam, to 4.59 from 5.37 lakh hectares lakh hectares for cumbu and from 3.33 lakh hectares to 3 11 lakh hectares for ragi in the two periods Thus the decline in the share of millets observed earlier is seen to be the result of absolute decline in the area under cultivation.

26. The pattern noticed above must be supplemented by details about production and productivity to get a more complete picture of the agricultural change in the past quarter of a century. Over the period, production has gone up in the case of all crops. The biggest change has been in sugarcane which shows a more than fourfold increase from 3.32 lakh tonnes in 1951-52 to 14.78 lakh tonnes in 1975-76, followed by paddy which moved up by two and three fourth times from 21.29 lakh tonnes in 1951-52 to 58.67 lakh tonnes in 1975-76. Considering the fact that paddy is the main crop in the state, this increase at an annual average rate of 7.3 per cent has been very impressive indeed. Groundnut comes next, with an increase in the output from 7.82 lakh tonnes in 1951-52 to 12.71 lakhs in 1973-74. The other crops, in the order of their growth of output, are ragi (from 3.05 lakh tonnes to 4.73 lakhs), cotton (from 2.92 lakhs tonnes to 3.86 lakhs), cumbu (from 2.65 lakh tonnes to 3.42 lakhs) and cholam (from 4.61 lakh tonnes to 4.65 lakhs). Sugarcane is the only crop which has shown an almost consistent increase in output. In terms of actual output also, sugarcane, which ranked fourth after paddy, groundnut and cotton in 1951-52, came to be next only to paddy in 1975-76. The pattern of change in per hectare yield is not similar. The largest increase in per hectare yield has been in paddy, which shows 83 4 per cent increase from 1,190 kg in 1951-52 to 2,182 kg in 1975-76. Ragi comes next with 66.0 per cent increase from 916 kg in 1951-52 to 1,521 kg in 1975-76. Moderate increases in per hectare yield are shown by cumbu (51.1 per cent from 493 kg to 745 kg), sugarcane (47.6 per cent from 6,500 kg to 9,597 kg) and cholam (34.0 per cent from 645 kg to 864 kg). The poorest performances have come from the two "commercial crops," groundnut, which registered an increase of 17.2 per cent from 1,002 kg to 1,174 kg and cotton which registered an increase of 0.7 from 148 kg to 149 kg.

27. The changes, noted above are related to changes in land utilisation and improvements in irrigation. The total geographical area of Tamil Nadu is 130 lakh hectares. In 1950-51, 40.5 per cent of this total (about 54 lakh hectares) was net sown area. It moved up to 48.3 per cent (almost 62 lakh hectares) in 1970-71. Early in the seventies, the State Planning Commission's Task Force on Agriculture, expressed the view that,

"the scope for bringing additional area under plough is limited." Net sown area touched the peak of 63.5 lakh hectares in 1971–72 and showed some decline in subsequent years dipping to a low of 55.5 lakh hectares in the drought year 1974–75. Area sown more than once increased from 9.3 lakh hectares in 1951–52 to 13.2 lakhs in 1960-61 and 14.7 lakhs in 1973-74 (declining to 10.8 lakhs in 1974–75) leading to gross cropped area of 63.5 lakh hectares, 73.2 lakh hectares and 76.5 lakh hectares respectively (and coming down to 66.3 lakh hectares in 1974–75 because of the drought).

28. Two aspects of land utilisation pattern are worth noting. In the first place, the index (with 1951-52=100) of net sown area increased to 110 5 in 1960–61 and to 113.8 in 1973–74 and that of gross cropped area moved up to 115.2 in 1960–61 and 120.3 in 1973–74 showing that the advances in land utilisation for cropping were achieved essentially in the fifties. Secondly, the intensity of cropping (i.e. gross cropped area divided by net sown area) has remained fairly steady, around 1.20 over the entire period. Total area irrigated was close to 20 lakh hectares in 1951–52 and 28.1 lakhs in 1973–74. Percentage of gross irrigated area to net sown area was 38.9 in 1951–52 and 48.0 in 1973–74.

29. The availability of water facilitated the movement of land into food crops in general. Area under food crops (i.e., all cereals and pulses, condiments and spices, sugar cane, fruits and vegetables) was 69.5 per cent of gross cropped area in 1951–52. By the end of 1955-56, it increased to 76.3 per cent and with occasional minor fluctuations that proportion has been maintained subsequently. Between 1970–71 and 1973-74, although area under paddy increased marginally and the area under pulses substantially, the fall in the area under non-paddy cereals on one hand and the increase in the area under oil seeds, especially groundnut and other non-food crops on the other led to a slight decline in the share of food crops.

