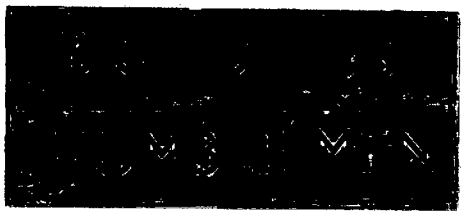

In this feature Yojana *seeks to present the outstanding achievements of some of the many millions of obscure men and women who are working to build tomorrow's India*

CREDITABLE FEAT

AN ordinary Punjabi artisan working in a small printing press in Dhulia (Maharashtra) has successfully developed an offset printing machine, comparable to an imported one, by using indigenous parts.

Karam Singh Chima has been working in printing presses for the past 12-14 years and had been successful in producing ordinary tradle machines. About eight years ago, Chima met Shivadas Choudhury, proprietor of the printing press in Dhulia. They joined up together to produce cylinder machines, for use in printing presses. Till now they have produced successfully five such machines. Encouraged by these early successes Chima and Choudhury decided to produce offset printing machines which were hitherto being imported. For this purpose they erected a small workshop and within a few months developed the machine which, if imported would have cost one lakh rupees. As against this the machine developed by them will cost only Rs 25,000. The machine is of 18" by 23" (demi) size and can print 3 to 4 thousand copies an hour.

Recently a Bombay firm also developed an offset printing machine (Swift 150). But the one developed by these two artisans is quite different especially in regard to its size and the price. The most creditable thing is that ordinary artisans should be able to develop such a sophisticated machine within such a short time.

—R. S. Kulkarni

RARE SENSE OF GRATITUDE

YEAR after year, for four months in a year, September through December, Shantabai Paranjape of Bombay is on her donation collecting mission, out of sheer sense of gratitude for her alamameter, the Hingne Stree Shikshan Sanstha, Poona-4, which helped her to stand on her own feet when she became a widow at the young age of seven. Fifty two years ago, Shantabai it seems was married only to become a widow within a month. Actually she never returned to her husband's house once she came home a few days after her marriage. Her old grandmother who was also a widow, took care of the young Shantabai and her younger sister.

One day, a relation of young Shantabai, who was also brother-in-law of the late Maharishi Annasaheb Karve happened to visit her grandmother's house. On coming to know of her unfortunate condition, he suggested that Shantabai should join the Hingne Hindu Widows' Home, where she would be able to receive primary education free of charge if she worked in the mess. Shantabai, however, refused to leave her old grandmother alone. She agreed to consider the proposal after her demise.

And after some years Shantabai joined the Hingne institution and started working in the Ashram mess, as well as studying in the Ashram school. In due course of time she passed the VIIth standard, completed the Primary Teacher's training course and started working in a village as a primary teacher in 1939. After a few years she was fortunate to get a job in a school run by the Bombay Municipal Corporation from where she retired last year after serving for about 22 years.

Though Shantabai's formal relation with the Hingne institution ended after she finished her education, she could not cut herself away from the almameter which had given new life to her. At Hingne institution there is a practice of annual donation collection by the students at the time of Diwali, called 'Bhaubeej Nidhi". Students going on Diwali vacation are given receipt books to collect donations for their institution. Shantabai decided to repay the great debt which she owed to this institution by collecting donation for it with missionary zeal. Shantabai has been carrying on this mission for the past many years. Her younger sister Aautai, who also became a widow, assisted her elder sister till recently in her house to house collections. Staying at Nala Sopara, about 50 km. from Bombay, these two sisters used to start early in the morning towards Bombay and return home late in the evening. In addition, Shantabai had to attend to her shool during the day.

When asked about her experiences, Smt Shantabai said, "My experience in this drive has been both good and bad. But a person with a mission must not get disheartened. I always kept before myself the example of the late Maharishi Karve and other workers who had to go through many such experiences."

In the beginning when these sisters started collecting donations the total collections did not go beyond a couple of hundred rupees. But as years passed by, the members of houses they visited were convinced of their sincerity of purpose. The figure started rising and the sum collected from middle class houses last year alone amounted to Rs 12,000. All told, Shantabai and her sister have collected nearly Rs 1.43 lakh as donations for Hingne institution. Now-a-days when the month of September arrives many families from Borivili to Charni Road wait for Shantabai's familiar visit.

Couple of years ago, Shantabai lost her younger sister. However, neither age nor the loss of her sister has dampened her enthusiasm. She has set herself a target of reaching the figure of Rs 2 lakh when she says she would retire. But Shantabai had said this earlier also when she had not completed her first 1 lakh rupees.

—Avinash Godbole

YOJANA

Fortnightly Journal published in English, Hindi, Assamese, Bengali, Tamil, Malayalam and Marathi on behalf of the Planning Commission

Vol. XVI No. 22

December 1, 1972

Agrahayana 10, 1894

Yojana seeks to carry the message of the Plan, but it is not restricted to expressing the official point of view.

