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EDITORIAL—SOME HIGHLIGHTS

I. General Economic Scene

State :

Fifth Plan and Fiscal: As part of the exercises leading to the restructuring and finalising of the Fifth Plan, referred to in the last issue (pp. 367-368), the Union Planning Commission and the State government authorities have consulted on the State Plan revisions. In this case it is not so much an exercise in revision as return to original targets which had been cut back in the first 2 years due to financial constraints. Now it was agreed that agricultural and power sector should be expanded to the optimum possible. During the balance of the State Fifth Plan the revised target would be 13 additional lakh tonnes for production of food-grains, 35 lakh tonnes of sugarcane and 2 lakh tonnes oil seeds, along with adding 80,000 hectares to be covered by HYV and 1.7 lakh hectares by minor irrigation. In the power sector, the original target outlay of Rs. 341 crores is restored, which means that in the balance of the 2 years there will be an investment of Rs. 160 crores plus that in rural electrification. On the fiscal front, in the last issue (p. 363) the improving fiscal situation was, inter alia, attributed to better tax collection and anti-evasion action. The government reports a 12 per cent increase in commer-

cial tax collection at Rs. 102.76 crores for the period February 1-June 30 compared Rs. 91.76 crores for that period of last year. During this period 32,408 shops were inspected and 7,853 cases of evasion detected and 18,466 inspections of cinemas resulted in identifying 2,494 cases of tax evasion. The government is undertaking a comparative study of tax rates in Tamil Nadu and its neighbouring States in regard to consumer durables, in order to bring about a certain harmony in the inter-State rates and avoid the tendency of certain trades like automobile parts and electronics to move out of the State because of the higher rates in this State. In this regard the data processing system in use will provide the basis for tax policy, bringing out the commodity wise tax return and the collection trends. The State Planning Commission has just completed a study on the taxable capacity of Tamil Nadu, showing scope for increasing tax collections in the State. For the next few years, it concludes that the major source will be indirect taxes, except that there is a scope of increased taxing of the agricultural sector, which the State government should turn to. The total tax collected in the State by the Union and State governments in 1971-72 was Rs. 45.73 lakhs which was 16.09 per cent of the State income, compared to 26.64

per cent in Maharashtra and 4 per cent in Jammu and Kashmir. The per capita tax paid in the State is Rs. 110—being the third highest and the rates of per capita tax to per capita income is 0.16, being the second highest in India. This is a first study which can be further refined when the results of its next study, the incidence of taxation of Tamil Nadu, is completed.

Drought and Prices : Drought conditions worsened in 10 districts of the State with the failure of the North East Monsoon for the second successive year and the delay in the onset of the South West Monsoon involving 4,131 villages and 10,000 hamlets. The delayed South West Monsoon has lowered water levels in the hydel reservoirs and the irrigation systems. Pechiparai had 3 feet of water against last year's 24 feet and Perunarani no water compared to the 50 feet at this time last year. After long delay, despite it being only 63 feet, the Mettur waters were finally let on July 24, restricting the flows only to the Cauvery and Vennar divisions along with a turn system under which the Cauvery sector will get water for the five days and the Vennar sector for the next five days. 15,000 cusecs is being let out, of which 10,000 cusecs are available at the grand anicut points and the rest for the ayacut. In the Kanyakumari district, in the Agastheewaram and Thovalai taluks crops were reported in mid July to be withering. Karnataka and Kerala share the distress in this delay of the South West Monsoon, and efforts are underway to grow more dry crops such as ragi, maize and pulses in the dry Karnataka areas and more intensive agricultural practices in the non-drought areas of Kerala. Meanwhile the government is acting rapidly on drought relief action. Of the 6,300 bore-wells planned by Septem-

ber, 3,200 were operating in July. 13 more rigs have been purchased. In the Tirunelveli district a Rs. 48 lakh programme is effectively being implemented—Rs. 4 lakhs for afforestation, Rs. 5 lakhs for contour bunding and percolation tanks, Rs. 15 lakhs for minor irrigation and Rs. 10 lakhs for SMIP. Partly because of the delay in the South West Monsoon, prices began to rise in the State. In July prices of vegetables in Madras city rose by near 100 per cent, prices of meat, fish and eggs rose by 30 per cent groundnut oil by 60 per cent with similar rises in pulses, tamarind, jeera, gur and sugar. Only rice price did not rise. The State government, as part of an all India drive, is taking action to bring prices down. Reflecting the cut in DA, all public sector undertakings are bringing their prices down, as for instance Hindustan Photo Films and HMT by 2½ per cent. The government has set up a Central monitoring cell to watch on a daily basis the availability and distribution of essential commodities and stocks are rushed to distribution points wherever there is a rising trend. In mid July the Police launched a groundnut oil dehoarding drive bringing into the market Rs. 30 lakh worth of oil in Coimbatore, Dharmapuri and Salem, after the agreement with the trade to reduce the price from Rs. 6.50 to Rs. 6 a kilo was not kept. Similarly the government has negotiated the price of firewood with the trade reducing it from Rs. 6.50 to Rs. 6 per 25 kg. The large rice stock with the government has prevented rice prices from rising and when they did as in Madurai by 40 paise per kg., stocks were released which brought the price down. The prices of wheat products, Suji, Maida and atta were reduced by 11 to 49 per cent from August 1, through reducing the issue price of wheat to roller flour mills

from Rs. 150 to Rs. 130 per quintal. The overheads of the Civil Supplies Department have been reduced and so its costing structure reduced.

Water : Discussions between Kerala and Tamil Nadu government officers on the better utilisation of the West flowing rivers to the mutual advantage of the two States were begun in July. Simultaneously the irrigation officials of Tamil Nadu, Andhra Pradesh, Karnataka and Maharashtra had two discussion rounds in July on bringing the 15 tmc of Krishna waters to Madras city. Tamil Nadu officials are to make cost studies on the alternative methods—open channel vrs closed conduit—of bringing the water from agreed feasible points. In Madras Rs. 89 lakhs are to be spent for replacing the choked up water mains, starting with renewal of the defective 34 km. pipeline in 24 streets at a cost of Rs. 45 lakhs. This is also part of the MMDA plan which involves putting up 4 major sewage plants at Nesapakkam, Koyambedu, Pallikaranai and Kodungayur for processing sewage water and making them fit for reuse on gross farms. Nesapakkam is about complete and when all 4 are complete by 1977-78, they will treat 50 to 60 million gallons a day, with no discharge into the sea.

Power : Given the late appearance, if not failure, of the South West Monsoon leaving the Hydel reservoirs at low levels and with Kerala continuing its power cut till July 24, and not being able to sell power to this State, the government announced that as from July 26, a 30 per cent power cut on power supply to all industrial and commercial services, and a 25 per cent cut on essential services and newspapers. While the existing grouping arrangements will continue for them there

will be no cut on the agriculturalists, and no cut on LT industrial and commercial services upto 250 units consumed. Advertisement and display lighting will be stopped and an appeal has been made to make the fullest use of diesel generators. Pondicherry has followed imposing a cut of 30 per cent of low and high tension units from July 26. Neyveli continued to do well, its power generation crossing the 322 million unit mark in June, feeding the State grid beyond its contractual obligation. For the quarter ending June 30, it exported to the State grid 97 million units, which was 40 per cent of the State summer requirement. Apart from this precautionary step to save our power resources, the government of India's DGTD has set forth a six point plan for implementing improved power management in Tamil Nadu, involving treating the 4 Southern States as one inter-dependent group, with this State not relying so heavily on Kerala, which at the time of breakdown of Idikki (see Vol. VI p. 304) and the failure of the South West Monsoon has not been able to help Tamil Nadu. The 6 point plan proposed provides: (a) accelerated development of hydro resources independent of irrigation tie ups, making possible development of 10,000 MW between Tamil Nadu, Karnataka and Kerala using the water now going waste in Western ghats; (b) Maximising coal and lignite output by opening new mines by 1980; (c) improved coal distribution and use of captive power generation by steam users, doubling rail tracks and using shipping for coal transport, upgrading coal at source through washeries, and conversion of coal to slurry for pipe transport; (d) agriculturalists to use direct motive power and not electricity and small units to use gas turbines power; (e) nuclear power by 1985 to stabilise all hydro-thermal imbalances;

and (f) treating power generation as a primary service industry and not a source of employment. Built within this plan should be a contingency plan to meet a crisis, like that of the present, under which consumers will know what each is to do, bringing into use every source of auxiliary and spare power, shutting down power intensive loads in a phased manner, staggering working hours and holidays and using a low percentage cut throughout the year. TNEB's finances have recorded sharp improvement. The balance sheets for 1972-73, 1973-74 and 1974-75 have been finalised, two of them audited, the overdues and collection rate speeded up so that they are now current, and the 1975-76 accounts which show a revenue of Rs. 170 crores and which involves the Board no longer being in deficit but earning a surplus to meet the depreciation reserve, general reserve and interest charges on the Rs. 270 crores standing loans—represent a creditable development.

During July, for the country as a whole, the power situation was normal except in Maharashtra (where by mid July the monsoons made possible the lifting of power cuts), Karnataka, Kerala, West Bengal, North East region and Madhya Pradesh. The Union ministry has fixed this year's thermal power target at 67,566 million kwh compared to 46,670 million kwh in 1975-76. The ministry has also set up a national load despatch centre at Delhi to co-ordinate, supervise and control the operation of an all India power grid. For an integrated operation of the power systems, regional load despatch centres are being set up at Delhi, Bombay, Bangalore, Calcutta and Shillong. The 2 day conference of State power ministers meeting at the end of July in Delhi approved a monitoring system to prevent

execution delay and slippages, a new capacity target of 2,006 MW for 1976-77, a plan to raise power capacity by 8,530 MW during the last 3 years of the Fifth Plan against the 3,500 MW attained in the first 2 years, and a number of decisions to improve supply and reduce line losses, costs of generation and overheads. In view of capital intensive nature of power projects and the uneven distribution of hydel and thermal resources, there was agreement on a regional approach to power planning and a partnership in execution. For the South this is imperative.

Urban Land Tax, Backward District Status: The revenue from the urban land tax will be Rs. 6 crores against Rs. 2.2 crores last year. This is due to 25 per cent increase in the number of assesses from 70,000 to one lakh in the five urban centres of Madras, Coimbatore, Salem, Madurai and Tiruchirapalli where the Act applies, the increase in the rates from 0.7—1 per cent to 0.7—2.5 per cent, and the updating of the market value of land by specially appointed assesses. There is a certain amount of confusion about these changes but the increased revenue is certain. Madurai district has put forward its claim to be classed as an industrially backward district as a consequence of which it should be eligible for various benefits and concessions accruing to investments in backward areas. These claims are being examined by the State Government.

Transport: On the railway front a new tri-weekly super-express between Madras and New Delhi will operate from August 7, taking 30 hours instead of the usual 50 hours. Similarly the

Madras-Vijayawada railway electrification scheme has now received the green light and will be completed by 1978-79. The project for a tube railway for Madras has not been scrapped but under study by an MMDA working group along with a study of the mass rapid transport system. A mechanical conveyer to speed up the transfer of some 2,000 bags per day from the Madras Central station to Park Postal sorting office is being built at a cost of Rs. 2 lakhs to reduce transshipment time and labour. Southern Railway is planning to introduce flat trucks capable of conveying international container cargoes from Cochin to internal points, and from there to the port where they are hoisted on the ship. There is now need for container terminals to be established at the main centres. With regard to airport development, an international cargo complex, providing for examination and storage space for air cargo and office accommodation for government agencies like customs, ministry of commerce, air lines cargo agents, and RBI is being developed in the Meenambakkam airport, as in Bombay, Delhi and Calcutta. The Meenambakkam complex will be inaugurated in January/ March. The expansion of the airport facilities is however held up by the fact that Madras is the least paying of the four airports, and till the Union government allows more international landing rights, the airport will not be financially viable.

National:

Fifth Plan and the Economy: By the end of July, the Fifth Plan was finalised along lines outlined in the last issue (p 368). The total Plan outlay is in Rupee terms untouched,

but its distribution between different sectors reflects the priorities of the government. The other issue which will differ from the original allocation is the central assistance to the States, wherein the first two years saw rather heavy reductions in central assistance to all States, with varying effects on each of them and a serious one for some of them. On the economy, the Union government reports a growth rate of 6.5 per cent during 1975-76 because of the operation of the 20 point programme. Between July 1975 and March 1976 wholesale prices fell by 8.5 per cent, consumer prices for industrial workers by 12.8 per cent and price for agricultural workers by 25.6 per cent. In the year 1975-76, agricultural production increased by 8 per cent (against a decline of 3.1 per cent during the previous year) and industrial production by 5.7 per cent (double that of the preceding year and over 10 per cent since January). Food production is now put at 118 million tonnes plus 14 million tonnes of tubers, 10 million tonnes of oilseeds compared to previous year's 8.4 million tonnes.