30. While this has been the pattern of change in land utilisation, the pattern of area irrigated under principal crops and crop groups is different The share of food crops in the total irrigated area declined from 91.58 per cent in 1951-52 to 87.40 per cent in 1973-74 and the share of non–food crops increased correspondingly from 8.41 per cent to 12.60 per cent. Within food crops themselves the share of paddy has remained quite stable around 70 per cent over the period. The share of millets has steadily come down from 18.00 per cent in 1951.52 to 8.92 per cent in the end period. Other crops that show major changes are sugarcane (from 2.06 per cent in 1951–52 to 5.77 per cent in 1973–74 and groundnut (from 2.14 per cent to 7.32 per cent).

31. Of special significance to the agricultural change in the state in recent times has been the High Yielding varieties programme, especially in paddy. The fifties had given a fairly rosy picture of agricultural change in the state. Area under cultivation had gone up; there was an all round increase in production and productivity; the food position was quite comfortable. Starting from 32 akh tonnes in 1950-51, food grain production had moved up to 53 lakh tonnes in 1960-61 and on that basis a 70 lakh tonne target was set for the Third Five Year Plan. But, after

moving up to 57 lakh tonnes in 1962–63 food grain production tended to stagnate. It touched a low figure of 59 lakhs in the drought year 1965–66, and just managed to return to the 1960-61 level next year. The HYV programme was launched in 1966–67 against this background. The impact of the HYV programmes on the production and productivity of paddy and, to some extent, even of millets is quite clear. But the period since the introduction of HYV programme has also witnessed at least three years of very poor production because of droughts. Frequently the spectacular achievements of the HYV programme have reference to the recovery of agriculture from these lean years. If we look at the long-term trend of production from the beginning of the fifties up to the latest years, for which we have material, we will be able to see the role of the HYV in better perspective. It can be seen that upto 1964–65, there was a steady increase in output with actual production being above the linear trend, in most of the years. From then actual production was below the trend up to 1970–71. Often the impact of HYV programme is evaluated against the background of the poor performance in the second half of the sixties and the recovery from the recurring droughts of the period between 1965 and 1975. Some of these 'recovery rates' for instance, between 1968–69 and 1969-70 and the even more spectacular one between 1974–75 and 1975-76 have been very striking indeed. But for these rates the post-HYV growth of paddy has been of the order of less than 6 per cent increase from year to year, compared to the 7-9 per cent which were frequent in the fifties. Hence, if the HYV programme can be expected to make a clear break with past trends, it is yet to come in the state.

32. The mechanisation of agriculture in the state has drawn much attention in the past especially in the sixties and seventies. Table 4 gives details of changes in the use of agricultural implements in the state. The total number of ploughs in use has only increased from 2.96 million in 1951 to 3.68 million in 1974 showing a very negligible increase in a quarter of a century. The number of carts has declined, again marginally from 0.68 million in 1951 to 0.59 million in 1974. In contrast, the number of tractors has gone up from 327 to 7,107, the number of oil engines from 13,938to 234, 416 and most striking of all, the number of electric pumps has shot up from 14,751 to 680,705. The stagnation and decline in the use of conventional implements and the sharp increases in the use of modern ones has been one of the most impressive changes in the agricultural sector in rural Tamil Nadu.

33. There is a link between the changes in the irrigation patterns and changes in tne use of agricultural implements. It can be seen that the spurt in irrigation of the early fifties is associated with a jump in the use of tractors. There was a slowing down of tractorisation in the second half of the fifties which is reversed only after a new form of irrigation through electric pumps becomes available. From then on, there is a close connection between the increase in irrigation through electric pumps and the increase in the use of tractors.

34. The increase in mechanisation of agriculture has also been accompanied by an equally impressive use of fertilisers. Per unit of cropped area, the consumption of fertilisers was only around 2 kg per hectare and by the beginning of the

sixties had only gone up to a little over 6 kg per hectare. In the next five years, there was a big jump to 22 kg per hectare which increased to almost 26 kg by the end of the decade. The seventies again saw a substantial increase in the use of fertilisers, the final figure being 44 kg per hectare.

35. The past quarter of a century has also witnessed remarkable industrial progress in the state. When the National Council of Applied Economic Research began its work on the Techno-economic Survey of the state in 1958, it made the following remark about the physical base of industrialisation in the state: "The physical resources basis of the state is ostensibly weak. It is deficient in key minerals essential for a rapid economic development on modern lines. Of coal, there is none; iron available is not of high grade; other metalic minerals are not plentiful. Forest resources too are meagre. Power development is reaching or will reach, the point of saturation. The centres of industry in the region, such as they are, are far from the main fields of raw material supplies." It might appear that a state with such poor physical endowments would find it difficult to register any measure of industrial progress. However, Tamil Nadu has a success story in its industrial growth. It is now the most industrialised of the four southern states and ranks third among the states in the country, next only to Maharashtra and West Bengal. Expansion, diversification and sophistication are the three words used to describe the performance of Tamil Nadu's industrial sector in the past quarter of a century.

36. There are, however, some problems when one turns to an evaluation of the process of change in the industrial sector. Product and process differentiation are more pronounced in Industry than in agriculture. There is also the problem of measurement particularly pertaining to capital. Hence a time series study of industry is more difficult than that of agriculture. I shall make only some general observations about the large-scale sector of industry in the state.