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Tel : 383655, 381026, 385481/340/402/420

Telegraphic address : **YOJANA, New Delhi**

Business Office : **Business Manager, Publications Division, Patiala House, New Delhi-1.**

Inland Subscription : **Annual Rs 7.50 Two years : Rs 13. Three years : Rs 18.**

Foreign Subscription : **One year 15 sh. or 2.50 U.S. dollars. Two years : 26sh or 4.00 U.S. dollars. Three years : 36 sh or 5.00 U.S. dollars. Single copy : 18 d. or 15 U.S. cents.**

Lest We Forget

The greatest grace of gift, perhaps, is that it anticipates and admits of no return.

—**Longfellow**

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A Symbol of Asian Resurgence

ASIA72, the third international trade fair now on in New Delhi, has a meaning and a purpose much deeper than the spectacle, the glitter, and the hectic activity that may be seen around it. It has particular significance for the developing countries which have been victim of an iron ring of international economic system forged over the long years of colonialism under which these countries have, for the most part, been exporting raw materials and primary produce to industrialised countries in exchange for finished goods, and on iniquitous terms.

Many new and rigorous obstacles have been created, ironically by the more affluent and industrially advanced countries of the world, in the path of international trade—quota restrictions, closed markets that go by the name of common markets, other tariff and non-tariff checks—whose total and direct effect has been to stultify the industry and commerce of the developing world and keep it chained to the production of primary commodities for the benefit of the industrialised nations.

The net result is that while the more advanced countries of the world are leaping forward to progress, the lot of two-thirds of the world's population in the developing world has relatively deteriorated which has become increasingly pronounced and perceptible in the last two decades. Their rate of economic growth has slowed down and the disparity between the developing and the developed world has been growing. For every one rupee that the developing world adds annually to the per capita income of their people on an average, the more affluent and industrialised countries add 30. The share of the developing countries in the total world exports has declined by about 10 percentage points from 27 per cent in 1953 to under 17 per cent now. It is the same story about the purchasing power of exports of the developing countries, which has been steadily declining. In the mid-sixties, for example, these countries were able to buy for a given volume of their traditional exports one-tenth less imports than at the beginning of the decade. And all this has aggravated the problem of the increasing indebtedness of the developing countries.

The list of disappointments is long. And all the persuasion made in the last quarter century by the affected part of the world bilaterally and at important international forums such as the UNCTAD, for the richer and developed countries to take a more realistic and genuine interest in the faster growth of the poor countries, has borne little fruit. Even three sessions of the UNCTAD, an international body sponsored by the United Nations, have not produced the results that would match the requirements and aspirations of the countries struggling for development in Asia, Africa and Latin America. In fact, most of the recommendations made at the sessions have remained unimplemented.

The significance of Asia 72, the third in the series of such trade fairs held in this continent every three years, lies in the fact that it serves as a show-window of the progress made by the Asian countries in the efforts to diversify and strengthen their economies and contribute fully and equitably to an ever-expanding and profitable world trade.

Sponsored by the United Nations Economic Commission for Asia and the Far East (ECAFE), the first two of these trade fairs were held in Bangkok in 1966 and in Teheran in 1969. Both the fairs were successful in creating greater possibilities in commerce among the countries within the ECAFE region as well the developing and the industrialised countries outside it. The present, which forms part of the Silver Jubilee Celebrations of India's Independence, and has been essentially organised by the host country, is designed to carry forward this movement.

THE principal objective of the fair is to bring together different countries and enable them to appreciate the progress being made in different fields and strive to draw mutual benefit out of this intercourse. Here we see the juxtaposition of technological accomplishments of various people and highlights of the important role which technology plays in national development. For developing countries such as ours there is much to learn from the advanced technologies of the industrialised countries which would shorten the period of achieving substantial increases in productivity and prosperity. The transfer of technology has, however, to be on a selective basis to suit the individual requirements of the developing countries in the light of their indigenous skills and institutional structures. There has been a strong tendency to connect technology with aid policies and make the necessary technologies almost unavailable on reasonable and equitable terms for the poorer nations to draw benefit from them for self-reliant growth. Happily, much progress can be made even by a judicious technological exchange between the developing countries themselves. And the Fair has done well to organise a seminar for this all-too-important question facing the entire developing world.

The Asian identity has greatly increased since the Second War; so has it been of late with the developing world as a whole. It is not as though Asia is striving for pan-Asianism. Nor do we in India want to reproduce, in our efforts for progress, the harmful effects of the classical industrial revolution. As the Prime Minister has put it appropriately, "progress should not mean increasing complexity but greater simplicity of tools and of living itself. The processes of industry should lead to an improvement in the quality of articles of daily use." The Asian Trade Fair provides some stray glimpses of this striving, of this ceaseless effort to rebuild Asia.

Aid through Special Drawing Rights

R. S. ARORA

PERHAPS in the field of international economic relations, 1971 may go down as the year in which the post-World War II international economy began to disintegrate. The temporary adoption of an inconvertible U.S. dollar has been seen as marking a breakdown of the Bretton Woods international monetary system. The existing international monetary system, on the whole, tends to ignore the needs of the developing countries. For the last several years India along with other developing countries has been pleading for international monetary reforms which would ensure larger flow of economic growth resources from the developed countries to less developed countries on easier terms and conditions. In this context it is worthwhile examining the nature and significance of the role of Special Drawing Rights in relation to the growth of the less developed counrties.