Prices and Anti-inflation: There was a sharp upward movement in prices in June. The official wholesale index for the week ending June 26 stood at 301.7 against 296.9 for the week earlier. The monthly average for June was higher than the monthly average for May by 1.3 per cent. Food prices increased from 324 in June 19 to 331 in June 26, due to increase in the price of groundnut oil (+ 12 per cent), fish (+ 11 per cent), mustard oil (+ 9 per cent), turmeric (+ 8 per cent), bajra and khandasari (+ 7 per cent each) and so too all other food

articles. There was the 12 point rise in the fuel, power, light and lubricants group, and castor oil prices shot up by +11 per cent during the week. Industrial raw materials showed the biggest rise from 284.2 in the previous week to 297.2 for the week ending June 26, due to increase in prices of castor seed (+ 20 per cent), rape seed (10 per cent), linseed (9 per cent), groundnut and gingelly (8 per cent) raw cotton (+ 6 per cent). Intermediate products increased by 1.7 per cent, linseed oil and cotton yarn increasing by + 16 per cent and + 6 per cent respectively, and the manufacturers group rising by 0.3 per cent from 257.2 to 258. With the marked and persistent rise in prices, the Union government took anti-inflation action during July: (a) the States were instructed to ensure strict discipline in foodgrains trade and to use DIR, MISA and the Essential Commodities Act against hoarders, profiteers and speculators to prevent stockpiling and speculation in essential commodities; (b) the public sector began to take over hoarded stock as noted in the case of groundnut oil in this State and distribute them through fair shops; (c) increased release of sugar which for July was 2.95 lakh tonnes; (d) the removal of informal restrictions on movement of groundnut oil in some States and the stopping of the export of groundnuts from July 14, resulting in cancelling of 2,800 tonnes exports; (e) massive import by STC of edible oils to meet the needs of the Vanaspati industry, which is required to take 50 per cent of its total oil needs from the imported stock to relieve pressure on the limited indigenous groundnut oil; (f) removal of import duty on edible oil from August 1; (g) exports of onions and potatoes were stopped and stocks of the two vegetables released by the National Agricultural Marketing Fede-

ration: (h) the reduction in the price of cotton yarn by voluntary pegging by the trade of the margin at 2 per cent; (i) tight credit controls against bank advances against cotton and kapas (by the RBI) to counter the sharp rise in the price of raw cotton, along with punitive action by the textile commissioner against stock holding and further imports of Egyptian and Sudanese cotton; (j) continued restraint in credit supply and money supply with the public, in order to counter the trend of increased rate in money supply for the first quarter (7.4 per cent) outrunning both that of the first quarter of 1975-76 (5.5 per cent), and that of wholesale prices which during the period rose by 4 per cent. These measures had an immediate effect in bringing down prices of sugar (10 per cent), edible oils (8.9 per cent), pulses (12-16 per cent) and cereals (10-16 per cent), during the closing weeks of July. On the other hand there were some upward trends in prices. The agricultural prices commission has recommended a price increase of Rs. 10 per quintal for kapas, with similar rises in the prices of other varieties of cotton. The restrictions on declaration and payment of dividends imposed under the companies (Temporary Restrictions on Dividends Act 1974 (see Vol IV p. 532), ceased to operate from July 6 and so additional funds are now flowing into both investment and private channels. The first instalment of impounded DA was repaid to 14 million government employees in July, amounting to Rs. 200 crores. The government reports that the response to the government appeal to the employees for depositing a part of the impounded dearness allowance in small savings was encouraging. 20-25% of the payments are going into such savings which have increased from Rs. 326 crores in 1974-75 to Rs. 411 crores in 1975-76. To keep prices under control on a long term basis, the Union

government has under consideration a separate ministry to look after the welfare and protection of consumers. It is likely to start as a Department under the Civil Supplies Ministry, which could be developed as a full fledged and separate ministry. Another such long term measure to ensure quality, consumer consciousness and a buyers market, is the decision by government to require the compulsory certification of a number of items by ISI. These range from ophthalmic glasses to gas cylinders and stores, infant foods, food products, chemicals, etc. Also on the fiscal side, the Union government opened on July 1 (and closed the same day), 3 Central loans for Rs. 475 crores which were fully subscribed, and gave the government the additional 10 per cent it was entitled to. The government also appointed a 7 man committee on indirect taxation in order to rationalise the overlapping systems of State and Central taxation and recommend a buoyant efficient system which will still safeguard State finances.

Public Sector performance: Public sector units continued to perform well in May and June. In May, the units under the Department of Industrial Development recorded a 52.19 per cent increase compared to May 1975 at Rs. 5,614 crores, and in June produced Rs. 10.1 crores against a target of Rs. 9.7 crores, which was 57.77 per cent higher than the June 1975 production. The outstanding performers are: the Cement Corporation of India, the Hindustan Photo Films, Instrumentation Limited, Hindustan Cables and NEPA. Thus during the first three months of the fiscal year April to June 1976, the production of all units increased by 55.66 per cent at Rs. 26.5 crores, being 95.63 per cent of target figure. The public sector units are thus

emerging as pace-setters, earning a profit of Rs. 350 crores in 1975-76, generating internal resources for their growth and development and reducing their prices. An official review concludes that the key enterprises in steel, coal, heavy engineering, petroleum, machine building, non-ferrous metals and fertilisers made a major contribution in attaining the 6.5 per cent of the growth of the economy referred to earlier. 30 units including Hindustan Zinc, BHEL, ITT, HPF, Hindustan Insecticides have exceeded their capacity and 30 others improved their performance and were operating at over 75 per cent capacity. All of them operate shop councils and joint management councils.

National Production Front:

Steel: The annual report of the public sector plants for 1975-76 showed a profit of Rs. 44 crores, with Bhilai at Rs. 28.22 crores and Rourkela at Rs. 28.33 crores. For the year, saleable steel production was a record 5.778 million tonnes, capacity utilisation was 82.6 per cent compared to 68.3 per cent in 1974-75, and steel imports reduced to Rs.71 crores against Rs. 346 in 1974-75. Exports, on the other hand, shot up from Rs.18.63 crores in 1974-75 to Rs.114 crores. For the current year 1975-76, SAIL forecasts an export of 2.5 million tonnes at Rs. 250 crores. In April-June 1975 exports totalled 3 lakh tonnes at Rs. 80 crores. During this period, production at the integrated steel plants exceeded the target at 15.5 lakh tonnes, a 34.3 per cent increase over the first quarter of 1975-76. TISCO reports improved production of iron from 1.33 lakh tonnes in May to 1.46 lakh tonnes in June, and of saleable steel from 1.13 lakh tonnes to 1.19 lakh tonnes. Rourkela also reports a doubling of its saleable steel production from 1.7 lakh tonnes in

April-June 1975 to 2.56 lakh tonnes in April-June 1976. Durgapur reports using a new technological process in its melting shop which will meet the country's need for axle steel for wheel and axle plant uninterruptedly. JRD Tata called in July for an all round increase in steel prices both to bring internal prices on par with international prices, and to meet the increased cost of inputs which has not been attempted for over 4 years now. The government's response is to negate such an all round increase because of recessionary conditions in the building industry, but to allow selective increases in prices of certain categories—such as the prices of wheels and axles produced at Durgapur, which are to be raised for the railways, as the current prices do not cover the input cost of the plant. There is a case for a review of costs and prices for all categories of steel and an upward adjustment of prices which the government should face. In July, the President issued an ordinance taking over IISCO, making it a government company and paying compensation to the shareholders. The government will now put into effect its plan for the restructuration of the company which, since its management takeover in 1972 (see Vol. II No. 9 p. 10), has begun to show an improved production profile.

Crude : On July 15 the first tank load of crude from Bombay High was pumped into the pipelines of Bombay Bharat Refineries and so the 10,000 barrels per day being produced by the 2 wells with one more well completed and connected to the production platform will increase further the country's indigenous oil supply. At the same time the programme for onshore drilling is being intensified. The total oil production from the Eastern region is now 3.1 million tonnes by Oil

India and 1.2 million tonnes by ONGC. ONGC is able to increase its production by one million tonnes in 1977 and another million tonnes in 1978, if the funds are given to it for quick drilling of real developmental wells, avoiding the large number of uneconomic oil bowls which are scattered over this region. Oil India has revised its forecast that it can maintain its production of 3.1 million tonnes till 1990 and not as originally forecast till 1980. This should make possible development of refining capacity in this region. The new areas where ONGC has decided to penetrate in search of hydro carbons include the northern region of the Vindhyas, the foredeeps of the Himalayas, some parts of the Gangetic plain from Bihar to Jammu. In addition, ONGC is planning to drill off the sea coast of Orissa, Andhra Pradesh—the Godavari and Mahanadi basins. To speed up exploration, ONGC has placed orders for 13 modern rigs which can go to a depth of 4,000 to 6,000 metres. In this connection, the Union minister has stated that the ministry will engage foreign contract drillers for carrying out exploratory drilling for oil with "heli rigs" that is drilling rigs transported by helicopters. They are expensive and will be used on a daily rate, but in some places as in Tripura less expensive than providing the entire infrastructure of roads, sidings, culverts and bridges. For this year, the ministry has requested an additional allocation for onshore drilling of Rs. 10 crore over the Rs. 110 crore allotted and so too for the following year has requested that the allocation be increased from Rs. 180 crores to Rs. 240 crores. A draft plan to restructure the oil industry into four regional companies with integrated refining marketing units each, to distribute oil products on a regional basis is now being finalised. At present there are 8 oil

companies engaged in refining and marketing operations — IOC, Bharat Refineries, HPC, Caltex, Assam Oil Company, Madras Refineries, Cochin Refineries and IBP. In addition there is Indian Oil Blending, a subsidiary of IOC engaged in blending tube oils and greases. 5 companies, IOC, BRL, HPC, Caltex and Assam Oil are integrated marketing and refining companies, Madras and Cochin Refineries are only refining companies and IBP only a marketing company. All these will be linked to the 4 regional companies, which will operate in the north comprising Jammu & Kashmir, Punjab, Haryana, Himachal Pradesh and Uttar Pradesh, the East covering North East, West Bengal, Orissa and Andhra Pradesh, the West covering Gujarat, Rajasthan, Madhya Pradesh and Bihar and the South comprising Maharashtra, Karnataka, Kerala and Tamil Nadu. Such an arrangement will make for both economy and rationalisation, and, provided there is a constant review of their operation, it can also make for efficiency.

Coal: Coal production in 1975-76 was 99.8 million tonnes which was 10 per cent higher than the preceding year's. For this year, the production is expected to be 108 million tonnes. Of this 1.5 million tonnes are to be exported earning Rs. 60 crores. Coal India has designated its subsidiary, Western Coal Fields, as the lead company for marketing, sales, after sales and consultancy services in Western and Southern India. In the industry's perspective plan released by the ministry, the R and D stress is on underground gassification of coal from locked up coal reserves, and discovery of a cheap process of gassification of lower grade coals. In the proving of

resources, stress will be on reducing the time and expenditure involved in exploration, and proving of coal deposits. Rs. 3.28 crores have been provided for detailed exploration of coal fields on the basis of which new mines will be opened and developed. There is finally the question of coal prices which are under study by the Chakravorthy Committee. The industry would like an increase of Rs. 8-10 per tonne, and the technical case, as in the steel case, is strong. It is doubtful however if the government will now allow for an across the upward increase so soon after the increase granted last year (see Vol V p 398).

Copper and Zinc: Copper production in June increased to 1,906 tonnes (against 1,027 tonnes in June 1975), and for the first quarter April to June was 6,154 tonnes which was 44.3 per cent higher than that of the first quarter of 1975. Similarly the production of copper wire bar doubled in June of this year and with the similar trends in blister copper, HCL will be earning by next year the total capital invested in it. On this basis the government is formulating a 10 year plan for the exploitation of the copper deposits in the country, such as those recently discovered at Banwar, Wari and Hassan and for expanding the current smelting and refining capacities. In the area of zinc production, against the current demand for 90,000 tonnes, Hindustan zinc produced 40,843 tonnes of zinc concentrates in 1975-76, against the target of 36,600 tonnes and the 1974-75 production of 31,313 tonnes. By the end of 1976-77 the Debari Smelter will be completed and the new Zinc Smelter at Vishakapatnam should be ready, which together will mean that indigenous production can meet 80 to 90 per cent of the national demand. By the end of the Fifth Plan, the melting capacity

of the country will be increased to 1,15,000 tonnes, making the country completely self-sufficient in this metal.

Small Public Limited Companies : RBI's April Bulletin makes an appraisal of 750 small companies (capital below Rs. 5 lakhs) for 1973-74, which should be read alongside the results of the small industry census reported in the last issue (p. 373). It reports a 9 per cent increase in value of production, a lower (5.5 per cent) rate of sales and hence a higher rate of inventory accumulation, a large increase in all levels of profits, gross, operating and before and after tax, and an increase in profitability ratio. There is also recorded a decline in dividends distributed, reliance on external financing for financing assets formation—to an extent of 78.7 per cent—, and a marginal improvement in the debt-liquidity position of the companies—from 0.99 in the previous year to 1.00 in 1973-74.

Cotton & Textile : To halt the rise in cotton prices, CCI on July 9 purchased for Rs. 12 crores 35,500 bales of foreign cotton. This is part of Rs. 35 crores in foreign exchange released by the government to import cotton, which is now on hand. Earlier on July 7, the Textile Commissioner lowered the limits on stocks of cotton that can be held by the mills by one month stock for all mills, except co-operatives for which it is $1\frac{1}{2}$ months. Mills are not to purchase cotton beyond the limit and stocks in excess of the limit have to be declared individually. Cotton textiles packed on or after July 15 must have the maximum retail price stamped. All mills are to produce a certain percentage of standard cloth, long cloth grey 15 per cent, blocked 15 per cent, dhoties 25 per cent, sarees 20 per cent, shirtings 20 per cent, drill and tussor 5 per cent.

About 2,200 bales of standard cloth have been allotted to Tamil Nadu every month. On distribution, NTC is supplying NTC fabrics direct to the co-operatives so that villagers in remote areas can be directly benefited. This scheme is starting in Maharashtra and Gujarat and is to be expanded to the other States co-operatives soon.

Cement, Sugar & Scooters : On July 1, the government raised cement prices by Rs. 3.65 per tonne from Rs. 157.75. This will increase the retail price of Rs. 19 to Rs. 20 per bag by about 18 to 20 paise. There is the larger question of decontrolling cement prices and the abolition of the wagon freight pooling system, referred to in the last issue (p 373), on which the government has not yet made up its mind and which has to be studied further before a decision is taken. Meanwhile, cement mine workers in Maharashtra have started a fund raising drive among themselves in order to set up a cement factory of their own with a capacity of 1,200 tonnes per day employing 2,000 workers. Its cost is Rs. 16 crores, of which the workers are raising Rs. 2 crores. In the area of sugar production, in order to speed up capacity expansion, the Union government in July announced the removal of all restrictions on seeking terms loans from Central Financial Institutions. This permission to all factories having licenses for substantial expansion with restrictive clauses about term loans having been removed, along with the other announced incentives for new expansions such as higher levy free quota and excise relief, should help in getting nearer the Fifth Plan targetted license capacity of 70 lakh tonnes and installed capacity of 60 lakh tonnes. Scooters production is gaining ground so that by the end of 1977 the total output of scooters will be 2.5 lakhs for the country.

Scooters India and its licensed agreements in 7 States using the power pack supplied by Scooters India will be able to meet the country's need for scooters, motor cycles and mopeds to the point that by next year, this product area might turn into a buyers market.