TABLE: 4

USE OF AGRICULTURAL IMPLEMENTS IN TAMIL NADU FROM 1950-'51 to 1974-'75.

Years	Ploughs	Carts	Tractors	Oil Engines	Electric pumps
1951	2,963,464	684,528	327	13,938	14,751
1956	2,928,071	639,805	822	29,761	23,968
	(- 0.24)	(- 1.31)	(30.28)	(22.71)	(12.50)
1961	3,430,102	664,544	934	36,832	98,481
	(3.43)	(1.77)	(2.73)	(4.75)	(62.18)
1966	3,771,672	627,768	2,180	42,852	208,485
	(1.99)	(- 1.11)	(26.68)	(3.27)	(22.39)
1974	3,677,359	594,873	7,107	234,416	680,705
	(- 0.31)	(- 0.66)	(28.25)	(55.98)	(28.31)

(Figures in brackets show the annual growth rates)

37. According to the Techno-Economic Survey, in the mid-fifties, industry contributed roughly 17 per cent of NSDP with the share of the large-Scale Sector in it being 55 per cent. The main large-scale industries in the state in the mid-fifties were textiles (accounting for 40 per cent of factory employment), engineering (15.7 per cent), food industries (12.5 per cent), chemicals (6.3 per cent) and agricultural processing (3.7 per cent). The pattern changed somewhat by the beginning of the seventies in terms of the number of factories, employment and value added. The textile industry still retained its lead, but the lead was considerably reduced. Textiles accounted for 14.6 per cent of the factories, 27.3 per cent of the workers and 18.4 per cent of the value added in the large scale sector. In terms of workers employed and share in value added, the second place went to electric light and power-gas which also claimed the first place from the point of view of productive capital with as high as 43 per cent of the total capital to its credit which also indicates the relative capital intensiveness of the industry as its share in employment was only 18 per cent and in value added only 15.5 per cent. Basic industrial chemicals including fertilisers claimed the third place from the point of view of productive capital. It is also a relatively capital intensive industry, as its share in employment was only 2 per cent and in value added 1.5 per cent.

38. Increasing capital intensification has been one of the most striking aspects of industrial change in the state as can be seen from Table 5.

TABLE : 5

GROWTH OF LARGE SCALE INDUSTRIES IN TAMIL NADU: 1960-70

	1960	1970	Growth rates (per cent)
1. Number of factories	793	1,612	103.3
2. Number of persons employed (in thousands)	225	483	115.2
3. Productive capital (Rs lakhs)	1,164	11,638	899.8
4. Value added (Rs lakhs)	684	2,907	324.80

SOURCE: Annual Survey of Industries

It can be seen that there was a doubling of the number of factories and persons employed, a more than four-fold increase in the valued added and an almost ten-fold increase in productive capital. The changes in the last two, of course, reflect the price increase of the period also and hence cannot be treated as real increases. But one inference can be drawn from the figures; unless, there was a significantly larger price increase effect in productive capital, large scale industry in the state was more capital intensive in 1970 than in 1960. There is reason to believe that this trend has continued since then as well.

39. Another factor that is worth noting regarding the industrial change in the state is the growing concentration of industrial activity around the city of Madras. Coimbatore district had a clear lead in 1960 in the industrial profile of the state, accounting for 32.3 per cent of the number of factories, 33.2 per cent of persons employed, 24.4 per cent of productive capital and 27.2 per cent of value added. The city of Madras came second with 17.0 per cent of the factories, 17.3 per cent of persons employed, 16.0 per cent of the productive capital and 28.3 per cent of the value added. In 1970, Madras city alone accounted for 15.3 per cent of factories, 33.1 per cent of persons employed, 42.0 per cent of productive capital and 32.0 per cent of value added. If we take the neighbouring Taluks of Chingleput district also into account, Madras city and neighbourhood 32.0 per cent of all the factories in the state, 47.2 per cent of persons employed, 65.0 per cent of productive capital and 55.5 per cent of value added in 1970 as against 23.6 per cent, 25.0 per cent 33.0 per cent and 40.8 per cent respectively a decade ago.

VI

Wealth and Welfare

40. The evidence in the preceding sections has shown that the period from 1950 to 1975 has been one of growing output and income in the State. The progress may not have been satisfactory in terms of the norms that were suggested but there it is as a fact all the same. A further question, however has to be raised. Who have been the beneficiaries of the progress of the past? One would have thought that ultimately this is a more important issue than measuring the quantum of what is usually called "growth". But it is symptomatic of the basic malaise of economics that although of late the question itself is being raised, the conceptual frame of analysis, the tools of analysis and the factual material available are all very inadequate to have the question examined carefully. Consequently one has to rely on indirect evidence to answer the question. As it turns out, it is easier to locate sections of the population who *did not* benefit frcm the progress of the past.