The Background

During the 1950s the International Monetary Fund (IMF) scarcely realised that its ability to finance the drawings of its members would be seriously impaired if the United States and the United Kingdom were to have balance of payments deficits. It took the IMF quite a few years to admit that it would need supplementary resources from the surplus countries to finance the drawings of the deficit countries. The IMF was indeed late in recognising that there was a long-run problem of assuring an adequate but not excessive growth of monetary reserves. During most of the 1960s there was only a very small increase in the gold reserves of the countries outside the Communist bloc. Most of the increase in monetary reserves in this period was in the form of official holdings of dollars and was the consequence of the United States balance of payment deficits. Almost all the newly mined gold was absorbed by industrial uses and private hoards so that except when the Soviet Union sold gold to finance imports of wheat there was no increase at all in the gold reserves of the western countries.

The surplus countries of Europe gradually became less willing to increase their reserves in the form of dollars. In any case the United States realised that it was not in its ultimate interest to have a large and steady increase in foreign official holdings of dollars, particularly when its own reserves were not increasing. It became increasingly apparent that if monetary reserves were to grow at a rate suited to an expanding world economy, it would be necessary to have a new reserve asset to supplement gold and foreign exchange.

Ten leading financial nations, popularly known as the "Group of Ten" discussed various aspects of the problem at various meetings from 1963 to April 1968. Eventually a "Paper Gold Plan" technically known as the Special Drawing Rights (SDRs), emerged from the efforts of the Group of Ten in consultation with the International Monetary Fund, during the historic meeting held in Stockholm on March 29-30, 1968.

Opposition to SDRs

France consistently opposed the "Plan". During the Stockholm meeting, French Finance and Economic Affairs Minister, Michel Debre urged that France had "no hostility against Special Drawing Rights", *per se*, since "in the future monetary order, means of international credit could by this means be supplemented in a very useful way." But he attacked the role of the dollar and the pound sterling as primary reserve currencies.

In order to win French acceptance of the Plan, the United States agreed to several compromises that generally favoured France and its five partners in the European Common Market. The most important compromise was an agreement on a plan to amend the IMF voting rules in such a way that the 85 per cent majority vote required for activating the SDRs would also apply to such normal IMF operations as raising quotas in the Fund and affecting a uniform change in the par values of member-currencies; an operation equivalent to raising the official price of 'gold'. This implied veto power for the EEC countries if they voted *en bloc*.

The New Plan

At last in June 1968, as 20 Articles of the International Monetary Fund Agreement were amended in order to establish the Special Drawing Rights facility and to effect certain other changes in the Fund's practices and procedures. The new plan was to work as under:

(*i*) Every SDR was denominated in terms of the gold value equivalent of one U.S. dollar but SDRs would not be redeemable in gold.

(*ii*) SDRs would be allocated to participants in proportion to their IMF quotas. For instance, the United States had 24.6 per cent of the total IMF quotas, and thus could receive 246 million dollars of each 1 billion dollars of SDRs created.

(*iii*) All IMF members would be eligible to participate.

(*iv*) Allocation of SDRs would take the form of book entries of credit in a special drawing account of the Fund. SDRs could be transferred directly from one country to another in the accounts of the International Monetary Fund in much the same way as other reserve assets are transferred.

(*v*) SDRs could be transferred by debiting the SDR account of the user and crediting the SDR account of the receiver, with the receiver paying convertible currency to the user.

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(*vi*) Countries were to use SDRs only for balance of payments needs or in the light of their reserve position.

(*vii*) Each participant would be obliged to accept SDRs up to an amount equal to three times its cummulative allocation. This means that if a country had initially been allocated 100 million dollars in SDRs and still held all of these in its reserves, the obligation to accept additional SDRs would amount to 200 million dollars.

(*viii*) For the first five years a country's average net use of SDRs could not exceed 70 per cent of its average net accumulated allocation during this period.

The IMF was to act as a traffic controller. It was widely admitted that the scheme of SDRs would not provide a solution to all the monetary system.

The rich countries have so far received more than 6,000 million dollars in "paper gold" while the poor nations have been benefited to the extent of 2,400 million dollars only.

The immediate reaction of the developing countries towards the SDRs was that it was a useful development since most of the developing countries have a far greater deficiency of reserves than the developed ones. Therefore, the new plan was thought to be important for them not only because they would share the allocations of Special Drawing Rights but also because the growth of reserves would permit world trade and payments to continue to expand. However, UNCTAD-II held in New Delhi in early 1968, urged "government members of the IMF to continue to give careful consideration to applications from developing countries for increases of quotas so as to enable these countries to benefit more from the facilities of the Fund".