Agricultural Production: 1975-76 saw a strengthening of the national food security system with the foodgrains production exceeding 116 million tonnes, a stock of over 15 million tonnes, and pulses of 10 million tonnes. Milk production increased to 37 lakh litres per day in co-operative dairy plants, and fish production to 26.2 lakh tonnes. On the procurement side, the procurement of kharif cereals was 6 million tonnes and rabi procurement still going on in July had crossed 6.3 million tonnes. The monthly offtake from the public distribution is 6 lakh tonnes a month against last year's one million tonnes per month. In order to stabilise production on a long term basis, during this good year, irrigation of 1.05 million additional hectares was created at a cost of Rs. 480 crores, further to obtaining the maximum from the existing 46 million irrigated hectares. The other supporting services were extension of the technology to dry farming regions, institutional reforms in agrarian structure, improvement of the production base, improved methods of storage, early warning systems of pests and diseases, and timely supply of HYV seeds, fertilisers and credit. Food imports in 1976 are expected to be 6 million tonnes (as against last year's 7.4 million tonnes), almost entirely the spill over of last year's contracts. As noted in the last issue (p 376), no contracts are being entered into this year. The Union ministry has fixed a target of 50 million tonnes for paddy production for this year against the 48 million tonnes produced in

1975-76. Of the 50 million tonnes, 46 million tonnes are to be produced during kharif, and 4 million tonnes during rabi. HYV were grown over 33 million hectares this year against last year's 32 million hectares. The community nurseries programme is spreading fast and is also acting as a buffer in areas where the monsoon was weak and delayed. The Union ministry of food and agriculture in mid July increased its estimate of foodgrains production for the year 1975-76 to 118 million, being an increase of 17 million tonnes over the 1974-75 production. The Union Planning Commission, however, queries this estimate and cannot accept a jump from 101.1 million tonnes in 1974-75 to 118 million tonnes in 1975-76. The Commission is using the figure of 114 million tonnes for 1975-76 and has suggested that the target for 1976-77 should be 116 million tonnes, assuming an import of 4-5 million tonnes even in the last year of the Fifth Plan. In the first quarter of the current financial year, nitrogen fertiliser production increased from 2,75,000 tonnes in the first quarter of 1975 to 4,17,000 tonnes, due mainly to improved capacity use of the plants. There is a plan under study to bring under one umbrella the entire marketing of fertilisers produced by FCI, IPFCO and MFL in order to ensure a strong and consolidated marketing net work. The government has approved Hindustan Insecticides setting up a BHC granulation plant at Kerala with a capacity of 6,600 tonnes per annum. All Hindustan Insecticides expansion plans are now approved and it should help the country become self-reliant in malathion, endosulfan, DDT and BHC. After an initial hesitant start in June and early July, the South West Monsoon became normal in North and Central India from mid July, making possible nor-

mal sowing of food and cash crops in the country. While in early July normal rains were recorded in only 30 per cent of the country, by mid July it became 60 per cent. Sowing is normal and transplantation of paddy completed in Punjab, Haryana, Western UP and is underway in West Bengal, Bihar, Madhya Pradesh, Andhra Pradesh, Orissa, Tamil Nadu and Karnataka. In Kerala however the first crop has been affected, due to failure of the South West Monsoon. In the case of coarse grains, maize sowing is complete in all maize sowing growing States and is underway in the bajra and jowar producing States of Maharashtra, Madhya Pradesh, Rajasthan, Andhra Pradesh, Karnataka, Gujarat and Uttar Pradesh. Khariff pulses sowings are also in full saving. Sowing of groundnut is complete in Gujarat, Andhra Pradesh, Tamil Nadu, Maharashtra, Karnataka, Madhya Pradesh and Rajasthan and Punjab. A bumper groundnut crop is expected. Cotton sowings are normal in Punjab, Haryana, Uttar Pradesh and Rajasthan and crop conditions are satisfactory. Even a slow moving State like Bihar estimates that it will reach its current year's target of 10 million tonnes of foodgrains production against the 1974-75 output of 85 lakh tonnes. For 1975-76 the State reports an increase of 10 lakh tonnes in foodgrains production, and to be sure to reach the current year's target the government is using widely the community nursery strategy over 1.7 lakh hectares of perennially irrigated areas, and by increasing HYV coverage from 7.53 lakh hectares to 11.70 lakh hectares.

Exports: For 2 months running, exports have been increasing and imports have declined. In April exports were Rs. 323.76 crores, compared to Rs. 243.68 crores in April 1975. Imports

on the other hand were provisionally placed at Rs. 321.92 crores (compared to Rs. 353.11 crores imports in 1975), giving a favourable balance of Rs. 1.84 crores in April. In May 1976, exports were Rs. 373.74 crores and imports were Rs. 341.65 crores, thus giving a trade surplus for May of Rs. 32.09 crores. This favourable trend is for the fourth month in succession during the calendar year and is likely to continue as the decline in imports from the high point of Rs. 535.93 crores reached in October 1975 will take some time to work itself out. Imports of foodgrains and fertilisers have been stopped as noted earlier, oil imports are being scaled down, with a ceiling of 15 million tonnes for the next 2 years 1977 and 1978. While the average monthly import bill in 1975-76 has been Rs. 406.33 crores, the April and May bills have been well below this average as noted earlier. On the export side, several items are looking up. Sugar exports earned Rs. 472 crores in 1975-76 (Rs. 340 crores in 1974-75). Edible oil export have been earning Rs. 33.3 crores in 1974-75 and Rs. 29.8 crores during the first 3 quarters of 1975-76. Oil cakes brought in an additional Rs. 10.3 crores in 1974-75 and Rs. 6 crores in April-December 1975. This trend is continuing for this year, except that the government has now banned the export of groundnuts as noted earlier. In fish exports, during the first quarter of 1976-77, Rs. 411 crores of fish and fish products were exported against the year's target of Rs. 150 crores. This is a big jump from Rs. 2 crores in 1960-61 to Rs. 80 crores in 1974-75 and Rs. 120 crores in 1975-76. Dalmia Cements is exporting 12,000 tonnes to Iran. Holland, West Germany, Denmark, Britain and France have ordered 6 lakh tonnes of coal from India. Cotton exports, however, suffered a sharp set back in April, falling

from Rs. 78.36 crores in March to Rs. 33.89 crores in April. While all varieties declined, the fall in cotton piece good exports was the sharpest. When the May figures come in, it will be known if this was a temporary set back due to the delay in the announcement of the export incentive scheme. Sports goods exports are expanding and are likely to earn Rs. 16.50 crores this year and Rs. 45 crores by the end of the Plan period. It is essential that the sports goods industry should organise itself for this expanding foreign as well as domestic market. Engineering exports are also expanding. In April they increased by 13 per cent earning Rs. 35.15 crores including capital goods Rs. 2.86 crores, primary steel and pig-iron based goods Rs. 7.82 crores (which is an expanding item), and consumer durables Rs. 11.30 crores. The year's target is Rs. 500 crores against last year export of Rs. 409 crores and is likely to be achieved. During July the new Indo-Soviet merchant shipping agreement was signed and this will further boost the trade between the two countries. Similarly the Indo-Spanish trade talks in July has expanded and diversified the list items traded between the 2 countries. India will be exporting to Spain machine tools, diesel engines, air-compressors, iron-ore, coal, mica, leather products, tobacco, coffee and tea. Similarly the possibility of Rupee transactions between India and Sri Lanka now under study will expand the trade between the two countries. The government announced in July that registered exporters will be able to get full reimbursement of cash aid in 1976-77, instead of the usually 95 per cent first payment. This speeding of the full cash aid refund to exporters will expand the export trade. At the same time, the RBI announced in July relaxation of export credit conditions, that is, the bank rate on credit will not exceed

11.5 per cent upto the time of the proceeds being received in India, with a maximum of 90 days. This will reduce the interest burden suffered by exporters who have to wait for 2 to 3 months to get their export payments. With the international commodity markets looking up, there should be a further fillip to our exports and might result in a favourable trade balance for the year. In any case the trade surplus in April and May has occurred simultaneously with a sharp rise in the country's invisible earnings—mainly in the form of inward remittances estimated at Rs. 120 crores per month. The country's foreign exchange reserves including SDRs at the end of April stood at Rs. 1,335.38 crores, against Rs. 1,491.70 crores in March 1976 (when an IMF repayment was made (see last issue p 377) and Rs. 652.45 crores in March 1974. As at June 30, balances held abroad by the Banking Department was Rs. 1,231.59 crores and the foreign securities held by the issue Department was Rs. 546.73 crores.

Aid : Abu Dhabi has made a loan Rs. 15.1 crores for financing a 108 MW power station at Garhwal. The loan will carry 3 per cent interest and is repayable in 20 years. In July the World Bank announced a loan of Rs. 72 crores to finance the expansion of the country's telecommunications system. The loan will carry an interest of 8.85 per cent and run for 23 years with a 3 year grace period, when the long distance telephone net works and improved telex services will be completed.

International :

Bangla Desh : The Bangla Desh jute industry reports notable expansion. For

the 11 months ended May 11, the export sale of jute goods totalled 4.97 lakh tonnes, being an increase of 3,98,292 tonnes over the whole of the previous year (1974-75). The actual exports quantum during the period was higher at 4,08,452 tonnes compared to 3,85,082 tonnes for all of 1974-75. The jute mills are operating at full capacity, having overcome the problems of power shortage, lack of spares, batching oil and other stores material, labour unrest and management deficiencies. The product mix show a sharp rise in carpet backing which increased from the previous year's 41,097 tonnes to 66,229 tonnes in the 11 months ending May 1976. In sacking it has secured bulk business overseas.

Pakistan : July saw the effectuation of a series of bilateral arrangements between India and Pakistan, one effect of which will be increased trade between the two countries. On July 21 air traffic between the two countries was resumed with flights from Lahore to Delhi and Bombay and vice versa, and similarly the train services between Amritsar and Lahore were resumed on the same day. Diplomatic relations between the two countries were also resumed from that day, so that relations between the two countries are becoming normalised. Already in early July, two weeks after the decision to allow the private sector to enter the trade between the two countries, enquiries were pouring in on both sides and on the Pakistan side the enquiries were about the prices and supply of several industrial items from India.

World Monetary Reform : IMF on July 14 held its second auction of 7,80,000 ounces of gold, which was sold at \$ 122.05 an ounce, which was slightly lower than the \$ 126 per ounce of the first

action (see last issue p 378). This fall in price affects several interests—the developed countries whose central banks hold large gold reserves, the USSR and gold producing countries which want a high price, and the developing countries which look to the profit from the sales to feed the special fund to help them. Gold began falling in the open market and reached \$ 105.5 an ounce on July 20, and picked up to \$ 110 an ounce the next day. The Bank of France spent upto \$100 million to store up the Franc, showing the brittleness of the pound sterling, the Italian lira and the French Franc. The Fund also in July reviewed the rate at which it pays remuneration on super gold tranche positions and the interest rate on SDRs. For the quarter beginning July 1, 1976, the rate will be 3.75 per cent per annum as compared with previous rate of 3.50 per cent. The interest rate and charges on SDRs for the quarter will be 3.75 per cent. These remunerations are paid by the Fund to member country that has a super gold tranche in the Fund.

Second Decade : The UN survey of Second Development Decade reports that the average growth rate in the first half of the Decade of the developing countries was 5.5 per cent, and that the disparities between the developed and developing countries widened during this period. The average growth rate in agriculture was 2.2 per cent, about half of what was forecast in the International Development Strategy. Manufacturing output averaged 8.6 per cent (which was above the target), due to intensive efforts at industrialisation, the expansion of the domestic market and the growth of export oriented industries. Exports, however, increased at less than 4 per cent per annum, including those of petroleum exporting countries, so that export of the majority of

the developing countries was much less than the targetted 7 per cent. The flow of resources from the developed market economies was less than 0.71 per cent and was nowhere near the one per cent of GNP pledged and ODA was less than half the pledged 0.7 per cent of the strategy target. The external debt of the developing countries rose to \$ 164 billion at the end of 1975. For the second half of that Decade, for the non oil exporting developing countries because of the uncertainties of their foreign trade, their growth performance will depend very much on how their agriculture performs. This may improve if the weather is good, and improved water management and cultivation practices are ensured and determined efforts are made to build up, store and distribute security stocks of foodgrains. The other positive force will be their foreign trade which should benefit from the recovery of the industrialised countries in the second half of the Decade and should increase their export earnings from rubber, textiles, copper, aluminium, lead and iron-ore. Hence agricultural production increase, effective utilisation of domestic industrial capacity, and skilful control over the composition of imports should influence their growth rate, which in agriculture may average 4 per cent, and may then make possible attaining the 6 per cent target, if exports expansion also attains 7 per cent in real terms. For the developed countries, the survey predicts a 5 per cent average growth rate during the second half of the decade, along with inflation and unemployment, despite their recovery from recession. There is a real possibility that the twin problems of inflation and unemployment will remain unacceptably high levels, unless there be significant structural changes. In the centrally planned economies, there will be a shift to agriculture, raw materials

and energy, and their foreign trade will grow faster than national income in real terms. Finally even within the developing countries, the survey concludes that the traumatic economic developments of the first half of the decade has further accentuated the disparity between the resource rich and more diversified developing countries and the countries which are poorly endowed with natural resources.

Conference on International Economic Co-operation: In continuation of the decisions of the February session of the Conference on International Economic Co-operation (see Vol VI p 209), a 3 day review of senior officials of the 27 developed and developing nations which began on July 8 in Paris gave its 4 commissions on energy, raw materials, development and finance the political mandate to take decisions on the basis of the negotiating phase into which they have now entered. The 4 commissions are to formulate concrete proposals to be submitted to a ministerial conference later this year, with special attention to the problems of the most seriously affected countries. There was also agreement that the conference will deal with the problem of accumulated debt of the developing countries and make proposals for an equitable and comprehensive programme of economic co-operation including agreements, decisions, commitments and recommendations for decision by the ministerial conference. It is to be hoped that in this restricted forum concrete decisions will be arrived at unlike in UNCTAD, where the only decision was to make no decision.

World Trade and Aid: World exports in 1975 amounted to \$ 880 billion, of which \$ 580 billion was from the developed

market economy countries, whose exports were 76 per cent in industrial products and 23 per cent raw materials and agricultural products: \$ 215 billion was from developing countries of which 16 per cent were industrial products and 82 per cent raw materials and agricultural products; and \$ 85 billion was from centrally planned economies of which 60 per cent were industrial exports and 34 per cent raw materials and agricultural exports. The report of the Development Assistance Committee of OECD for 1975 shows that development assistance increased from \$ 11.3 billion in 1974 to \$ 13.6 billion in 1975, and Official Development Assistance (ODA) increased from 0.33 per cent in 1974 to 0.37 per cent in 1975, a 20 per cent increase, with Netherlands and Sweden taking the lead with 0.75 per cent and 0.82 per cent of their respective GNP being given in ODA. But it was only these 2 countries which have kept their pledge 0.7 per cent ODA. With the 10 per cent price rise, the real rate of increase in ODA was 10 per cent. There was also a certain shift in the assistance with more food aid—from 13 to 16 per cent—and some decline in technical co-operation from 25 to 23 per cent. OECD adds up all commercial transactions to arrive at the total resource flow and when this is done including Euro market transactions, the total volume of financial resources channelled from DAC countries amounts to \$ 47.8 billion, but this is not assistance.

World Food and Food Aid: A July analysis of OECD shows the per capita food production of developing countries in 1974 being below the 1976 level and trend of food production from 1970 to 1975 being below the average growth rate of the sixties and the growth in food demand. The result was the developing

countries increased their net cereal imports from 15 million tonnes in 1969-74 to 29 million tonnes in 1974-75 and their gross imports from 33 million tonnes to 47 million tonnes in that period. It points out that the food deficit of the developing countries will reach unmanageable proportions in the future—upto 40 million tonnes per annum—if the present production trends continue. There is a double hope. First the countries are giving priority to agriculture and increased food output in their medium and long term plans and with adequate domestic policies, better prices for farm products, improved agricultural techniques and more adequate support for trade in food, the food prospects should be better. Second there is the World Food Aid decision to have a 5,00,000 tonnes reserve on call. So far Sweden has responded with 40,000 tonnes and Norway 10,000 tonnes, and for the objective of ensuring continuity in physical supplies, Canada has pledged a 3 year minimum target in one million tonnes and Sweden 75,000 tonnes. This should spread and the food reserve should be built up, by the governments of the OECD countries ear-marking in their cereal and other food stocks a tonnage which would enable the system to rush food quickly at a time of emergency or disaster.