41. One such group consists of the wage earners in the rural areas. We have information available on the wage rates of several categories of rural workers for the entire period under study. I have examined three such groups—field labourers, herdsmen and other agricultural labourers. In the case of male field labourers the daily wages in money terms increased from Rs. 1.55 in 1951-52 to Rs. 3.48 in 1973-74. The daily wages of female field laboures also more than doubled during the period (from Rs. 0.94 in 1951-52 to Rs. 2.24 in 1973-74). The wages of non-adults in this category moved up from Rs. 0.74 in 1951-52 to Rs. 1.96 in 1973-74. In the case of the herdsmen the wage rates of males went up from Rs. 1.13 in 1951-52 to Rs. 2.19 in 1973-74, while those of females increased from Rs. 0.87 to Rs. 1.57. The wages of other agricultural labourers also follow a similar pattern, those of males increasing from Rs. 1.34 to Rs. 3.22, of females from Rs. 0.90 to Rs. 1.99 and of non-adults from Rs. 0.75 to Rs. 2.01. During the first half of the fifties there was a fall in the wage rate of all categories. From then on there has been a general upward movement in almost all cases.

42. As stated earlier, these are all wages expressed in current prices. The

more important question is the pattern of real wages. In converting money wages into real wages, there is the technical question of the choice of the appropriate price deflator. I have used four different deflators, the price of paddy I sort, or rice II sort, of ragi and a constructed index of rural prices based on official statistics. The most striking aspect that emerges from these exercises is that as against a more than doubling of money wages in most instances, real wages between 1951-52 and 1973-74 have not only declined in the case of all categories but have come down rather substantially. Using paddy I sort as the deflator, the real wages of male field labourers in 1973-74 was only 67 per cent of what it was in 1951-52. With the use of the price of rice II sort as the deflator, the real wage rate in 1973-74 stood at 71 per cent of what it was at the beginning of the period. Using the price of ragi, the real wage rate came down to 68 per cent. Deflation by the Rural Price Index showed the highest real wage rate in 1973-74, 82 per cent of what it was more than two decades earlier. Hence the choice of the deflator did not make any substantial difference and it was seen that in 1973-74 the wages of all three categories examined and of males, females and non-adults within them stood appreciably below the 1951-52 level.

43. Making use of the data from several rounds of National Sample Survey and the official norms suggested. I have calculated also the percentage of population in the state that can be considered to be below the poverty line. My findings pertaining to the rural population are given in Table 6.

TABLE: 6

PERCENTAGE OF RURAL POPULATION BELOW THE POVERTY LINE

Years	Nutritionally adequate diet (Norm : 2400 calories per day)	Minimum levels of living (Norm : Rs. 21 per month in 1960-61 prices)
1957-58	53.10	74.10
1959-60	53.79	79.21
1960-61	47.89	69.82
1961-62	36.24	66.49
1963-64	38.98	64.36
1964-65	45.81	72.45
1969-70	48.63	73.98

44. Using the minimum levels of living as the norm, it can be seen also that close to 55 per cent of cultivator families, close to 90 per cent of agricultural labourers and 85 per cent of other workers in rural areas could be seen to be below the poverty line. As for the urban population, with reference to the nutritionally adequate diet norm, slightly over 45 per cent was below the poverty line in 1957-58. The proportion then declined and was around 33 per cent in the early sixties upto 1963-64, after that it went up to 42 per cent in 1964-65 but came down again to 38 per cent in 1969-70. With reference to the more comprehensive minimum levels of living norm, of course, the percentage of those below the poverty line was higher, a little over 70 per cent in 1957-58. But the time profile has been the same with the percentage coming down to 62 in 1963-64, going up to 67 in 1964-65 and to 72 in 1969-70. The main factor that emerges in the case of both rural and urban poverty is that it came down from the late fifties to mid-sixties and has been going up again after that, in a period that can be claimed to be one of growing prosperity, if one goes by the usual indicators of "growth".

45. In th light of all that has been said above, we must now ask what the main features of economic change in the state have been during the past quarter of a century. The following may be identified :

i) In terms of the conventional indicators of income and growth the performance of Tamil Nadu economy has been quite respectable. Agricultural output witnessed a phenomenal increase and in the industrial sphere, expansion, diversification and sophistication have been the main aspects of change.

ii) The changes that came about were achieved substantially within the given frame of the economy. In particular, it was noted that in spite of several radical land reform legislations enacted, there was no major change in the ownership or operational patterns of landholding.

iii) There have been major changes in production activities, mechanisation in agriculture including substantial increase in use of fertilisers, and the growth of a number of modern industries. We know also (although I have not referred to this point in the paper) that these changes were brought about through the active intervention of the state in the form of various kinds of concessions and subsidies.

iv) In terms of the welfare of the people at large, two very striking factors emerge (a) the growing affluence of the top income and asset groups (I have examined and documented only the rural sector; data necessary for the urban sector are not available) (b) The reduction in the real wages-of wage Learners in the rural areas as well as the increase in the proportion of the population below the poverty line, since the mid-sixties after an initial fall.