Pearson Report

The Lester Pearson Commission on "International Development" in its Report, particularly stressed that the resources of the International Development Association (IDA) could be significatly increased if the government of developed countries could make available to IDA part of the Special Drawings Rights which they were allotted by the International Monetary Fund. The Report *inter alia* said: "The activation the SDR scheme is an important step in the evolution of the international monetary system. However, it amounts to creation of several billion dollars of additional purchasing power which, as the system evolves, cannot fail to raise the suggestion that a larger fraction of such purchasing power should be steered to developing countries. (Under present arrangements, developing countries could receive only about one-third of SDRs). This is not to say that the magnitude of the desirable increase in world liquidity should be determined by IDA's requirements. But when the scale of the issue of SDRs has been decided on appropriate grounds, there are strong reasons of simplicity and equity for the developed countries to relinquish a part of their quota of the new reserve medium in favour of the less developed countries. IDA may be a channel by which the contribution of the resources to development could be assured".

Lima Declaration

The Declaration of the "Lima Programme of Action" adopted by the "Group of 77" at the second Ministerial meeting held in Lima *de* Peru (October 28-November 8, 1971) specifically urged that:

(*i*) A link should be established between Special Drawing Rights and additional development finance, as envisaged in the International Development Strategy. Developing countries consider this to be the most appropriate way of injecting new liquidity into the international monetary system. Such a link between the creation of liquidity and the transfer of real resources must benefit all developing countries equitably. These flows should take place through IDA and regional development financing institutions. A decision on the link between the increased international liquidity resulting from the creation of the SDRs and the provision of additional development finance for the developing countries should be reached in 1972.

(*ii*) The IMF should create a special facility designed specifically to cover deficits resulting from the implementation of measures intended to liberalise trade among developing countries, providing that the drawings rights under this facility for this special purpose would be distinct from the ordinary drawing rights.

UNCTAD-III

During the third full session of the United Nations Conference on Trade and Development (UNCTAD III) held in Santiago *de* Chile in April-May, 1972 two types of links were seriously considered : (i)An 'organic' link involving the allocation of Special Drawing Rights to IDA, or the regional development banks either directly by the International Monetary Fund, or by developed countries receiving SDRs. The link would thus become an organic part of the process of SDR creation and allocation. (ii) The other (non-organic link) method would involve contributions in national currencies by the developed countries to IDA in proportion to the SDRs allocated to them.

Supporters of the link based their case on the proposition that the creation of SDRs involved a saving of resources which could be used to augment development assistance. SDRs permitted the volume of international liquidity to be made subject to collective decisions of the international community on the basis of rational criteria rather than to the vagaries of gold production or the deficits of particular countries. The distribution of SDRs thereby made it possible to avoid any losses of real income that might otherwise result from an inadequate volume of world liquidity. It was suggested that two questions were involved in any decision on the pattern of SDR allocation: how to distribute the new liquidity; and how to distribute resource savings. Under the present arrangement both are distributed on exactly the same basis, namely, IMF quotas. As the bulk of IMF quotas goes to the rich countries because of their position in world trade and income, the developing countries' share is small.

It was widely felt that from a logical point of view, the developed countries could aid the poorer countries by having the IMF grant the latter incremental allotments of SDRs according to some agreed principle based on needs. The poorer countries could thereby acquire additional resources by incurring continuing current-account deficits, supporting higher rates of real investment and consumption standards simultaneously.

Objections to the Scheme

However, those who have been against the proposed scheme have been advancing several objections. For instance, it is said that (1) it would be impossible to agree on an 'equitable' formula according to which SDRs would be parcelled out among the less developed countries; (2) the resulting increased demands for imports by these countries would add to the existing inflationary pressures in the developed countries; (3) such an organised scheme for international assistance would discourage the efforts of the less developed countries to help themselves; and (4) once begun, the scheme could never be ended. No matter how much the poorer countries progressed, they would always remain claimants to the real resources of the developed countries.

On behalf of the developing countries it has been asserted that none of the above objections stand up to serious scrutiny. Given the will, aid-through-SDRs would be a neat and effective way by which world poverty could be alleviated, economic development promoted, and the neo-mercantilist aspirations of the various industrial nations reconciled.

Indian Stand

During the latest meeting of Commonwealth Finance Ministers, held in London, on September 21-22, 1972, Shri Y.B. Chavan asserted that recent monetary crises had serious consequences for the developing countries. And most of the developed countries which were essentially responsible for such crises generally ignored the interests of the developing countries. He made a strong plea for a link between the Special Drawing Rights and development aid. He argued that some watered down version of a link such as a slight increase in the quotas of developing countries or a somewhat larger share in SDR allocations for them would not be satisfactory. An increase in the relative size of the quotas of developing countries and as such in their share in the management of the World Bank and the IMF was in any case necessary. Apparently, most of the Commonwealth representatives at the conference, if not all, broadly agreed with the Indian Finance Minister.