World Oil: BP reports that world oil production was down by 5.4 per cent in 1975,—the first such decline since 1942. In OPEC countries production fell by 10 per cent, but rose by 36 per cent in West Europe. To some extent the reduction reflected the running down of high stocks. World oil consumption also fell by 3 per cent in 1975. World oil reserves are estimated at 90,000 million tonnes, half of which is in West Asia.

Non-aligned New Agencies Pool : A 62 nations non-aligned conference meeting in Delhi in July decided to constitute a pool to improve and expand mutual exchange of information and to counter the distortions forced on them by advanced nations. It established the modalities of collecting and distributing news stories concerning non-aligned countries, and to supervise its operation, a 14 nation co-ordinating committee was established. For tackling technical problems it set up an international committee of experts. The plan will promote co-operation in news dissemination, publication, audio visual media, research and training and will set up its telex services and special postal and telecommunication rates.

Non-aligned Club of Scientists : A Seminar of scientists from the developing countries held in June in Colombo has

emphasised the need for developing joint research institutions, sharing expertise, harmonising development plans and so developing a club of Third World scientists. Such a club can also engage in futuristic studies of the development pattern of the Third World and make continuous projections of growth in their areas of economic development, population, agricultural technology and not rely exclusively on such publications as those by the Club of Rome scientists. Another small matter. At present in the absence of prestigious journals in the Third World, the best research papers are published in the Western journals so that Western scientists know about our research before our own scientists know them. This can be corrected by the Third World scientists developing their own prestigious science and technological journals. This scientific movement might be given a further push by the Colombo summit next month.

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II. Agricultural Development

Paddy :

July turned out to be a disappointing month for paddy cultivators in the State. In Thanjavur district, the short term kurvai paddy crop is usually sown in the first fortnight in June and with Mettur and other reservoirs filling up by mid June from the South West Monsoon, water is usually let from early June. But this year, the monsoon has been delayed and Coorg,

the catchment area for Mettur, had no rains during June and the greater part of July. The result was that the Mettur water was not released till July 26 as noted earlier. Even so instead of the 12-14 lakh acres over which kuruvai is normally cultivated (12 lakh acres last year), this year only 3 to 3.5 lakh acres have been sown and that too in areas outside of Thanjavur and Tiruchi —the Cauvery delta. In Thanjavur district

itself instead of the usual 5 lakh acres, only 10,000 acres have been sown, an effort made by the affluent farmers using filter points. Transplantation was not done by mid July in any areas, awaiting more rains. Otherwise the State is in good shape for another good paddy year—with inputs available at the village level and full shop in fertilisers, 90 per cent of total area under HYVs, IR-20, Ponni, Kannagi, Karikalan. It looks as if the kuruvai paddy this year will be definitely short of the usual output, and even late rains will simply run kuruvai harvesting into the North East Monsoon.

Other Crops:

The other foodgrains have not been affected. So far millets have been cultivated in 25 to 35 lakh acres in the current kharif season against a total of 40 to 42 lakh acres. Groundnut cultivation over 20 lakh acres have been started and the ground is being prepared for cotton cultivation in September and sugar cultivation in December. In view of the rise in groundnut oil prices, the government is aiming at producing 13.5 lakh tonnes of groundnut, cultivating 20 lakh acres of dry land and 5 lakh acres of irrigated land. HYV groundnut seeds and better fertilisers are being made available to farmers. It is also planned to grow sunflower over 3.7 lakh acres (against last year's 3 lakh acres). In order to encourage further production of paddy and other food crops, the government in early July removed the ban on the installation of electric pumpsets under the minor irrigation scheme. Only ground water discipline will still have to be observed. The Department has also launched a massive programme for vegetable cultivation in the city and districts to bring down

the rising prices of vegetables. 1.5 lakh packets of seeds are being distributed through the agricultural depots, super markets and milk booths. 2.5 lakh seedlings of chillies, brinjal and tomato and additionally coconut seedlings are being used to increase the supply of fruits and vegetables.

Research Results:

The government has under study the reclamation of the 20,688 acres swamp in Tindivanam taluk and turning it into a productive zone for fishing and farming. A committee is at work examining the technical and economic feasibility of converting this potentially valuable land into a cultivable area with a large sweet water lake. This would be a sizeable addition to the gross cropped area of the South Arcot district. The Hyderabad Institute (ICRISAT) has evolved a good and cheap method to cut down seepage losses that dry farming lands suffer from. What is involved is the use of local material—red soil sediment, straw and sodium carbonate, which when used together brings down the seepage from 25 cm per day to 0.5 cm per day. These results can be used in garden land farms to meet the problems of water loss due to seepage from well to field. In connection with these red soil dry lands, research in Bangalore has shown that graded bunds with protected waterways and tillage across the slope can improve the moisture content of the soils and lead to retention of the water after rainfall on the basis of which the dry crops—ragi, maize and groundnut and double cropping—cow pea—ragi, or inter-cropping—ragi—soya bean—can be tried. One of the problems faced by Thanjavur farmers who have a tradition of mono-culture with regard to paddy is that any

switchover to a long duration crop like sugarcane is both uneconomical in terms of income per hectare, (which can however be corrected by fixing a more reasonable cane price), and the absence of any inter-cropping possibilities. It is here that a number of demonstrations have been made in Aduthurai and Maduranthakam showing that short duration crops like HYV green gram and black gram, and vegetables like coreander, bendai, radish, beans etc. can be grown in the inter-spaces between the cane plants and give the farmer an additional income of Rs. 400-Rs. 500 per acre. On the pest side, as a result of further research, the State Department is bringing under control the bunchy top disease affecting bananas in the lower Palni Hills and Sirumalai Hills. Continuous and systematic spraying of insecticide, destroying the affected plants and proper applications of fertilisers to add resistance power to the plants have brought the disease under control in the 200 hectares in the lower Palni. 1.75 lakh tonnes of Virupaksi and Sirumalai fruits worth annually about Rs. 3.5 crores are involved in this programme. Research at ICRSAT, Hyderabad has succeeded in developing disease resistant sorghum and jowar varieties which in this State and other Southern States have been exposed to the shoot fly, midge and stem borer pests. Apart from the resistant varieties, it has been found that fish meal mixtures are a good attractant to the shootfly. Another popular crop which faces serious danger from mosaic disease and bacterial blight is tapioca, particularly the HYV ones. Here again the long range solution has been to develop disease resistant varieties, of which 16 have been selected, and also to regulate the time of planting to make the plant grow enough to withstand

the pest. In paddy culture, direct seeding is resorted to both in uplands and puddled lands. Here the germinated seeds are broadcast at some cost in weed growth. The Central Rice Research Institute, Cuttack, has developed for this purpose a machine which can be used for sowing germinated paddy seeds in puddled soil which both ensures the dropping of the required quantity to seeds into the seed tubes and prevents the growth of weeds. Finally research in Bombay has helped in the use of tissue culture technique for vegetable propagation of cabbage hybrid under which 6,000 plants have been raised, with 2 such hybrid cabbages. This opens up the use of tissue culture for the production of hybrid seeds in millets—another difficult and expensive process.

Dairy Farming:

Three developments in dairy farming in the State occurred in July. The first was the larger Animal Development Project costing Rs. 10.29 crores launched in July for a 3 year period, 1976-77 to 1978-79 for the benefit of the small farmers, marginal farmers and agricultural labourers in 8 districts. One part of the scheme is calf rearing, costing Rs. 3.48 crores, under which cross breeding using exotic male parents will be undertaken. Subsidies in the form of feed to nurture the calves and maintain them until they in turn drop the first calf and start giving milk are provided. 5,000 three month old calves are to be provided, small and marginal farmers will get a 50 per cent subsidy for the feed upto the 28th month, and agricultural labourers 2/3 of the feed cost. This calf rearing programme will operate in Salem, Madurai, Thanjavur and

Coimbatore and Tiruchirapalli Districts and TNDDC will provide the feed and market the milk. Another part of the scheme is the poultry programme costing Rs. 3.19 crores, under which units of 50 birds are to be established in Salem, Madurai, South Arcot and Tirunelveli districts with marginal farmers and agricultural labourers getting 1/3 subsidy and small farmers 1/4. Tamil Nadu Poultry Development Corporation will supply feed and marketing facilities. Another scheme is the sheep raising scheme costing Rs. 2.70 crores in Salem, North Arcot and Tirunelveli districts under which units of 20 ewes and one ram are to be set up. Finally a piggery scheme at a cost of Rs. 2.51 crores is being developed in Madurai, North and South Arcot districts with 1,500 units, each with 3 sows and a pork processing plant. The second development was establishment of a mother dairy plant in Madras at a cost of Rs. 5.5 crores and an Anand type dairy unit at Erode at a cost of Rs. 4.5 crores. In this connection, it is pointed out that there is a large gap between the supply and demand for milk in the country. In the 4 metropolitan cities of India, the demand for milk is 27.57 lakh litres and the organised sector is only able to provide 9 lakh litres, the rest coming from private vendors. By 1978, the organised sector will acquire a major share of the market and then it will be possible to regulate the quality and quantity of milk all round. The third development was the first milk rail tanker which ran from Erode to Madras in July. Till then, TNDDC has had to transport milk from Ootacamund to Madras by road tankers and lorries with the advantages of ease of transport and clean standards, and the defects of delays and breakdowns. The rail tanker transports 40,000 litres of milk in a stainless steel tanker which is cleaned and sanitised and maintains the low temperature of 4° C

which is necessary to maintain its quality. Now TNDDC needs to build the necessary unloading facilities at its Ambattur station so that this modernised transport of milk can be effectively used and expanded.

Tea :

The export earnings for 1975 amounted to Rs. 240 crores, Rs. 20 crores more than the 1974 earnings. For 1975-76, tea sales at Calcutta amounted to 174.2 million kg. compared to the previous year's 169.3 million kg. at an average price of Rs. 11.52 per kg. against Rs. 10.99 per kg. in the previous year. With prices ruling high in the last 2 years, tea estates, after a long time, enjoyed surpluses which most of them ploughed back in new machinery and factory and field improvements. Such improvements and greater use of fertilisers and chemical controls will, it is hoped, lead to larger output and improved quality, helping the industry to increase and improve its viability. One reason for higher tea prices is the demand for tea in oil rich West Asia but there is scope for vast increase in sale in this region. For instance, Iraq consumes only 1.92 kg. per capita, and imported 5,128 tonnes in 1975, from North India and 1,313 tonnes from the South while from Sri Lanka it imported 19,222 tonnes. Iran whose per capita tea consumption is even lower at 1.39 kg., imported 7,097 tonnes from the North and a small 114 tonnes from the South—(5,582 tonnes from Sri Lanka—in 1975). India can rapidly expand its sales in this region from the 7,875 tonnes to all the Gulf and Red Sea ports to double that, through intensive and tailored publicity and competitive prices.

Coffee :

The Coffee Board has launched a crash

programme to increase coffee production to 1.20 lakh tonnes by 1978-79. For 1976-77, coffee production was expected to be one lakh tonnes and special efforts are underway in the Madurai district which produces 40 per cent of the State's coffee to expand production. The first census of coffee estates was completed in June. In view of the loss of revenue from a large number of unregistered coffee estates, a drive has been launched from July to register all unregistered estates. Of 80,587 estates, 35,253 are unregistered. In Karnataka of 28,713 estates, only 20,352 are registered, in Tamil Nadu of 13,758 estates, 5,840 are registered, in Kerala, where small peasant holdings prevail, of 37,604 estates, 18,977 are registered. The unregistered estates are also not able to benefit from the Board's development schemes. This result of the first census of coffee estates shows that the total planter area is 4,23,870 acres, consisting of 2,41,899 acres arabica and 1,81,971 robusta. A total 1,27,615 acres are suitable for further expansion of coffee estates in Karnataka, Kerala and Tamil Nadu. 81.2 per cent of estates in the 3 States are holdings of less than 50 acres extending over 22.4 per cent of the area under coffee. 93.5 of the estates in Karnataka and Tamil Nadu are managed by owners, of whom 63.2 per cent are resident on the estates. When the unregistered estates are brought within the Board's operation, there will be an

increase in output.

Rubber :

There is a difference of opinion on rubber production estimates between the Rubber Board, the tyre manufacturers and the Indian Rubber growers Association. The Rubber Board estimates natural rubber production for 1976-77 at 1,50,000 tonnes involving a surplus stock of 47,500 by the year end. Tyre manufacturers estimate the 1976-77 production at 1,45,000 tonnes, with a deficit of 2,000 at year's end. The Indian Rubber Growers Association estimate output at 1,60,000, with a surplus of 57,500 tonnes this year. The Rubber Board, pointing to the actual increase in the consumption of natural rubber at 1.8 per cent in 1974-75 and 0.7 in 1975-76, states that with the recession in tyre industry, the demand will not increase this year. The tyre industry has accepted the 10 per cent export obligation per annum against the past 2.5 per cent and expects demand to improve. For the present, the government stands by its instruction to export rubber (see last issue p. 385) in the hope of improvement in the sagging internal price of rubber. Rubber production in Kerala, Kanyakumari and Karnataka will be helped by the use of suphala produced by FCI. Its Trombay unit should move it in sufficient quantity to meet the needs of the planters in the 3 States.

III Industrial Development

Neyveli :

Neyveli's annual report for the year ending June 1976 shows improved performance in mining, power, fertiliser and briquet production. As noted earlier, in the first quarter April-June, it exported 800 million units to the Tamil Nadu grid, supplying 40 per cent of the State power for that period. Against 1,05,648 man hours lost in the year ending June 1975, there was no loss for the year ending June 1976. The number of apprentices more than doubled from 200 to 450, and new categories of 100 commercial apprentices and 24 graduate engineering apprentices have been taken on. To promote workers participation in the industry, 18 shop floor councils and 5 unit councils have been formed, resulting in improved standards of operational and maintenance efficiency.

Seamless Tube :

As forecast in Vol. VI p. 277, the seamless steel tube plant's foundation was laid at Tiruverambur on July 19. The 40,000 tonnes plant, an adjunct to the high pressure boiler plant of BHEL, was quite unnecessarily delayed for 6-7 years by inter ministerial wrangling at the Centre, which sent the cost up to Rs. 58 crores and delayed the project which should have been operating by now. At full production, its sale value would be Rs. 57 crores and the foreign exchange saving would be Rs. 44 crores. 65 per cent of the total production would be consumed by BHEL's boiler plant. The plant which is being engineered by MECON will go on stream in 1979-80 and will open up opportunities for ancil-

laries to manufacture spares, tools and services for the plant and for the production of tees, elbows, pressure vessels, hydraulic press and other products. The plant will also enable BHEL to reduce its delivery delays and will be a major consumer of SAIL's clean steel. As noted in the last issue (p. 387), TIDCO is setting up a Rs. 5 crore steel bloom plant as an adjunct to its Concast plant, for supplying blooms to the seamless steel tube project.