46. A deeper analysis of the performance of the past focussing on why things happened as they did is necessary if the record of the past is to become in any meaningful sense a guide to policy in the future. I shall not go into that aspect here except to point out that the absence of such an analysis and the tendency to concentrate solely on the merely technologicial aspects of production are among the major weaknesses of the planning processes we rely on.

Summary of Discussion

In the discussion of the paper at the Seminar held in the seminar room of the Institute on Friday, 27th January, 1978, under the chairmanship of Dr.T.S. Venkatasamy, Professor and Head of the Department of Economics, Presidency College, Madras, the chairman, in introducing the paper described it as interesting and provocative. But he observed that there is an apparent inconsistency in as much as the performance of the economy is described as respectable and in the same breath as a failure in respect of welfare because of the inequalities in income. The comment in the paper that the rate of growth of per capita income is low and hence it would require 47 years to double it requires further elucidation. Regarding progress of land redistribution in Tamil Nadu he stated that out of the estimated 1.2 lakhs acres of surplus land, the actual distribution covered only 31,000 acres. Besides the number of landless labourers stands at 44 lakhs and hence the policy of distribution has to be considered as a failure.

The author in presenting the paper said that the usual procedure was to base the review of the economy on the Tamil Nadu, Economic Appraisal of the year. But as this document was not available, the paper contains information about some aspects of the change in economy in the State, principally based on two studies namely (i) Economic Change in Tamil Nadu: A Regionally and Functionally Disaggregated Analysis (1960-70) and (ii) a study on changes in rural Tamil Nadu from 1950–75 which is nearing completion. The apparent contradiction between the respectable rate of growth of the economy at 3.2 per cent as computed by the Planning Commission and the per capita income is because the latter has decreased owing to the high rate of population growth. An analysis of the sectoral distribution of the Net Domestic Product shows that over the last 20 years, 1950-51 to 1970–71, the share of agriculture has dropped from over 52 per cent to a little over 40 per cent—industries and services having gained. As regards the labour force, the change in the definition of worker has meant a reduction in the workers' participation rate—that for men having fallen from 597 in 1961 to 560 in 1971 and for women from 313 to 151 for every 1000. The occupational distribution also shows significant changes with an increase in the proportion of agricultural labourers, paradoxically in a decade of rising industrialisation. Another notable feature is the shift from the organised sector to the unorganised sector. A comparison of the area of land owned by different classes during the period from 1959–60 to 1971–72, indicates a small shift–from the biggest owners to the smallest. In respect of assets distribution in the country two studies by the RBI show that although households holding assets worth less than Rs. 500/- have decreased from 29.5 per cent to 25.5 per cent, the aggregate share of assets held have gone down from 1.2 to 0.9 per cent, the top group holding assets worth Rs. 20,000/- and above has increased from 5.3 to 8.2 per cent and its share of assets has risen from 43.3 to 60.5 per cent. In Tamil Nadu the trend is similar and the concentration, of assets in the hands of the wealthiest group shows a marked increase their relative share having increased while that of the first nine deciles taken together has deteriorated. Basic data about performance of agriculture in the last 25 years reveal that the two wet crops paddy and sugarcane have improved their position, while the dry crops specially millets have lost ground. There has been an impressive change from traditional implements to modern mechanised ones in agriculture in Tamil Nadu. There is also a link between improved irrigation and greater use of modern implements—the growth of irrigation by pumpsets being mostly in private, irrigation. Discussing the growth of industries, the author observed that there has been growth and sophistication despite a weak resource base. There has also been geographical localisation mainly around the city of Madras. There has been almost a doubling of wages in all sectors, but in real terms the income has gone down. The wage earners in the rural area, however, have not benefitted. To identify the major trends in economic change, there has been phenomenal increase in agricultural output brought about by adoption of modern technologies and active State assistance; growth, sophistication and diversification in the industrial sector and no major change in ownership or operational patterns of land holding. In terms of welfare, there is growing affluence of the highest income and asset groups, reduction in real wages and an increase in the number of people living below the poverty line.

During the discussion of the paper, it was observed that concentration on the HYV programme had led to a neglect of dry farming. Greater attention was called for in this area. As the paper is a disaggregated analysis of the state economy, indicators such as GNP and per capita income are not applicable. There could have been a clearer exposition of wages and industrial structure. The only other similar study is that of Kerala by the Centre of Development Studies, Trivandrum. A comparison shows that while in Kerala there is a deficit of food grains, Tamil Nadu is food surplus state. However, Kerala has a distribution system extending to all the villages and has completed the first stage of land reform ; In Tamil Nadu, though the minimum wage legislation has been accepted, the real wages are still much lower. In terms of consumer expenditure, Tamil Nadu ranks the lowest in urban and the second lowest in rural consumer expenditure amongst the states. The statistical approach so far has not included the totality of the levels of living. The Kerala Study's starting point—social justice—should provide us with the conceptual frame for evolving meaningful indicators to serve as levers of development. Indicators for poverty measurement shown in the paper are the nutritional norm and the minimum levels of living which give two divergent figures. It was pointed out that the nutritional norm covers only the diet expenditure. Other apparent variations are the differences in the State, district and taluq figures. If statistics are to reflect reality and be of greater usefulness to the planning process, there should be more micro-studies and interstate comparisons.