Later on, while elaborating his thesis at the annual meeting of the executive directors and governors of the International Monetary Fund and the World Bank Shri Chavan observed that presently 100 developing countries exercised only about 26 per cent of the voting rights while 10 industrial countries exercised more than 62 per cent. He held that such a gross imbalance would not be conducive to the evolution of a durable monetary system. And the proposed reformed monetary system must keep in view the needs of the developing countries. He warned that the efforts of the Group of Twenty on this subject can be frustrated if a small group of developed nations tried to dominate orve its proceedings.

It appears from the proceedings of the World Bank annual meeting, held in Washington in the last week of September 1972, that most of the developed countries agreed on the continuing role of the Special Drawing Rights; yet, some of the western powers and more particularly the United States side-tracked the question of international effort for economic development of poorer members of the IMF and World Bank. The U.S. seemed to be still in favour of a small group of developed nations taking major decisions on world monetary system. This approach conflicted with the one adopted by Mr Robert McNamara, President of the World Bank. Mr Robet McNamara had said in his presidential address that extreme poverty affecting hundreds of millions of people in the developing countries required that a decisive choice must be made between political costs of reform and the political risks of rebellion.

It may be recalled that India and several other developing countries have been advancing this logic for the past so many years at all relevant, United Nations forums. In fact longer the time taken by the deveoloped countries in making the right choice greater would be the pains for all of us - rich or poor.

Crash Scheme for Rural Employment

According to the latest review taken on September 30, 1972, the Crash Scheme for Rural Employment (CSRE) introduced in April 1971 has got off to an excellent start in the very first year of its operation, against all odds.

The scheme had envisaged during 1971-72 an expenditure of Rs 50 crore and generation of 875 mandays of employment in a full working season of 10 months. As against this, for the year 1971-72 the expenditure reported so far was Rs 32.71 crore resulting in the generation of 817.24 lakh mandays of employment over a period of 6 months starting from October, 1971. This came roughly to a daily employment of more than 3.2 lakh of persons during the year for varying periods or to an average of 957 persons per district, as against 1000 persons envisaged in the scheme, for 348 districts for which proposals were approved.

For the year 1972-73 the progress so far was equally satisfactory. According to the latest reports available upto May/June/July/August, 1972 received from 16 States and some Union Territories, the expenditure incurred so far was Rs 947.24 lakh resulting in 343.83 lakh mandays of employment.

The progress of the scheme was largely due to the interest and enthusiasm it had aroused among the State Governments, District Administrations, Panchayati Raj Institutions and people's representatives at various levels. Lawlessness was reported to have been overcome to a large extent in some places because the people had found avenues of earning their livelihood through constructive work. In States like West Bengal, and Mysore even educated youngmen, belonging to backward classes, had taken to manual labour.

At many places, the labour for work and payment had been organised in such a manner that some among the groups would assume the role of leadership and facilitate the movement of groups from one work to another.

New position of pound Sterling

Need to Prevent—Value Erosion

G. SRIRAMAMURTHY

IN the Commonwealth Finance Ministers' Conference held in London recently, India has done well to demand full protection to her sterling reserves (officially estimated at Rs 375 crore as in June 1971) against erosion in the value of the pound sterling and satisfactory redemption of her reserves consequent to the pound's renunciation of its reserve role which is conditional to Britain's entry into the ECM. Full details of the form and extent of protection sought for by India are not available. But it is clear that the 1968 Basle Arrangements under which Britain agreed to provide dollar guarantee to 90 per cent of the holders' reserves will no longer be acceptable, as the dollar itself has been in doldrums. Malaysia's reported demand of gold, instead of dollar guarantee would have served as an ideal security, but it does not appear to have been pressed for effectively.

It is also rather naive to expect Britain to accept such a demand. However, it will be agreed that all such measures may, at least, serve as makeshift arrangements and cannot provide a wholesome and built-in security against the changing fortunes of the major nationalist currencies on which world monetary liquidity in general and that of developing countries in particular, depend.

The Problem

Briefly, the problem can be stated thus : Given the two conditions that India, as a developing country, has to depend heavily on reserve financing (as against foreign assistance) of her foreign trade and that her trade with the sterling area, though declining, is still important (forming 40 per cent of exports and 22 per cent of imports), how best can India preserve the value as well as the buoyancy of her sterling reserves against a none-too-secure pound sterling, short of joining in the 'run on the pound?'

It may be recalled that even after the re-alignment in the par values of the world's major currencies in December 1971, the sterling has had to float again since June 1972 (at the moment of writing, it is still afloat) resulting in its virtual devaluation and jolts and jerks to India's export trade. This was because the instability in rupee-sterling link brought about a near confidence crisis in the Indian export market. Further, with a 2¼ per cent margin allowed for the pound's float, which at the moment is quoted at 2.40 dollars, even the floor price of 2.38 dollars provided in the Basle agreement stands threatened.

The Proposals

In the circumstances, three questions arise : If India has a stake in the preservation and buoyancy of her sterling reserves, how best can this objective be promoted? Secondly, what is the best method of disposal of the Overseas Sterling Areas' reserves, while the pound's reserve role lasts ? Thirdly, what is the best medium of international reserve asset, and in this context, to what extent can SDRs deliver the goods ?