Minerals :

GSI's survey of 7,000 square km. in the State has shown that the iron-ore is magnetic ore and in the Kavunthimalai areas near Tiruvannamalai the amenability of the ore for beneficiation and utilisation is under investigation. Also noted in the last issue (p. 372), the GSI in co-operation with the Bharat Gold mines is investigating the economic feasibility of developing a lead-zinc-copper complex near Mamandur in South Arcot. The studies to date show that the ore carry 10 per cent of combined metals, with appreciable value of silver and cadmium also being present. In the Alangayam area in North Arcot, there are possibilities of lead mineralisation in baryte quartz veins. The question now under study is the extent of availability and the percentage of lead in the ore.

ICF :

The Integral Coach Factory is now producing a new design of air conditioned 2-tier sleeper with its own axle driven

generating equipment. Two coaches a month are being turned out, so that by March 1977, 32 such coaches will be produced. Another design of a composite 10 first class and 84 second class berth coach is also going into production, twenty of which will be ready by March. The factory exceeded its May target in producing 60 coach shells against a target of 48, and 53 furnishing against the target of 51. For the year it will produce 491 shells and furnish 508 coaches, including 17 for export to Tanzania. The factory has become also almost completely self-sufficient, including in all its sophisticated air-conditioning equipment, with only 2 to 3 per cent of imports.

SIPCOT:

SIPCOT faces a difficult year with a reduction of its budget from Rs. 269 lakhs in 1975-76 to Rs. 184 lakhs for 1976-77. This financial squeeze comes at a time when SIPCOT's Ranipet complex has taken off with 9 producing units, 27 plots allotted to other units, 33 sheds out of 100 handed to small entrepreneurs and 92 out of its 132 flats under occupation: its Hosur complex of 1,200 acres, the first phase of 320 acres already under development: its Manamadurai centre which is being readied with 1,000 acres and the demand of the industrialists for the plots being studied. On the basis of the 34 feasibility studies that are being completed, SIPCOT will be starting one growth centre in each of the 6 backward districts—Dharmapuri, Kanyakumari, South Arcot, Thanjavur, Tiruchirapalli and Pudukottai, in addition to those in Madurai, North Arcot and Ramanathapuram. But for this, it needs more funds and should be allowed to raise further funds from IDBI.

SIDCO:

The State government has passed orders extending the hire purchase scheme to all conventional industrial estates in the 50 SIDCO centres in the State. Land cost is fixed on the basis of market value, value of building as if constructed at March 31, 1975 with 2.5 per cent annual depreciation, initial payment 50 per cent of cost and balance of payment in 5 years. SIDCO is constructing further industrial estates at Mathur, Krishnagiri, Ranipet and Thanjavur and all its 1,000 to 1,500 sheds have been occupied. Also a small scale industries rehabilitation committee headed by Secretary, Industries Department set up by government is analysing the problems faced by these small units and providing assistance to them. The 55 field inspectors are being spread out and stationed in different parts of each district to provide technology, finance, raw materials, and marketing assistance to any small units—of which there are 45,000 registered in the State—that may be in trouble. Banks have already identified 25 units deserving help, and SIDCO and the banks are providing the necessary help.

Textiles:

The State government is undertaking a study of the problems faced by the textile industry in the State to help in their rehabilitation. Out of 212 mills, 60 have substantial liquidity problems. Similarly the government has appointed a committee with the Additional Textile Commissioner as Chairman to assess the requirements for financial assistance of the Southern mills—particularly those of the closed mills. Many spinning mills were still making distress cotton yarn sales in July, and yet the handloom

sector was paying high prices for their yarn. Some mills have deferred their wage payments. In this situation, the relief being considered include moratorium on sales tax arrears and electricity charges for a short period, as well as special assistance from RBI. There is need for both short term and long term relief and rehabilitation. Despite these adverse conditions, 3 out of 9 National Textile Corporation's subsidiaries have made profits for the year ending June 1976. One of these 3 subsidiaries was the Tamil Nadu/Pondichery one which made a profit of Rs. 6.32 lakhs, mainly due to improved labour productivity and management. In the case of the other 6 subsidiaries, there was a reduction in their losses to Rs. 2.17 crores for this period. NTC has entered the export trade and the Tamil Nadu, Pondicherry subsidiary exported Rs. 45 lakhs of textiles in 1975-76 and had upto July booked Rs. 1.5 crores of orders. SITRA announced in July the marketing of an instrument costing Rs. 10,000 for measuring the tensile properties of both natural and man made fibres, to meet the growing demand for fibre textures, which have had to be imported at over 2½ times the cost.

Madras Refineries and Madras Fertilisers:

The annual report of Madras Refineries states that for the year ending June 1976, the refinery processed 27 million tonnes of crude (2 lakh tonnes over the previous year) as well as a 300 per cent increase in the production of cooking gas from 6.5 lakh cylinders to 19.5 lakh cylinders. The capacity of its asphalt section increased from 80,000 tonnes to 2,40,000 tonnes. It earned Rs. 3 crores in foreign exchange in exporting 35,000

tonnes of asphalt and saved Rs. 156 lakhs in foreign exchange by producing 13,600 tonnes of axle oil for the Railways. Through good management and improved labour productivity and co-operation, the plant saved Rs. one crore in fuel consumption and reduced its water consumption from 3.2 million gallons to 2.6 million gallons. The annual report of the Madras Fertilisers for the year ending June 1976 highlights the fact that the factory achieved 3 million continuous safe manhours of operation. This is the fifth million safe manhours operation since the commissioning of the plant in 1971.

Indian Institute of packaging and Testing Centre for Plastics :

The Indian Institute of Packaging with its headquarters in the Guindy Campus is concentrating on improved packaging of foodgrains, where the annual loss of 12 million tonnes is becoming serious, involving a value loss of Rs. 1,200 crores. The Institute is also improving its packaging of seeds—for instance jute seeds for West Bengal grown in Poona and cabbage and cauliflower seeds for Holland grown in Jammu and Kashmir. It is also working on a new design for exporting bulk tea, involving new methods of packaging and replacing the plywood cases which raises a problem of disposal for the importers. The Institute is at work in a number of lines over the country's whole export area to improve our export packing which is at present so poor that about 30 per cent of the value is lost through over packing or under packing. Another project coming up in the Guindy campus is a Testing Centre for Plastic raw materials and products at the Central Institute of Plastics Engineering and Tools. The project itself will cost Rs. 20 lakhs

but will perform an invaluable function in testing the large number of grades of plastics so that they can gradually be codified.

Steel Rerolling Mills :

The steel rerolling mills in the State need to be diversified and modernised with the help of finances that the State financial institutions and the technical aid that the Small Industries Service Institute can give them. With the rising demand and improved market for twisted rods and bars, the mills can now go in for this much needed restructuration. The concessions from sales tax and lower power tariff that they are demanding should be part of a package based on the conversion and modernisation plan for the industry with the detailed cost estimate worked out.

Agro-Industries Corporation:

Tamil Nadu Agro-Industries Corporation announced in July the setting up at Palayur, Pudukottai, of a Rs. 3 crore maize milling complex for the manufacture of glucose, dextrose and sophisticated starch. Producing 15 tonnes of glucose and 15 tonnes of starch a day, the plant will meet the State's current short-fall of 20,000 tonnes of glucose. Other plans to the Corporation include an oil milling complex at Pohampalli, Dharmapuri for crushing, extraction and refinement of sunflower seed oil, a sago plant at Gum midipoondi using UNICEF assistance to manufacture protein enriched sago, a plant at Guindy to make suji and atta from maize which will be duplicated later at Thanjavur, Pudukottai and Coimbatore, a Rs. 18 lakh plant at Kollangarai, Thanjavur to make kraft paper out of paddy straw along with

carton making as a cottage ancillary, a pesticide formulation factory at Ambattur to produce 25 tonnes of dust formulation and 3,000 litres of liquid formulation per day going into operation in August, and a fish net making plant beginning operation in September to meet the Southern region's demand for nylon and polythene fish nets through producing 50 tonnes of machine made webbings per annum.

Handlooms:

In July at a meeting of the Apex and Primary Handloom Weavers Co-operative Societies and the inauguration of the Kancheepuram Intensive Handloom Development Project and the Export Oriented Handloom project at Karur, the State objectives in this area and achievements during the first six months were clarified. The objectives are (1) increase of co-operative looms from 1.27 lakhs to 3.37 lakhs, (2) setting up 50 co-operatives to employ 5,275 additional weavers, (3) increase in modernised frame looms from 10,000 to 60,000, (4) increasing dying capacity in the co-operative sector from 60 bales to 140 bales per day by establishing 20 large size dye houses, (5) three modern printing units for printing handloom cloth, (6) six government manufacturing units to be set up at a cost of Rs. 10 lakh each, (7) co-operative production to be increased from Rs. 36 crores to Rs. 85 crores per annum, (8) co-operative marketing to be increased from Rs. 18 crores to Rs. 50 crores per annum, (9) four export oriented handloom projects to be set up to employ 4,000 private weavers and export Rs. 5 crores per annum, (10) four intensive development projects to provide work for 20,000 private weavers, (11) 1,500 weavers to be given advanced training

and 22,000 orientation training, (12) co-operative spinning mills to expand production of yarn to 7,000, bales per month, and (13) reservation of dhoties and saris to be enforced effectively. In the first six months of the year, the achievements were: (a) 12,000 private weavers brought into the co-operative fold and 40 new co-operatives formed, (b) two new Industrial Weavers Societies formed giving employment to 100 loomless weavers, (c) 48 frame looms modernised, (d) one garment manufacturing unit set up, (e) one export oriented centre at Karur commenced production covering 1,000 handlooms, (f) intensive development project at Erode and Kancheepuram covering 5,000 handlooms each started production, (g) nine co-operative spinning mills being expanded and (h) penal action taken against 1,100 power looms for violation of orders. In addition the Union government announced at the end of July a scheme for the progressive production of dhoties and saris by this sector, starting with 12.5 million square metres out of the total 50 million square metres in demand, and the providing of a subsidy of one rupee per square metre to the handloom sector. Another encouraging development is the decision of the US government to increase the export quota for Indian handlooms for October 1976 to September 1977 from

2.9 million dozen units to 3 million dozen units.

Leather:

During the period April-June 1976, leather exports of all types increased by 90 per cent to Rs. 75.19 crores compared to the first quarter of the last year's Rs. 40.22 crores. This was mainly due to rising high demand for finished leather and leather goods. This means that this year's target of Rs. 270 crores will be achieved. Another good development was the decision of the Union government to drop its plan to merge the Leather Export Promotion Council and Leather Goods Export Promotion Council to form a single council with headquarters at Calcutta. (see last issue pp. 389-390), and instead let the present situation of the Leather Export Promotion Council in Madras to continue. This is a wise decision. In July the Proto type Design and Leather Centre at Madras announced the development of 600 tonne hydraulic ironing and embossing press for the leather finishing industry. HMT is to produce the machine commercially. Further prototypes developed and proved at the centre would be ready for commercial development as the entire technology is made available at the same time. The Centre will be developing 6 to 8 prototypes and training 150 specialists annually in leather machinery building, maintenance and related subjects.

IV. Education, Science and Health

Educational Reform:

As part of the preparation for the new educational structure, the Union government is training teachers in work experience, particularly for classes VIII to X. The first such training course for 45 teachers from the Central schools and 10 from this State was organised at TTTI, Madras in a 3 weeks programme centred on 25 electronics projects. Bharat Electronics and ITI are collaborating by providing Rs. 40,000 worth components, which are rejects as far as these industries are concerned. The 25 projects under this electronics programme could be executed by students under the supervision of the teachers in the 3 last years of the 10 year school. Further to the problems posed by unrecognised schools referred to in Vol VI p 328, the State government has set up a 7 member committee headed by the Director of School Education to study the working of unrecognised schools, their teaching techniques, text-books, syllabi, examinations, fees collected, qualifications and service conditions of teachers employed, and to suggest to the government within 3 months measures for regulating the schools. The government also announced the opening of 20 high-schools by government (two of them for girls) in areas where there are no high-schools, two municipal schools at Erode and Salem and four private schools. The Madras Corporation is now providing radios to all its 350 primary and middle schools in addition to the 77 schools which have such sets. The Tamil Nadu Consumers co-operative reports that against the target of 1.59

crores of text-books to be distributed they have moved 1.69 crores of books through their 376 societies at prices reduced by 25 to 30 per cent. It has also lifted the entire quota of 400 tonnes of white paper allotted to it by the Centre at concessional rates and has sold 186 tonnes to students through its co-operatives at 10 to 20 per cent lower prices. It also reports that through the supply of essential goods, it has brought down the students hostel mess rates by Rs. 22 per month. In July, NCERT launched a 15 day multi-media package programme using TV as one component for 24,000 primary school science teachers in rural areas covered by SITE spread over Rajasthan, Maharashtra, Karnataka, Madhya Pradesh, Orissa and Andhra Pradesh. The programme monitored by 2,400 trained teacher monitors is being conducted at 1,206 rural centres and comprises lessons on television, radio broadcasting, experimental activities with self-instructional materials, printed materials and tutorials by teacher monitors. The programme will help village primary school teachers to adopt an enquiring approach to science teaching, involve children at all stages of the lesson, utilise low cost materials locally available for class-room teaching, and help relate the lessons to their every day environment. The programme has been improved on the basis of the experience in the first effort made in September 1975 covering 752 teachers. The Kashmir government in an effort to improve academic standards has banned the taking of private tuitions by teachers, lecturers and professors working in government colleges,

while simultaneously arranging special coaching classes for academically weak students. At the University level, UGC has published the results of its four regional workshops on examination reform. Probably a little over-enthusiastically, it reports that the concept of replacing the present end of the course examination with students' evaluation through continuous internal assessment by the teachers who teach a subject has received wide support by teachers all over the country. It also refers to the agreement on the seven point grading system and the development of question banks which involve a larger number of teachers in the whole teaching evaluation system than at present. Under this system the teachers would not be allowed to take private tuitions to avoid any bias in the internal assessment system. UGC has instituted 100 national associateship to enable scientists working outside the university system to avail themselves of research facilities in university laboratories and enable scientists in research institution to work in industries. This is part of the faculty improvement programme under which teachers in universities and colleges can work in other universities for acquiring further knowledge. UGC has also earmarked Rs. 30 crores for support of research including R and D in universities in the Fifth Plan identified in the national S and T plan (See Vol V p 483). This is on the basis that the Fifth Plan allocation for the UGC will be Rs. 210 crores. UPSC is reviewing its whole examination process with the help of academic experts and is diversifying its question papers (using the 3 part question paper scheme) and building question banks.