Role of Heavy Industries in Economic Growth*

Base Propositions :

Based on studies of the economic growth of a wide range of countries, I recently made two statements which are relevant to this discussion. The first is that there is no way that an economy can develop at a satisfactory rate without rapid industrialisation. The second is that in that process of industrialisation, heavy industry must grow more rapidly than medium and small industry. [1] The latest United Nations study by Wassily Leontief on the World Economy supports these propositions even more sharply in quantifying the growth rates of heavy industry for the economic growth of India and other developing countries. [2]

I have used the term heavy industry, a term whose definition varies rather widely. It could be used to refer to industries with forward linkages, which is so broad a definition that it would bring in all farming under the ambit of heavy industry. It could be used in a simple bureaucratic sense to refer to the 16 groups of industries which are the composants of the Department of Heavy Industry of the Ministry of Industrial Development. I use the term heavy industry to refer to the group of manufacturing industries with a high Incremental Capital Output Ratio (ICOR), with a cut off point at 4. This would bring under the heavy industry class all *capital goods industries whose ICOR in* 1973–74 is 4.5840 and intermediate goods industries whose ICOR is 4.4151. For consumer goods industries and agriculture and related occupations, it ranges from 3.2737 to 1.6194. [3] From this point of view, the usual listing of the 100 largest companies in the country, that is, those with a paid up capital of Rs. 2 crores and above (the highest being Hindustan Steel with a capital of Rs. 623.58 crores), except for 14 companies, falls in this categorisation of heavy industry. [4] In this sense the terms

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*Extracts from Paper by Dr. Malcolm S. Adiseshiah for Capital Calcutta 22nd November 1977.

1. Malcolm S. Adiseshiah: A Mid-Year Review of the Economy—1977 p. 3 Associated Chambers of Commerce and Industry of India, New Delhi 1977.
2. United Nations: The future of the world Economy. pp 8 and 34–37, New York 1977.
3. Hashim S.R. and M.M: Capital—Output Relations in Indian Manufacturing 1973 *Table* TV 1–6
4. IIPO: Monthly Commentary Vol.XVIII No.4 Blue Supplement November 1976. Quarterly Economic Report Vol.XXI No.4 Supplement. July/October 1975.

   RBI: Bulletin July 1976 pp. 439-493.

heavy industry and big industries in this country may be used as rough synonyms.

Big Industries' Role :

There is a lead role that big industries have in economic growth, particularly industries concerned with machinery and equipment (comprising transportation equipment, metal products, machinery, electrical machinery and equipment) and materials (consisting of motor vehicles, petroleum refining, primary metals, wood and cork, rubber, industrial chemicals, fertilisers, other chemicals, cement and glass). This is because to start from the simple and obvious reasons to the more complex ones, the development of big industries makes possible the economies of scale and lower product prices as in the case of fertilisers, cement, paper, diversifies the industrial establishment and expands the exports market of the country as in the case of engineering goods, provides large and continuing demand and/or inputs to ancillary and subsidiary and other related industries as in the case of BHEL, Hindustan Steel and TISCO and Fertiliser plants and to a lesser extent the other integrated steel plants, develops and strengthens the production capacity of basic raw materials as in the case of coal, iron ore and nonferrous metals through Coal India, MMTC, Hindustan Zinc, BALCO etc., and produces a wide range of equipments and capital goods which makes possible the development and expansion of intermediate and consumer goods, notably the essential consumer goods. Today the ratio of output capital and intermediate goods to total output is two thirds (increasing from one third in the early fifties). There are certain goods—such as those produced by TELCO, HEC or any of the refineries—where scientific know-how and technology call for large scale operations because what is involved is bringing together, and establishing a mix, coordinating and controlling large masses of men and resources.