The first question may now be deemed as mere academic, as Britain seems to have been disenchanted with her traditional honour of being the custodian of Overseas Sterling Area (OSA) countries' sterling reserves and has already made up her mind to get rid of them. Mr Geoffrey Rippon, British EEC Negotiator told the House of Commons : "it is clear to most observers that the reserve role of sterling is no longer of advantage to Britain. Indeed, the reverse is more easily argued." Mr Harold Lever, Britain's former Finance Secretary was all for the euthanasia of the sterling's reserve role. There is no prospect either of the pound's past glory being rehabilitated, specially in the context of Britain's recurring balance of trade difficulties, domestic inflation and economic unrest.

We can, therefore, consider the second question relating to the most satisfactory disposal of Britain's Sterling reserves which are estimated at around £ 2,500 million. Mr Harold Lever has suggested the funding of the reserves with the IMF in lieu of which SDRs can be issued to Britain at 4-5 per cent interest enabling her, thereby, to liquidate her debts to the OSA countries. The interest rate, according to him, is justified, by the gold guarantee being offered in return. The holders can now hold them in the form of SDRs. There is no danger of their unleashing inflation, as it involves only a change in the form of asset. The trend of thought in Britain also appears to deny the Sterling even a second reserve-currency role with the backing of the EEC, as it will become a rival to the dollar leading to massive conversion of dollars into the European reserve currency (as it did in fact, promote that tendency in the recent moths).

Internationalising Reserves

Readers will note that Mr Harold Lever's suggestion for funding the sterling reserves with IMF is part of the wider proposal for internationalisation of all reserves on the lines suggested by Robert Triffin. It is, therefore, to be considered how far this proposal can be extended as a general practice to the emerging prestigious currencies like the 'Yen' and the 'Mark'. This is because few countries would like to sacrifice their monetary sovereignty and banking and insurance advantages, flowing through the reserve role. Happily, however, SDRs are gaining wider acceptability and to the extent this happens,

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the proposal merits attention.

To this writer, it appears, that while the reserve role of the Sterling lasts, the gravity of the problem can be mitigated if a modified Basle type of agreement can be reached providing for a minimum reserve clause as in the original agreement, but gold instead of a dollar guarantee as demanded by Malaysia. (But can Britain be persuaded to this commitment ?) Alternatively, an interest rate linked to the variation in the value of the pound sterling seems to be the commonsense measure against the changing fortunes of the Sterling.

We are now left with the last question. The two principal maladies of the present international monetary system are (i) inadequacy of world liquid reserves and (ii) vulnerability of national reserves centres. Various proposals are made to grapple with these twin problems. One such proposal is the extension of the present two-reserve currency system from £ and $ to a multicurrency exchange standard. But it is obvious that it involves the creation of a super national clearing bank of which Lord Keynes spoke way back in 1943 and found impracticable.

Long Term Measures

A second type of reform suggested is flexible exchange rates in terms of 'crawling' or 'sliding' peg system to correct payments imbalance by countries, more rapidly than may be consistent with important domestic and international objectives. Though the proposal militates against the more important and sounder objective of monetary stability and is, therefore, generally disfavoured, it cannot be dismissed lightly, as the flotation of national currencies either as a rescue operation or, willy nilly, as an operational necessity has been witnessed in the context of the recent world monetary crisis. So long as the rich trading nations do not have the good sense of regulating their currencies to reflect their intrinsic worth, such 'natural checks' have to take a heavy toll of the sinning currencies.

A third reform suggested is the official revaluation of gold as is advocated, among others, by Sir Roy Harrod. But, because of the large 'windfall' benefits which the proposal confers on gold-producing countries like South Africa and the credit inflation it leads to, the measure is not generally favoured. This apart, there is no doubt that giving added imperial glory to the yellow metal amounts to sinning against the time spirit.

Paper Gold

It seems that the 'Paper Gold' is invented in order to circumvent the inherent weaknesses of the national currencies to serve as international reserve assets. The merits of this system, the unconditional nature of drawings, the freedom to draw up to the specified limit without prejudice to a country's domestic economic policies, the owned-reserve type of credit facilities extended to a country, the qualitative superiority of this fiduciary asset etc., were highly acclaimed when the system started functioning early in January 1970.

But it appears that the fears expressed in respect of the SDRs at their inception namely, their being linked to quotas, discriminates against the developing countries, and that they are designed merely as a rescue-operation against the dollar (to reduce pressure on dollar), seem to have been reinforced by the latest events. One commentator observes : "It is clear that as a result of US deficit and the accompanying dollar outflow, the SDRs are under a cloud."

But this reaction seems rather too pessimistic. If any thing, the recent dollar crisis and the international cooperation to weather the crisis witnessed among the chief *dramatis personae*, USA, Britain, West Germany and Japan, instils confidence in the basic good sense of the comity of nations. The dollar crisis, far from portending the failure of the SDRs scheme, indeed, called for its quicker and wider acceptance as an ingenious international reserve asset. And there is evidence of their growing acceptability too. The IMF Annual Report, 1971, observes : "Considered in itself, there is no doubt that the experience to date with the working of the SDR facility has been markedly encouraging. The allocation of Special Drawing Rights has made additional reserves available to a wide range of countries, including many that have not shared in the flows of short term funds. It has strengthened the reserve position of all countries taken together. It has helped to permit reduced reliance on payments restrictions and to avoid undue resort to balance of payments credits."