Adult Education and TV :

As noted in the last issue (p 392), from July 1, the Madras TV coverage extended to 61 lakh people over an area of 12,000 square kms. To use this wider coverage, the Union government is installing 114 community TV sets for the rural areas. The sets are serviced by 41 trained technicians and are maintained by the Panchayat Radio Organisation. The government is also organising Rural TV clubs on the model of Radio Rural Forums and Farmers discussion groups. In the rural areas of North Arcot—Arkonam, Vembakkam, Anakvoor, Nemili and Kaveripakkam panchayat Unions—24 TV sets have been installed. The State government has also set up a 6 man committee headed by the Vice-Chancellor, Madras University to make an indepth study of the social effects of Horse Racing in the State. The Committee will report its findings by April 1976.

Science :

The Railway is using computers to solve its civil engineering problems. Its Civil Engineering Soft Ware Centre develops computer programmes and a library of programmes collected from Zonal railways, as a result of which there is a reduction in the overall cost of construction and maintenance and an increase in the capabilities of its professional personnel. In July, the Department of Science and Technology announced the procedure for processing requests from firms and industries for setting up capacities for the manufacture of items based on technology developed by any of the CSIR laboratories or approved by the Department. An inter-departmental screening committee, including a scientist from the laboratory whose technology it is proposed to use, will consider each

application and after deciding if the project is based on the technology and is basic to its manufacture and on that basis will issue a certificate for the manufacture to start without any further procedures. The 2 day seminar organised by the Council for the Application and Extension of Technology to Rural India (AETRI) in Delhi in July laid down the main guidelines for the transfer of appropriate technology to rural areas. At the central level, policy guidelines and effective co-ordination of scientific and financial support is to be ensured, at the State level there is to be close guidance, co-ordination and allocation of work and smooth flow of funds but it is at the district level that the three groups—scientists, administrators and the social action group—have to work side by side to apply the technologies to the local rural problems. In addition scientists and technologists will have to undertake on the spot study of actual working condition of rural technicians. In its turn India is aiding 50 developing countries with knowhow, equipment and technical experts for their various development projects. During the period 1970-75, India deputed 440 experts to other developing countries and has provided over 18,000 training opportunities for specialists from these countries. In the area of solar energy, a co-ordinated project on solar energy utilisation is being developed at Coimbatore, Jodhpur, Ludhiana and Kharagpur, following the work done by the Central Arid Zone Research Institute at Jodhpur. An efficient and low cost solar water heater at a cost of Rs. 300 has been developed, along with 5 types of solar cookers or ovens which are now under field trials. They are being used to prepare a variety of dishes from cakes and biscuits to roasted potatoes, fish, chicken, vegetables and rice cum dhal—each of

which is readied in 20 to 25 minutes. The Union government is taking over the 60 year old Pasteur Institute at Coonoor. A new society is being registered in Delhi and its production department will continue to manufacture rabies vaccine and later polio vaccine. In addition it will have a research wing under ICMR. ICMR has also decided to initiate studies in drug toxicology on selected groups of drugs including anti-biotics and vitamins at its Food and Drug Toxicology Centre at Hyderabad. The major concentration of the Council is on the national priorities—communicable diseases, fertility control and nutritional and metabolic diseases. Its cholera research programme at Calcutta has devised a new vaccine which provides complete protection to children below 5. In leprosy, the experiment in Tamil Nadu involving 3 lakh people showed that BCG vaccine might provide some protection against leprosy.

Health:

Maharashtra has adopted the Maharashtra Family (Restriction of Size) Bill, under which all those who have 3 children will be sterilised. If, however, all 3 children are girls or boys, the couple will be allowed to have a fourth child. It has been estimated that there is one such couple in a population of 20,000. Punjab, Andhra Pradesh and Haryana have under consideration similar compulsory sterilisation legislation. The Medical Council of India has decided to make in-service training in the Family Planning clinics for one month compulsory to all MBBS students during their internship. Also the Council has decided that every intern should perform at least 5 sterilisation or 5 IUD insertions. Questions on family planning are to be included in theory,

practical and oral examinations throughout the MBBS course. The State government has asked District Collectors to organise intensive family planning campaigns in the district to achieve the target of 5 lakh sterilisations for 1976-77. Simultaneously the Madras branch of the Family Planning Association of India, launched in early July a community welfare package programme on health, nutrition, population control and family planning in two wards in Madras. The basic needs programme is aimed at the poor section

in slums or rural areas through demonstration for the preparation of cheap nutritious foods, along with immunisation and facilities for sterilisation. A survey of the Consumer Council of India which examined the toothpastes sold found that they are simply tooth cleaners and have no ingredient to prevent decay. It also made a finding that 7.2 per cent of school children suffer from deterioration of teeth, 70 per cent from caries, with a lower incidence in rural areas.

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V Employment

RBI's April Bulletin reviews the country's Crash Schemes for Rural Employment and points to their limitations and reason for failure. The first was the rural works programme of the Third Plan (1961-62 to 1965-66) aimed at generating employment for one lakh persons in the first year in terms of 100 day work for each person, ending with employing 2.5 million persons by the end of the plan. Starting with a proposed outlay of Rs. 150 crores, it reduced it to Rs. 19 crores and actually spent Rs. 8 crores, providing 100 days work each to 4 lakh persons. Its failure is attributed by the review to: (1) not following the criteria laid down, (2) defective planning and incorrect estimates of locally available material, (3) weak organisation, (4) ignorance of the real needs of the local area and (5) lack

of co-ordination between Union and State governments. In 1971-72 the Crash Scheme for Rural Employment was started. Aimed at creating employment and through it durable assets in every district, the scheme was to generate employment or 1,000 persons in every district for 10 months in a year. To generate 2.50 lakh mandays of employment, a sum of Rs. 12.50 lakhs per annum was allotted on an average to every district. For 1971-72 Rs. 50 crores was allotted and for 1972-73 another Rs. 50 crores was allotted and for 1973-74 a sum of Rs. 42.74 crores was made available. Thus the total outlay for the scheme was Rs. 142.74 crores for the 3 years. Of this amount, the actual amount released was Rs. 122.62 crores and the expenditure by the States was Rs. 125.38 crores. 10 States including Tamil Nadu and all the Union Territories

spent more than the Union funds released to them and 11 States spent below their allotment. Against the objective of Rs. one lakh generating 17,500 mandays of employment at the wage rate of Rs. 4 per day, the scheme created 3,168.35 mandays employment, Rs. one lakh creating 25,270 mandays of employment with the unit cost being Rs. 3.96 per manday, and all States paying less than the targetted wage. There was poor response by labourers to the scheme because (a) the wages were not commensurate with the work done, (b) of the interference by contractors and (c) of the preference for working on own farms. Also to be noted is that female workers though participating less than males, showed a greater employment intensity. Of the total Rs. 95.4 crores expended, Rs. 61.63 crores or 64.7 per cent was spent on road construction, in most States 80-85 per cent was spent on roads, which without any specification resulted in roads of varying standards. 11.9 per cent was spent on minor irrigation. This again varied from State to State, with Tamil Nadu spending only 5.6 per cent. 8.1 per cent was spent on soil conservation, afforestation, flood protection and drainage. This was the most durable of assets—land reclamation over 15,927 hectares, soil conservation

over 25,207 acres, afforestation over 29,245 hectares drainage over 1,07,777 hectares and floodprotection over 1,79,255 hectares. On the organisation side, the scheme did not give preference to backward districts as a result of which schemes were undertaken in developed areas, labour shortage emerged as a major bottleneck in the course of the work, some schemes were abandoned after spending money because of technical objections by other government agencies, the survey required before launching the scheme was almost never carried, and there was the usual corruption and false muster rolls. Any future such scheme can learn from this useful review. The State government introduced in July a subsidy cum loan scheme involving expenditure of Rs. 7,500 per family of the freed bonded labourer. One third of the amount is a government subsidy and the rest is a loan, all to be used on land assigned to the family. SFDAs will make the loans to the ex-bonded labourers in districts where they exist and in others the banks will make loans at interest to be borne by the government. As of 2, July, 266 bonded labourers have been released in the State, South Arcot with 587 topping the list, followed by Coimbatore 499, Nilgiris 481 and Tiruchi 477. Lands have been assigned to 1,200 of the labourers to date.

VI. Other Items

Centre of Development Studies :

A symposium of 25 economists in the country on the subject of Rural Unemployment—some conceptual and methodological issues—, was held in mid July after a 2 year preparation at the Centre of Development Studies, Trivandrum, jointly sponsored by the Indian Economic Association (see Vol. IV p. 559) and the ICSSR. A key paper and other papers commenting on it written by the participants formed the basis of the discussions. A summary statement issued by the symposium described briefly the main developments. "During the first part of the symposium the theme was the multi-dimensional nature of the concept of unemployment recognised in the recent discussions on the subject. In an economy characterised by wage paid employment, unemployment could be thought of essentially as the number of persons available for and openly seeking work and hence a one dimensional approach to unemployment would be adequate. But in an economy like ours with a variety of work-sharing income-sharing arrangements it is necessary to have a broader notion of unemployment as inadequate utilisation of manpower and hence it must be approached in terms of time, willingness, income and productivity. Some classificatory scheme to enumerate and evaluate different aspects of the unemployment problem based on these different criteria were discussed. A major problem that was raised was whether an aggregated figure of unemployment could be produced from a multi-dimensional concept of unemployment. The difficulties involved in such an aggregation were

pointed out, but it was felt that for many practical purposes an aggregated figure would be necessary.

In this context, it was felt that the problem of measurement of unemployment could be usefully viewed in two distinct ways. On the one hand, relevant for short term policies, there was the notion of unemployment with reference to the labour force as presently constituted (i.e. within the confines of the existing economic organisational structures). On the other hand, there was the broader concept of unemployment as under or non-utilisation or 'unproductive' utilisation of human resources, a form of 'social waste.' A number of operational problems were seen to arise in respect of both these conception. These were discussed and some suggestions made.

The efforts of the National Sample Survey Organisation to collect detailed and valuable data on unemployment and underemployment in rural areas were deeply appreciated by the participants. Since unemployment could be measured either in terms of unutilised labour time or in terms of persons who are unemployed, it was suggested that NSSO measure the two distinct sets of unemployment rates that would result. It was also suggested that the National Sample Survey Organisation be requested to make available, to the extent possible, the raw data on unemployment, to research institutes and universities. This would facilitate, for instance, the computing of a number of distinct rates of unemployment, based on various definitions and enable

different scholars to analyse and interpret the data according to their own preferred schemes of analysis.

It was recognised that the conventional concepts of unemployment adopted in developed industrial economics were appropriate only in the case of wage paid employment. It was also suggested that unemployment data broken down by various categories of persons and households, classified both with regard to the types of occupation and with regard to the amount of land and other important productive resources possessed by the persons and households, would be particularly useful.

The symposium also discussed trends in rural unemployment during the past two decades. The problems of concepts and measurement and of aggregation presented themselves concretely in this context. While it was agreed that no unequivocal conclusion can be drawn from the aggregative data the rural unemployment situation as a whole appeared to have worsened since the middle sixties.

As the symposium progressed it became clear that the issue of measurement cannot be separated from causality on the one hand and policy on the other. In this sense rural unemployment cannot be studied in isolation from the conditions of the rural economy as a whole, since other factors such as the distribution of productive resources and modes of production directly influence the utilisation of labour. Concern with short term economic policy often led on the measurement aspect alone and to specific approaches to the problem of measurement predicted on an apparently limited range of employment policy alternatives. The broader concept of unemployment and under-employment as forms of 'social waste' stimulated

considerable discussion. It was pointed out that non-utilisation and under-utilisation of such an important resource as human labour was intimately connected with the mode of economic organisation. It was also emphasised in this context that unemployment or under-employment were much more a product of the political, social and economic constraints faced by people, particularly the rural poor, rather than of individual choices made by people.

The case of bonded labour is one obvious example, and the case of female unemployment another. The discussion on the issues thus raised showed the clear need to gather data not only on unemployment as such, but also on the conditions of work and on the relevant socio-political constraints. It was felt that this sort of information—essential for an analysis of the rural economy as a whole, and thus a precondition for an adequate understanding of the problem of rural unemployment—could be best obtained through intensive micro-studies at the level of the village. Such studies, it was felt, could not be conducted by the National Sample Survey Organisation, but had to be done by individual scholars, research institutions, and other agencies.

It was decided that the Centre for Development Studies be requested to take the responsibility of editing the proceedings of the symposium and that the ICSSR be approached to give financial assistance for the publication of a volume containing the papers and the summary proceedings."

Council of Social Development :

The annual meeting of the Council of social Development was held in Hydera-

bad on July 5. The work of the Council during 1975 was reviewed. The projects on Non-Formal Education of women in Mahboobnagar and on wastage of children were completed during the year, three publications of the council on Social Survey Family Planning in two industrial units, and rural levels of living were brought out and the Methodology course run as usual. For the coming year further studies on Family Planning, on assessment of the SITE programme, and on growth centres are to be undertaken. The finances of the Council are in poor shape and will not improve until a core grant from the ICSSR is made available to it.

Valluvar Kottam:

A three day Seminar on Valluvar bringing together the results of the 5 year research undertaken by the 3 Universities in the State was organised in mid July in the newly built memorial to Valluvar called Valluvar Kottam by the 3 Universities and the International Institute of Tamil Studies. Some 20 research papers were written for the occasion and the discussions brought about a consensus on the contribution made by Valluvar to language, religion, economics, politics and personal life. Now it is for the research bodies to publish the research undertaken so far and diffuse the results in language which can be understood by people here and everywhere.

Non-Formal Education:

The Tamil Nadu Board for Continuing Education organised its Annual Conference in mid July bringing together some 150 participants—from the departments of government and voluntary agencies from all over the State. The theme of the conference was a Three Year Plan of Non-

formal Education to be operated by the government's newly created Special Office of Non-Formal Education. The Conference functioned in four commissions—dealing with policy, programmes, finance and voluntary agencies co-operation—and produced a 3 year plan which was unanimously adopted and forwarded to the Director of Non-Formal Education. The Plan sets forth as the priorities non-formal education for small and marginal farmers and landless labourers, and school drop-outs and poor adult illiterates, and proposes a project starting in about 50 blocks for both drop-outs and adult illiterate agriculturalists, gradually extending the coverage to all of the State's 375 blocks by the end of the 3 year period.