While referring to the role of big industries in the country, perspective demands that it be made clear that the bigness in question is relative, relative to our economy and resources in India. Taking the year 1975-76, our biggest company, is Hindustan Steel with Rs. 1,266.49 crores of assets and Rs. 811.05 crores in sales, while in the US the biggest company is Exxon with Rs. 32,066 crores of assets and Rs. 32,066 crores as sales. The first private company in our traditional listing is TISCO with Rs. 216.27 crores as assets and Rs. 271.93 crores as sales—standing 10th, while the 100th. US company has assets of Rs. 1,794 crores, which is higher than our first company and their 500th has assets of Rs. 247 crores, which is higher than our fifteenth, Indian Petro Chemicals, and way above our 100th with Rs. 4.53 crores as assets and Rs. 88.46 crores as sales. The moral of this inter-country comparison, in regard to bigness, however, is that in addition to the specific contribution of big industries to economic growth referred to earlier, there are the operational advantages that the big company makes available; heavier investment in research and development, surveying and meeting more closely the market demand, better use of imported or indigenous technology and the attainment of production standards of international comparability and competitiveness. There is also continuing improved efficiency in the use of the scarce factor capital by the big companies seen in such indicators as the public sector using in 1974-75 3 times per unit of sales compared to the private sector units, whereas in the previous year it was four times that of the private sector. Another indicator is the slow but steady decline in the ICOR of big companies seen in the review of the 100 largest companies.

Some Conditions and Pre-conditions :

The develepment of big industries calls for larger investments involving a decline in the share of personal consumption in total final use and an increase in the ratio as between intermediate and final products. Here the Indian performance has been a mixed one. Gross fixed capital formation has been more or less stationary over the past twenty years at 14-16 per cent of GNP. The rate of development of big industries and their contribution to economic growth at a rate of 5 to 6 per cent which is needed to eradicate destitution in the country within 10 years, call for the annual gross fixed capital formation rising to 25 per cent of GNP—which is a near doubling of the present percentage. What is particularly disturbing is that the gross capital formation of the public sector which was rising upto the end of the Third Plan (from a quarter of the total in 1950-57 to a half) has since been declining, when the private sector's contribution is Rs. 4,455 crores, while that of the public sector is Rs. 3,604 crores—a poor ratio of 57 : 43. [5] On the other hand, and in a complementary sense, there has been no decrease in the share of final consumption of households and government sector taken together over the 10 year period. It was 80 per cent of GNP in 1960-61, it was the same in 1971-72. Only private final consumption declined from 79 per cent to 76 per cent, while government consumption increased from 7 to 10 per cent. The Reserve Bank computes private final consumption at 81.5 per cent of GNP in 1975-76. [6] What is needed is to move towards a target of 70 per cent of GNP for both public and private final consumption to provide the savings base for big industries to play their role in the economic growth of the country. This tightening has to come from the well-to-do and the 40 per cent living above the poverty line. The record with regard to savings is somewhat similar. Using again NSS sources—and not RBI estimates which at 14.7 per cent for 1975-76 seem much too generous and optimistic—net domestic savings in 1972-73 stands at 11 per cent of GNP. Here again the big industries and their role in economic growth demand a more than doubling of the savings percentage. Even this 11 per cent savings computation raises questions. The household sector provides 80.5 per cent of the savings and this is not only to extent of 50 per cent in physical assets not being available for investment in industry or agriculture, it is also a guess estimate. The balance is shared between the public sector 15.8 per cent and private sector (3.7 per cent) which are at an abysmally low level. Despite the growth of industries in the country, they are contributing only 2 per cent of GNP in savings. In other industrialised countries, the major part of net savings comes from this sector and that is what we should move forward to in India.

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5. CSO National Accounts Statistics: 1960-61—1972-73 January 1973.

6. RBI Bulletin March 1977 pp. 249-256.

Performance :

The performance of the big companies during the fifth plan has also been a mixed one. From the macro point of view there has been an average 3 per cent increase per annum in the value of their output during 1969-70—1972-73, from Rs. 7,000 crores to Rs. 10,000 crores. There have been in particular impressive increases in the production of the following industries as between 1951 and 1974. Petroleum and coal products from 2.5 lakh tonnes to 194 lakh tonnes (7,660 per cent increase), Non-electrical machinery, particularly machine tools from Rs. 47 lakhs to 89.40 crores (18,921 per cent increase), Electrical machinery, particularly power transformers from 2.0 lakh KVA to 17.9 lakh KVA (4,370 per cent increase), Chemicals particularly fertilisers from 10,800 tonnes to 1.1 million tonnes (10,946 per cent increase), Basic metals particularly aluminum from 3,800 tonnes to 1.28 lakh tonnes (3,292 per cent), Finished Steel from 1.1 million tonnes to 4.9 million tonnes (345 percent increase) and so on. Value added in 1970, for instance, was a high Rs. 2,450 crores for the private sector and Rs. 640 crores for the public sector.[7] The largest annual income generators are textiles (Rs. 811 crores), chemicals (Rs. 561 crores), electricity (Rs. 434 crores), food manufacturing (Rs. 421 crores), basic metals (Rs. 418 crores) and non-electrical machinery (Rs. 293 crores), electrical machinery and appliances (Rs. 246 crores) and transport equipment (Rs. 245 crores).[8] Against this positive big industry performance must be set the record that in 1976-77, 56 per cent of the companies in the private sector operated at a loss and 65 per cent of 724 companies either did not declare a dividends or lowered their dividends compared to 1975-76.[9] The Reserve Bank survey of 385 big companies performance in 1975-76 shows that these lower rates of profits and dividends are due to a sharp decline in rates of growth in sales, value of production, total income, gross and net capital formation rates, increase in the debtequity ratios and high dependence on external sources of finance.[10] For the big companies to return to their earlier performance as growth contributors, there is need for action on the endogenous and exogenous fronts. The endogenous action includes modernised managerial reform, increase in investment and net capital formation, creation of new or additional capacity and in the case of the few sick units among the big companies, use of the soft loan window of IDBI to modernise and diversify production. The exogenous action includes planning and increasing power generation, reviewing the price and subsidy policy for particular capital goods and materials products, lowering the rate of interest on bank loans and using the foreign exchange reserves to import industrial raw materials, machinery and components that big industry needs.