Having said that, it is well known that the quota-based allocation of SDRs among the developed and the developing countries is far from satisfactory and that something must be done to link the distribution of SDRs with development assistance. The deliberations of the recent Commonwealth Finance Ministers' Conference and the Fund-Bank Meeting suggest increasing, though insufficient, awareness of these deficiencies in the present system of SDRs' distribution. The 'SDR-Aid' link has been supported among others, by Italy, France, Netherlands, Ireland, while the five Nordic countries showed sympathy with the proposal. This writer feels that a combined index of population, (or per capita income), development assistance in addition to quotas, with appropriate weights will meet the ends of justice in the distribution of the SDRs. Maxwell Stamp has suggested increase in the allocation of SDRs to the developing countries which will expand their trade with the developed world. The latter, according to him, can reissue the SDRs thus earned from the developing countries as soft loans. But the proposal merits attention with this rider that the international liquidity thus created should, in part, be transferred to international development agencies, as was suggested by Italy in the recent Fund-Bank Meeting.

Modified SDRs

The proposals made by Mr Anthony Barber, British Chancellor of Exchequer at the Fund-Bank Meeting in regard to the disposal of Sterling reserves were, in substance, the same as the ones advocated by Mr Harold Lever mentioned earlier. They, however, evoked much interest in that he pleaded for a modified SDRs scheme involving (i) a satisfactory relationship between the SDRs and the gold as

(Continued on page 914)

Productivity Oriented Planning

V. S. CHOPRA

WHATEVER the stage of development and economic system, increased productivity is a fundamental requisite in any form of planning. It is now universally agreed that productivity is a major means to ensure economic and social development combined with internal financial stability and the necessary equilibrium of the balance of payments. These two conditions, which must be simultaneously satisfied in fact demonstrate the importance of productivity in economic planning.

Economic development is accelerated by a rational employment of resources. As rise in productivity is dependent upon optimum utilisation of resources, there is a direct link between productivity and economic growth. In view of the national objective of promoting rapid economic development, it is essential that the national plans are reinforced by specific productivity measures at the levels of individual enterprises, public utilities and farms. Such organisations must be given appropriate assistance in the pursuit of a relentless drive for raising the levels of productivity. It is only then that the close relationship between economic development and productivity can be meaningfully utilised for achieving industry-wise and sector-wise targets proposed in the development plans. Raising productivity means improving the quality of the factors of production at the enterprise, sector, regional and national levels.

Productivity is, therefore, an essential tool for economic development on account of the direct surplus which it generates in the economic system supplying the much needed capital. It also sustains the people in their productivity efforts, enhancing their ability to consume or save through the increase in real wages. If the gains of productivity are eaten up with the completion of each production-consumption cycle then these would cease to have much self-generating and self-sustaining growth potential. A degree of firmness is, therefore, necessary in maintaining the long-term objectives. This may be achieved by permitting reasonable degree of capital formation in the process of productivity rise. A socio-economic environment which stimulates growth ambition in the people and provides opportunities for their fulfilment is bound to lead to a prosperous society.

Vital Importance

Referring to the vital importance of productivity in the economic development, the Third Five Year Plan stated that the industry "must yield a reasonable return on capital and provide for capital formation on an adequate scale. Neither the exercise of their organised strength in industrial conflicts, nor laws and the intervention of the state can help the workers much in realising their aspirations. Their gains can arise only out of the strength and dynamism of the economy, the only enduring basis of which is a rising level of productivity. No increase in profits which does not come out of improvements in productivity but has its origin in current scarcity and the stresses of development, can be regarded as a sign of prosperity... The vicious circle of poverty and unemployment and low productivity can be broken only by a tremendous stress on the maximum possible contribution being made by all the participants in the process of production."

It is clear that productivity should be injected and integrated into all vital areas of development planning and its implementation. Indeed, the term 'development planning' should be systematically correlated and gradually become synonymous with 'productivity planning'.

Productivity actions must be accepted as the indispensable instrument for giving effect to the national economic options—in one case it may be development of foreign trade, in another effective decentralisation, and yet another, the reduction of working hours or incomes policy—since improved productivity can alone prevent these choices from becoming false allurements. Productivity action should apply to all centres of economic life. It would not be right to limit the quest for improved productivity to production alone. Productivity must be regarded right from the start as an action effecting marketing as well as production, agricultural services as well as industry, and the public as well as private sectors. Particularly in a developing country like ours, productivity growth is an absolute requirement, if account is taken of the fact that development must be achieved over a shorter historical period.