College Days, Anna Kalaimanram and Madras University Union:

Madras Medical College started its semester with a meeting of its staff in mid July to consider the objectives of medical education and modern methods of teaching and learning. There was a good exchange and some consensus on the major objective of serving the poor rural majority in the interests of promotive health and means of preparing staff and students for this purpose. Queen Mary's College, Madras held the inauguration of its college union towards the end of July when the need for the Union helping each student to define her objective in going in for a costly college education was stressed, and the opportunities provided by the semesterisation and community's social service recognised. A philanthropic society, the Anna Kalai Manram, celebrated its anniversary by collecting funds from its members and using it to distribute text-books to poor and meritorious students in the city

schools. Some 200 students were beneficiaries of this gift programme. The Madras University Union, the organisation of university students banded together for sports, also celebrated its annual day in mid July, when the inter-university triumphs of the university team were recalled, and individual cups and medals presented to the winners in the Union sports. The need for expanding the membership of the Union and starting a women's wing in the Union were emphasised.

Tata McGraw Hill :

The Board of Governors of Tata McGraw Hill met in Bombay in July. On the basis of the accomplishments in the field of publishing in the last four years, the Board adopted a 5 year plan to develop indigenous publishing as well as adaptation and translations. There is a large area in the field of university and engineering publications on the basis of work done by Indian scholars which the Company decided to explore more intensively for the future.

CABE :

The steering committee and the committees on structure and non-formal education of the Central Advisory Board of Education met in July in New Delhi. The varying stages of implementations of the 10+2+3 structure, the lack of a common approach with regard to the +2 stage and the need for Union assistance to make the vocational streams at that stage a reality were emphasised. On non-formal education the need for the programme in two districts in each State to be backed up by curriculum cells and units for the production of reading materials for the 2 priority groups of school drop-outs and adult illiterates in the age-group 15-25 were stressed.

IAEA and IUACE :

The Executive Committee of the Indian Adult Education Council met in New Delhi on July 16 and reviewed the results of the national symposium on Extension Workers and Adult Education at Ludhiana and the workshop on Curriculum Construction for the age-group 6-14 in Surat. It noted the seminars on curriculum for the age-group 15-25 in Calcutta and on women in Tirupathi that are to be organised in the second half of the year. It also approved a 14 day workshop on training and in curriculum construction that is being planned at Literacy House, Lucknow and confirmed the arrangements for the Annual Conference on October 15-18 in Mysore, which will be inaugurated by the Vice-President. The Executive Committee of Indian University Association for Continuing Education also met in New Delhi on July 18 and reviewed the four national programmes for the year in Chandigarh, Shillong, Tirupathi and Bombay and noted the 6 weeks training programme at Madras University on Adult Education as a post-graduate discipline. It decided to recommend to IAEA that the two associations might establish the post of Director of Adult Education to build up a sound and expanding programme for the 2 associations.

UNESCO National Commission :

The steering committee of the UNESCO National Commission met on July 18 to review UNESCO's draft programme and budget for 1977-79 and its medium term plan. Among the suggestions made for forwarding to UNESCO were the development of an integrated rural development plan, the restructuring of the whole adult education programme, the development of science and technology for Asian countries and the promotion of news agencies in under

developed countries. Also the need for restructuring the UNESCO Secretariat to allow the medium term plan to function effectively was emphasised.

Drugs :

The Union government's Committee on Drug Adiction and Control met on July 23 and decided to use the seven States survey on the status of drug addiction among school and college students as the starting point of its enquiry. Studies are also being organised from the Narcotics Commissioner and medical and psychiatric specialists on the preventive and regulatory aspects of the problem. The committee will complete its work in 9 months and report to the government on the action that must be taken to deal with the problem.

Jawaharlal Nehru Award and Vanamahotsava :

The Jury for the Award for the Jawaharlal Nehru prize for international understanding met on July 23 and reviewed the various nominations for the award for 1975. It also decided on procedures for announcement of its decisions. In this State, July 25 was celebrated as the Vanamahotsava Day, with a function at Raj Bhavan when a campaign for tree planting in the State was launched.

Tamil Nadu Academy of Sciences :

The second meeting of the Executive Council of the Tamil Nadu Academy of Sciences was held on July 31. It reviewed a number of programme suggestions made by its members and decided that for the coming year, the Academy will concentrate on publishing annual Journal containing original con-

tributions to the sciences and a monthly journal in Tamil popularising science, periodic seminars, starting with one in September on a Science and Technology Policy for Tamil Nadu, and the establishment of panels to review the state of the art in some of the sciences.

International Institute of Tamil Studies :

The General Body meeting of the International Institute of Tamil Studies met on July 28 in Madras. It elected 2 more members to the Board of Governors, approved the accounts for 1973-74 and for 1974-75 and elected its Chartered Accountant. It amended its rules to set up the post of Director of Programmes and establish a Scientific Council of 15 members consisting of scholars in Tamil archaeology, history, culture etc.

Integrated Rural Development :

The University, on the basis of the Memorandum on Integrated Rural Development issued by the Union Finance Minister, Mr. C. Subramaniam, after a preparatory period of 2 months, organised a seminar attended by the University Departments and some city colleges on Madras University's contribution to the National Plan for integrated rural development. It was decided that each department will insert some aspects of rural development in its post graduate teaching, include rural development among its M. Phil. dissertations, establish a list of Ph.D. theses themes on rural development, and the professors themselves undertake personal research on rural problems. In addition, it was decided that the University and the affiliated colleges will each choose a village to survey and run projects in them.

University Events :

There were the usual meetings of the Syndicate committees, the Inter-Departmental Council, the weekly meetings of Convenors of Schools and selection committees during July. There was also a meeting of the Chairmen of the Science Boards of Studies to discuss the internationalisation of Science practicals which was deferred for the present, and a first meeting of the Board of study in Defence studies to plan its B. A. and M.A. curricula and scheme of examination. On July 24, the first meeting of the Advisory Council on Industry and Trade was held in the University. It decided to launch 10 job-oriented certificate or diploma courses—in material management, in market researches, in data banks, in leather technology, in portfolio management, in agricultural finance, in aqua culture, transportation accountancy, office administration and preparation for intermediate and final examinations. It also set up 10 professional boards of studies to draft the curriculum, teaching timetable, entrance

qualification, and scheme of examinations and charge fees on the basis of 50 percent from the students and 50 per cent from the sponsoring agency. It is to elect a steering committee of 7 members with the Vice-Chancellor as Chairman. The monthly meeting of the Syndicate reviewed a number of subjects and made decisions on them, the most important being the Tamil Nadu Private Colleges (Regulation) Act and related documents.

August Development Seminar :

The paper for the Madras Development Seminar in August, 'Agricultural Trends' by Mr. R. Ramanujam, Professor of Economics, Vaishnava College, Madras together with a summary of the discussion of the paper at the Seminar on Thursday August 26, appears as the first article.

Second Article :

A paper, 'Our Pledge', appears as the second article.

AGRICULTURAL TRENDS IN TAMIL NADU

By
R. RAMANUJAM
Professor of Economics, Madras

Introduction :

The Plan document No. 6 of the State Planning Commission, Tamil Nadu, evolved a Perspective Plan for the period 1972 to 1984, for agricultural development entitled "Towards a Green Revolution". Summarising its conclusions the report says, "The perspective plan on agriculture is oriented towards providing a balanced diet for the population of Tamil Nadu, and the supply of raw materials to the agro-based industry besides, providing large part of the additional employment". The increased production aimed is placed at 111.50 lakh tonnes by 1983-84 from the foodgrain production of 70.30 lakh tonnes in 1972. Rice is expected to reach the target of 76.5 lakh tonnes and six-fold increase in pulses production. In vegetables, oil seeds etc. targets have been defined with the necessary measures enumerated under various heads like seeds, fertilisers, mechanisation, irrigation, finance etc. (Refer Document 6 State Planning Commission, Tamil Nadu Task Force on Agriculture).

In the previous discussion at MIDS, certain degree of consensus was reached on certain aspects of agricultural development in general and Tamil Nadu in particular. It was accepted, in the first place

by all that so called green revolution is only a partial movement based particularly on the use of better seeds on a larger dose of artificial manure. Hariyana for wheat and to a less degree rice in Thanjavur are cases in point. The second place, the total change in agricultural set up in revolutionising is yet to be developed.

- (a) the relationship between the monsoon failure and the price fluctuations.
- (b) Has there been a slide down in the green revolution ?
- (c) Study of the millet economy.
- (d) An in depth study of the supply and demand factors for foodgrains in the economy of the State.

This paper proposed to trace the trends in agriculture under the following heads.

- (a) HYV, (b) Fertilisers, (c) Pesticides, (d) Mechanisation with figures of production and productivity and projections of growth over the perspective plan (1972-84).

TABLE I

Crops		Production in '000' tonnes					
		1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1. Foodgrains—							
A. Cereals—							
(i) Rice	...	4,012	5,007	5,302	5,569	5,595	4,166
(ii) Cholam	...	617	543	464	524	563	270
(iii) Cumbu	...	325	312	273	260	297	141
(iv) Ragi	...	283	334	315	290	287	256
(v) Maize	...	15	16	15	16	16	9
(vi) Other Cereals	..	369	360	317	280	314	141
Total millets		1,609	1,565	1,384	1,370	1,477	817
Total cereals		5,622	6,573	6,687	6,939	7,072	4,983
B. Pulses		109	133	197	197	219	146
C. Total foodgrains		5,731	6,706	6,884	7,136	7,291	5,129
I. Commercial Crops—							
(i) Sugarcane		1,190	1,074	1,076	1,250	1,373	1,189
(ii) Oil-seeds (Total)		846	1,036	1,300	1,076	1,207	936
Groundnut		804	989	1,253	1,035	1,163	902
Gingelly		39	43	43	37	40	30
Castor		3	4	4	4	4	3
(iii) Cotton*		324	323	422	327	341	270

*In terms of thousand bales of 180 kgs. of lint each. The figures for 1973-74 and 1974-75 are provisional.

I. HYV: Improved Seeds:

Indian green revolution, and possibly that in Tamil Nadu are largely a matter of improved seeds pushing up production in well established farms. The growth in production is traceable mainly to such varieties which have been made available to those who could take advantage of it and afford it. It is possibly the easiest to be introduced if only the production and

distribution of better seeds are well organised with a widespread net work for education and introduction to the farmers, particularly the large number of marginal and small scale farmers. In the millets group, the hybrid seeds have really worked very well. The Department of agriculture had planned 33% of the total area with 11% governmental seed Depot supplying and 22% natural supply.

TABLE II

Particulars	Area of production (in Lakh hectares)
Total cultivated area	64.00
Area cropped more than once	38.00
Total area sown	102.00
Paddy irrigated and rainfed	26.00
Millets irrigated and rainfed	18.00
Pulses irrigated and rainfed	16.00
Oilseeds irrigated and rainfed	18.00
Cotton irrigated and rainfed	5.00
Sugarcane	1.65
Vegetables	4.00
Condiments and spices	2.00
Others including fruits	6.70

Source: Report of the Task Force on Agriculture, 1972-84 Volume II.

II. Fertilisers:

The Task Force Report mentions a very wide gap in the availability of organic manure and hence the use of chemical fertilisers has become necessary. Table IV gives the projection for fertiliser consumption for the perspective plan period.

In 1974-75 it was expected that the consumption would be 2.64 lakh tonnes Nitrate 7.00 lakh tonnes of Phosphoric

acid and potash one lakh. But the real position is presented by the Appraisal document of 1975 is as is seen in Table V

The strategy outlined stresses the need to take the fertilisers to rainfed areas to a large extent. Another suggestion, to quote the report is to "to locate a number of adaptive research centres in different agro-climate areas in the state under rainfed cultivation to evoke suitable package of proposals.

TABLE III

Serial number and year (1)	Total area (2)	Area under High Yielding Varieties (3)	Percentage of 3 to 2 (4)	Total area (5)	Area under High Yielding Varieties (6)	Percentage of 6 to 5 (7)
(Area in lakh hectares)						
1. 1969-70	25.18	11.42	45.35	20.72	0.91	4.39
2. 1970-71	26.36	18.19	69.01	19.81	1.69	8.53
3. 1971-72	26.90	22.45	83.46	11.82	3.56	18.92
4. 1972-73	28.51	21.80	76.46	17.79	4.50	25.30
5. 1973-74	27.49	21.43	77.96	18.04	4.76	26.39

Source: Tamil Nadu An Economic Appraisal, 1975 Part I Review.

TABLE IV
PROJECTED DEMAND OF FERTILISERS

Year	Nitrogen (in lakh tonnes)	Phosphoric (in lakh tonnes)	Potash (in lakh tonnes)
(1)	(2)	(3)	(4)
1974-75	2.64	1.00	1.00
1975-76	2.88	1.20	1.20
1976-77	3.12	1.40	1.40
1977-78	3.36	1.60	1.60
1978-79	3.60	1.80	1.80
1979-80	3.84	1.92	1.92
1980-81	4.08	2.04	2.04
1981-82	4.32	2.16	2.16
1982-83	4.56	2.28	2.28
1983-84	4.56	2.28	2.28

Source: Report of the Task Force on Agriculture, 1972-84 Volume II

TABLE V

Year	Demand			Total	Supply			Total	Gap
	N	P	K		N	P	K		
	(in lakh tonnes)								
1972-73	2.7	0.91	0.70	3.61	1.79	0.53	0.48	2.80	0.81
1973-74	3.0	1.08	0.88	3.96	1.95	0.70	0.72	3.37	0.59

Source: Tamil Nadu An Economic Appraisal, 1975 Part I - Review.

III. Pesticides :

The study made by the Task Force brings out clearly the need for and inadequate nature of plant protection measures. Ignorance and non-availability of chemicals at the proper time are the end main bottlenecks in this connection. In Table No. IV details of area covered are given.

The progress in extending the plant protection scheme has been retarded as is evident from the figures given in Table V.

IV. Tractors and Implements :

In the Indian context the concept of agricultural mechanisation could only mean use of efficient tools and implements and pumpsets for the small farmers and baby tractors to some extent for the bigger farms. The following were the estimated requirements of machines by Tamil Nadu farms.

(1) Tractor—100,000

- (2) Trowels—500
- (3) Combined harvesters at 10 no for every district 100
- (4) Thrashers at 4/ block 1,400
- (5) Sprayers and Dusters—power operated—15,000
- (6) Hand operated 75,000

Since the economy should be employ-

ment oriented there need be no great hurry in large scale mechanisation. Service oriented and labour absorbing mechanisation will have to be encouraged to keep up the employment generation projections of the perspective plan.

Apart from these trends which are connected with the development of the agricultural technique, there are the problems of financing, marketing, research and planning which have to be studied separately.

* * * * *

Summary of Discussion

In the discussion of the paper at the Seminar held in the Seminar Room of the Institute on Thursday 26th August, 1976, under the Chairmanship of Dr. M. Srinivasan, Project Director of the Institute, the chairman stated that the HYV programme inaugurated in 1967 was originally for highlighting production processes and increasing yield. But since then, research in agriculture, instead of emphasising solely on yield, has been on a diversified scale. Short term cereals, with a duration of 85 to 90 days and the consequent possibility of multiple cropping is now being experimented with. The increasing and extensive use of inorganic fertilisers, which is a basic necessity for IR varieties of paddy and the financial and supply constraints which make the availability of fertilisers difficult, is leading to the use of less and less of fertilisers.