7. Annual Survey of Industries 1970, Census Sector 1976.

8. Commerce Research Bureau : Basic Statistics relating to the Indian Economy. October 1975.

9. Economic Times June 2, 1977.

10. RBI Bulletin March 1977 : Supplement : Finances of large public limited companies.

The debate :

I conclude with some thoughts on the debate which has been opened in the country as to the role of big industries in regard to the new national priorities of (a) ending destitution in 10 years and its accompaniment of *antyodya*, which involve among other things, the mass production of essential goods defined as cereals, edible oils, cloth, sugar, kerosene, (b) providing employment to the 22 million person years at present unemployed (of whom 19 million person years are in the rural areas) plus the 5 million who are added to our work-force every year, and (c) the Gandhian values of austerity. The main issue under debate is the extent to which big industry can generate employment in this labour plentiful country. On this, it should be admitted that big industries have a decisive role in promoting economic growth but have no role in generating massive employment. And that is what is needed in a country with a work-force of 260 million, of whom all factories employ only 5.7 million and who are part of the 20 million employed in the entire organised sector of the country.[11] For every Rs. 1.00 lakh invested, agriculture and related occupations provide 10,000 man years of employment, cottage industries, 2,000 man years of employment, small industries 20-25 man years of employment and big industries 1 man year of employment.[11] Hence from the point of view of generating employment, it looks as if big industries have to take a low seat. A similar analysis of big industries also appears in relation to the objectives of generating incomes, producing mass consumption goods and ending destitution. At this point there is need to revert to the distinction between heavy industry and big industry with which this note started. It is not big industries which are not employment intensive or productive of rising incomes. It is heavy industries which are the capital and intermediate goods producing units (steel, coal, non-ferrous metals, cement, fertilisers, machinery) with an ICOR of about 4 and whose imperative for the economic growth and development of a country is that without the output of these industries, our industries producing mass-consumption goods including agriculture will face various input bottlenecks. So for the attainment of the objective of eradication of destitution in our vast country, heavy industry is needed. Where we have suffered some distortion is not in falsifying the basic premise that heavy industry, though it reduces in the short run the total output will through increase in the proportion of capital goods make for faster growth and income and consumption in the next period, but in there not having been established a supply and demand balance for the products of heavy industry. The reason for this is simply stated by the Planning Commission: "if the pattern of output capacity is changed in favour of investment goods, but there is no corresponding change in the structure of gross national expenditure in favour of investment outlay, the economy would

11. Malcolm S. Adiseshiah: Small Industries in the Fifth Plan. MIDS Bulletin Vol.II No.11.

experience underutilisation of capacity in the industries producing investment goods and strong inflationary pressure in respect of the consumer goods sectors".[12] This means that heavy industry investment and development in the country calls for a considered increase in the rate of savings, gross and net capital formation, and reduction of final consumption as a matter of priority, as pointed out earlier. Along side of this effort for stepped up resource mobilisation, there is need for increased and fuller use of capacity of both heavy industry and big industries, similar to what has been developing in the 16 industrial groups under the direction of the Department of Heavy Industry in order to ensure an increased marginal efficiency in the use of capital invested. For providing increased employment simultaneously with an increased flow of goods of mass consumption, the non-capital non-intermediate goods big industries whose ICOR as noted earlier is low and fresh investments in the development of small and marginal farmers agencies, cottage and small industries, housing, drinking water, major, minor and medium irrigation and social services need to be undertaken as an integrated programme. The integrated nature of such a programme which will meet simultaneously the growth need for capital and intermediate goods, massive generation of employment and incomes and hence demand expansion involve some switching of the capital goods produced as more adequate input for the employment generating consumption goods producing industries and occupations including particularly agriculture, a more equitable distribution of assets and factor ownerships including scientific and managerial know-how and expertise, replacing the import substitution criteria in regard to industrial development by the comparative cost advantage principle and the related technology in relation to our factor availabilities, and a rational and rationalised linkage not only between our primary, secondary and tertiary sectors, but between large, medium and small industry including farming, and the resulting product mix.

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12. Planning Commission : Draft Fifth Five Year Plan 1974-79 Vol.I p.11.

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