Further, as rice, which is the main diet of South East Asia, is chiefly one with starch content, research in cultivation is directed towards the fortification of paddy with protein. It is also being realised that consumer acceptability in varieties of paddy is a deciding factor and not mere productivity. As the HYV varieties are mainly strawless and as it, therefore, creates a problem in supply of concentrated fodder for the 250 million cattle of the country, mixed farms growing HYV and ordinary varieties separately are advocated. As there is a shortage in supply of fertilisers, the question of supplementing inorganic manure with urban and rural organic waste is being considered to a large extent. In mechanisation of agriculture, the use of large tractors has been found unsuitable for many areas and the alter-

native use of power tillers has to be seriously tried. One important area where there is no comprehensive state policy, based on research experiences, is water management.

The author, in introducing the paper, said that it frames certain issues, based on the Tamil Nadu Perspective Plan document and data, leading to the major objectives of providing food for the people of Tamil Nadu and resources for its agro-based industries. The second major source for the paper is the information contained in the Tamil Nadu Economic Appraisal, 1975. In the wake of the Green Revolution the following issues have come to the fore, not having received enough attention during the intensive cultivation phase under the HYV programme. No attempt had been made to relate the supply of and demand for food grains on a district and a state basis. A correlation between periodic droughts and grain prices had not been established. The Green Revolution had not been comprehensive enough and had been confined mainly to wheat and to rice to a lesser extent. In any case it has not been a total revolution for boosting agricultural production as a whole. Also, was there a set-back in the Green Revolution even in areas where it has caught on? The Green Revolution seems to have slackened because it was confined to pockets of development and affluence and the fertilisers input was determined inflexibly by the water input. Further, distribution of fertilisers at reasonable prices, which made them accessible and at the same time matched supply and demand, had not yet been perfected. Plant protection schemes through pesticide have not kept pace with the Green Revolution as often the new varieties were found to be more suscep-

tible to pests and diseases. The use of pump-sets, (mechanised irrigation) had reached saturation point, which in turn pointed to near total exhaustion of known and available surface and ground-water resources. The linear strategy in the use of new seeds had led to soil exhaustion—inorganic fertilisers having killed off soil replenishing soil bacteria. In this context soil management had become more important than the use of new seeds. The seasonal availability of agricultural credit was another influential factor which had, however, been left out.

During the discussion of the paper, it was pointed out that three major issues cropped up from the paper. (1) A micro-study by Barbara Hariss of Cambridge University in collaboration with Madras University in 'The Marketing of Paddy in North Arcot Districts' (a forthcoming publication of the Madras Institute of Development Studies) had revealed grave discrepancies between the official figures published by the Departments of Statistics and Civil Supplies on the one hand and primary data collected by researchers on the other. These variations ranged from 50 to 70 per cent which is excessive as compared to the permissible 10 per cent. If a controlled distribution system is to be evolved, on the basis of statistical data, they must be genuine. (2) In a forthcoming publication of the MIDS on crop rotation, Dr. M. Srinivasan has suggested that the mono-culture based on paddy in Thanjavur ought to be replaced. However, it cannot be replaced by sugarcane which has a 12 months gestation period, even over a part of the area. The Task Force of the State Planning Commission had, in proposing targets, assumed unilinear expansion of production techniques and facilities. They had

not made allowance for the fact that paddy was very soil exhaustive and water intensive. Thus there is great scope for economy in use of irrigation water in Thanjavur and its diversion. (3) Water from Mettur was no longer enough for Thanjavur agriculture and could not be relied upon for the second paddy crop. In illustration, the 10 M. cft. of water recently released by the Karnataka Government had been at the expense of their own requirements, as the water needs of the Karnataka agriculture has greatly increased, because of their new sugarcane and paddy crops. The Thanjavur economy has to be re-designed in the light of these changes, ruling out Mettur water supply altogether if necessary. Was it possible to raise a Kuruvai crop in Thanjavur with filter-point wells and could new crops be raised. The trends which came up for discussion next dealt with land occupancy, wages and production constraints. There is a marked withdrawal from land in Thanjavur District as shown by occupancy ratios. While, in 1954, 64 per cent of the land was owned and cultivated, at present the figure is only 47 per cent. Between 1954 and 1964, a decade which witnessed much fluctuation in prices, the wage of the agricultural labourer remained unchanged at Rs. 1.24. By 1967, the statutory minimum had increased to Rs. 6 (and it remained at that level till 1974), but in practice only Rs. 3 were paid. If 20 people are called for farm work and 30 people turned up, only the wages for 20 people were paid as contracted for. Financial credit was another constraint for paddy, unlike sugarcane for which factories paid cash. Out of the estimated credit requirements of Rs. 55 crores, only Rs. 35 crores came from the banks. Nearly Rs. 20 crores were from money lenders against brass, old clothes and silver. Thus, constraints on account of soil, water and credit

had brought about a state of crisis in paddy cultivation in Thanjavur. Further, the number of landless agricultural labourers had increased considerably in East Thanjavur. As for water economy, water logging and about 25 per cent misuse of water has been reported. Investment in drainage did not appear feasible for another 5 to 10 years. It is in South Arcot District that HYV holds out better promise. It is felt that for use as a survey area, the emphasis should shift from Thanjavur and North Arcot to South Arcot where the findings are more reliable and amenable to quantification. In Thanjavur District oral agreements regarding tenancy and share cropping are more common than formal ones and this must be taken cognisance of in administration. Lack of interdepartmental co-ordination in Thanjavur District administration appears to be counter productive. Yet another view was put forward that the limits of growth appear to have been reached generally in the Cauvery delta region. The search for alternative crops should be pursued more seriously, as in Guntur where a significant change over had been effected from tobacco to cotton, sold to Bombay Mills. These progressive changes call for enlightened rural leadership. The use of pesticides is demonstrably on the increase although adulterated stocks seem to be distributed. For mechanisation, the data show that the energy available, both in terms of animal and mechanical power, is in excess of prototypical requirements. A crop rotation based on paddy for Kuruvai and groundnut and gingelly for Thaladi was proposed as the combination was found to be less exhaustive than paddy as a repeat crop. Some traditional varieties were found to be less soil exhaustive than HYV.

The major conclusions that emerged

from the discussion were: in response to the complaints about defective statistics, another survey of Thanjavur District should be undertaken to enlarge the data base reliably; research should be directed to establishing the feasibility of atleast one crop on the basis of rainfall, without resource to Mettur irriga-

tion water; the long term possibility of weening the bulk of the people from consumption of rice as a staple food to traditional nutritive millets should be attempted through new cookery food processing and preservation and crops economical of fertilisers should be encouraged.

OUR PLEDGE*

Closing:

We have now come to the closing moments of this historic conference. Historic, because it is the first time that some 500 Adult Educators and Development specialists from 80 countries have come together voluntarily for the purpose of confronting Adult Education with Development in the hope of saving the Second Development Decade. Historic, because the meeting place of this sojourn has been Tanzania, whose pioneering leadership and demonstration in integrating Adult Education with its National Development we have seen for ourselves when visiting Kivukoni, the Institute, Kibaha and Ujamaa, and as we received the gracious and rousing call to our conscience from our President and Patron, Julius Nyerere, at our opening inaugural. Historic, because of the many binding pledges and decisions that each of us, and all of us, have made, to follow up this rather unique rendezvous. Historic, because you, my dear delegates, have as a Conference given the originator and organiser of this International Conference, the International Council for Adult Education its nourishment and substance, its programme guidelines and marching orders for the next five years—which is the balance of the Second Development Decade.

What is this substance and what are these decisions that have emerged at this our conference?

Conclusions and Decisions Ideas

A first set of conclusions is in the realm of ideas and concepts. We have agreed on a rather radical but constructive critique concerning the strategies that we have been pursuing in Development and Education. These strategies have resulted in inefficient, unproductive, and inequitable, —in effect inhuman—fruits of both Development and Education. A particular insight which emerged is that the lien is not accidental between the technocratic growth oriented models that we have been pursuing exclusive and our almost exclusive concentration on formal education institutions, whose function is to orient and mould its clients, that is, school children and university students, to safeguard and perpetuate the elite dominated status quo, resulting in the absolute neglect of Adult Education, which by its content, message and techniques, is and can be subversive of the status quo. And this was a second empirical idea that we carry back with us, that Adult Education is not politically neutral, that, if it is effective, its crucial and decisive test is how far it is part of the processes

*Extracts from the valedictory address by Dr. Malcolm S. Adiseshiah, to the International Conference of Adult Education and Development, International Council for Adult Education, held at Dar-es-Salaam, Tanzania on June 25, 1976.

of changing our political net works, the upsetting of our socio-economic decision making centres which are a function of our property and assets ownerships, and the transformation of our educational and cultural techniques and contents which will make the total educational process—particularly our formal systems of learning—a change agent. And so a third concept came out of the Conference that Adult Education, like Development, is holistic in its scope, it is the liberation of man, and so is “for Man, by Man and of Man”.

Decisions :

In light of these ideas that we carry back with us, we have made certain decisions, some of which I shall recall.

We have adopted programmes of Action on Education For Development. Based on the statement of objectives and the strategies proposed by President Nyerere, and the UNESCO Draft Recommendation on the Development of Adult Education, we have decided on the lines of National Action, Regional Solidarity, International Co-operation and Commitment as Associations and Individuals. On your behalf and mine, I declare that we pledge ourselves to execute these programmes at various levels, as the International Council for Adult Education, as Regional Adult Education Bureaux, as National Member Associations, and as committed Educators.

Second we have learned from each other about the pitfalls and potential of Adult Education in this vocation of serving the goals of National Development. We saw some parts of this exercise in Tanzania, we heard from Sweden, India,

Yugoslavia, Papua and New Guinea, Guinea-Bissau, Mali, the Arab League, Peru, Vietnam, and above all, we learnt from each other at our meals, while walking on the lawns, in our hostels and in the 24 hour bar which refreshed us spiritually. From this mix of Adult Education in Action, we have decided on certain methods that we will adopt and certain goals and strategies that we will restructure and modify.

Third we have made specific overall and sectoral decisions.

As we heard and approved the 12 sectoral working group reports, the decision that emerges is that we are going to make Adult Education in our countries participatory. In Agriculture and Rural Extension, we are going to work with agricultural technicians and extension workers to make our farmers, particularly the small and marginal farmers and agricultural workers, the real deciders and beneficiaries of the inputs and technology that is theirs. In Development Education, we have decided to make education in all forms—formal and non formal—in planning and execution express peoples' demands for improved living. In Education for Survival, we have decided to make environmental education an integral part of all forms of formal and non formal education, to ensure that Development is sound and viable Eco-Development. In regard to Institutions and linkages, we have decided that the link for Adult Education Institutions should be the community, the people at the local level, and not a vertically descending hierarchy and that the dimension of its education should be Development. In Mass Campaigns and Media and Media Distance learning, the decision is to use the powerful Multi Media net works and the new

electronic media to serve people and build communities through the two way system of feed in and feedback. In Research, the emphasis is on participatory research, built into ongoing or to-be-launched Adult Education programmes. In regard to Strategies for Integrated Development, we have decided that the strategy for Adult Education should be a mass-oriented strategy, and that it must drive us Adult Educators back to the rural masses, to work with them on their felt needs or organize them for fighting for their deprived rights. In Workers Education, the Adult Educator must involve the Worker in Development, at micro and macro-levels, workers not only in the organised urban industrial sector but even more in the massive rural agricultural sector. In regard to Literacy, we have reaffirmed our commitment to literacy as a functional force and the need to devise new forms to bring under control the scandal of mass illiteracy, and create structures which will make it an instrument for change. And then we looked at Culture and Development and firmly decided that Adult Education's task in order to be a force to contribute to endogenous development is to promote, conserve and use local and indigenous cultures as the educational content and curricula of all Adult Education programmes in our countries. In short, we are going to make Adult Education Mass based, Mass oriented and Mass serving.

Such are our conclusions and Decisions.

Result

I now turn to the lasting results of this great Conference.

As one who has participated in many inter governmental and non governmental

conferences, national meetings and technical colloquia and symposia, I know that when all the documents and papers that we carry back with us are filed away in our homes or offices, when our resolutions and decisions are lost in the crucible of Action to which we have committed ourselves, when the inexorable march of time has helped to gather mass and dust around our memories and resolves, what will never fade from our minds and what will remain lighted as in extinguishable lamps is our spirits, are the human encounters that we have participated in, the friendships that we have formed, and the many faces of men and women that we will carry back with us.

I wish to recall some of the unforgettable human faces and visages that this rendezvous will be remembered by. Julius Nyerere smilingly warning us, good brewers, not to overdilute our beer, Roby Kydd ever cheerfully keeping us all on our good behaviour, Lalage Brown's indefatigable and erudite report writing. Paul Mhaiki anxiously ensuring that every body's wants were speedily and efficiently met, Budd Hall scratching his beard and coming out to us with disturbing announcements about meetings, excursions, coffee breaks and non payment of our dues, M. Wembe thundering forth the background and the many high qualifications of the soft spoken and charm laden Majid Rahnama, the earnest and the many splendoured Miss Leila Sheriff setting forth the Arab plans and dreams, the thoughtful and wise leadership of Ben Mady Cisse, Cesar Picon pouring forth his Latin American charm and Spanish on all of us, that gentle Saint Paulo Freire who worked quietly with groups of young people but who successfully maintained his vow of what we in India call Maun, silence and our

charming Lucille Mair who gently rubbing salt into our masculine wounds warned us that in this world as in the next the first shall be the last, and the last shall be the first.

Thanks and Advice:

So in closing, I want once more to associate all of us with the resolutions of warm thanks and expressions of deep gratitude to the people of this country, all those who have helped and served us, the National Adult Education Association of Tanzania, the Vice President who has just given us his valedictory benediction and the President of the Republic. With these thanks, I would also associate the 6 United Agencies, the 2 regional inter governmental organisations and the 14 International Nongovernmental Organisations who have lived with us and helped us reach our conclusions and decisions.

And now, as we return home at the end of this memorable and historic Conference, I call on each of us, members of the Conference to commit himself and herself to Action to make Adult Education an effective integral instrument for the kind of Development, the liberation of Man, to which we have pledged ourselves for the balance of the Second Development Decade. The springs that will nourish this pledge are our own will, and behind the individual will that each of us brings to the task, is the Community of Adult Education to which all of us belong. That Community is the Community of the liberated, unquenchable human spirit that binds us together in an invincible bond that will support and cherish us in our moments of frustration, days of despair, and periods of weariness, and which will never ever let us feel let down, lonely, and lost. It is to that brave brotherhood of the human spirit that I say, on behalf of all of us, adieu, au revoir, and bon chance.

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