Other's Examples

That the productivity plans should be integrated with the national plans is being recognised increasingly by both developed countries in Europe as well as developing countries in Asia and Latin America. In France, the fifth national plan includes precise directives concerning improvement of productivity and may be regarded in certain aspects as productivity plan. In countries like Italy, Belgium, Czechoslovakia, Korea and Chile, close contacts have been made between planning bodies and the productivity bodies. "Economic Miracle" by Germany was really a "Productivity Miracle". The productivity council in Denmark is an integral part of the Ministry of Trade and in that capacity is called upon to participate in the planning of various programmes. In some of the countries like France, Yugoslavia, Czechoslovakia, Spain and Greece, productivity organisations have been asked to carry out feasibility and back-

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ground studies preparatory to the drafting of the national plans for economic growth. In Peru, a law has been enacted which incorporates the productivity centres with the planning system of the country, thus promoting cooperation of the productivity body with the official planning authority. The industrial development plan and the law of industrial development and investment were advised by the productivity centre in Uruguay at the request of the planning office and are incorporated in the national plan.

Productivity policy must be intimately connected with the overall growth policy. It follows that any programme of productivity action should be both complementary and supplementary to the economic policy propounded in the development plans. The programme of productivity action should then be linked and integrated with the corresponding national plans for economic growth so that extension of productivity services can contribute to the faithful implementation of the plan. These productivity services would also be able, at critical junctures, to draw the attention of the Government and the planners to such steps as would assure the distribution of the factors of production in the most productive way.

Role of NPC

Productivity action at the macro economic level could commence with the formulation of the plan itself. A better integration of productivity policies into the development process as a whole may be obtained by extending the objectives of productivity organisations like the National Productivity Council and calling upon them to play a role complementary to the Planning Commission, in the elaboration of plans and in acting as practical tool in implementation. There is need to extend the productivity idea from the plant to the entire nation, to emphasise the wide implications that the productivity concept has in harnessing the available resources and to give the productivity function, its due role in economic development programmes both at the policy level, as well as at the implementation level.

The role of the National Productivity Council (NPC) is to be a kind of catalyst for achieving plan objectives through increased productivity. The NPC should be assigned the task of working out a productivity strategy with the same objectives in mind as those adopted by the Planning Commission. The NPC must play its role in stimulating the economic agents. It should serve as a kind of laboratory for testing, whether the models designed by the planners are in fact operational. It may take periodic inventories to measure variations in productivity in the context of the plan targets, for providing a feedback to the planners. Productivity action must be attuned to plan targets and make allowance for the social environment in which it is conducted.

The need to obtain self-reliance more speedily and the compulsion of generating larger employment opportunities underline the urgency to reverse the recent sluggish trends in industrial production and investment and achieve a faster rate of growth. Productivity actions offer tremendous possibilities for sustaining and augmenting industrial production through optimum utilisation of resources. Some of the measures that can be taken in this connection are as follows :

(i) In order to give productivity orientation to industrial policy, the Government of India's industrial policy as enunciated in the Industrial Policy Resolution of 1956 may be suitably revised by bringing in the importance of productivity and productivity techniques.

(ii) The possibility of incorporating certain statutory obligations under the Industries (Development and Regulation) Act, 1951 for maintenance and enhancement of productivity levels may be considered.

(iii) Special incentives in the form of preferential raw material allocation, tax reliefs, etc. may be considered for those enterprises, which conform to or exceed the productivity norms.

(iv) To achieve the planned targets of industrial production, productivity services offered by NPC may be reoriented by diversifying them into more sophisticated fields to meet the changing requirements.

Labour Relations

There is an imperative need for evolving a positive philosophy of industrial relations. Apart from providing good working conditions, proper grievance procedures and appropriate human relations, it is desirable to give the workers a sufficiently attractive economic incentive. The gains of improved productivity have to be shared by the workers as well as the employers consistent with the broad interest of the community. This can be done through collective bargaining for the purpose of achieving productivity agreements at the level of individual enterprises. It must be realised that a rise in wages without a corresponding rise in productivity would lead to stagnation of economy and force a rise in prices whereas rise in wages consequent on rise in productivity would contribute to an overall gain not only for the economy but for the workers also.

The trade union must accept, in the interest of their members and in the interest of the economic growth of the country, their share of responsibility for creating a proper climate of industrial peace and industrial discipline. They will have to be encouraged to take deeper interest in social and educational endeavours on behalf of their members. Gradually they must educate and prepare workers for the purpose of participative management.

Apart from developing technical skills, a proper understanding of techno-managerial aspects of activities would be necessary for the vocational advancement of individual workers. Willing participation of the trade unions in the programme for training of workers in productivity techniques will have to be ensured. In the national task of raising the levels of productivity, training of workers to upgrade their skills and orientation programmes for workers and trade union officials should, therefore, form an integral part of the national plans.

For Unity and Cooperation among Nations

ASIA 72 IS ON

A YOJANA Staff Report by

SIDDHARTHAN KARIYAL

Photographs : ***K. NARAYANASWAMY***

THE Third Asian International Trade Fair, the most ambitious show hosted by India in its Silver Jubilee year, was opened by the Prime Minister, Smt Indira Gandhi in Delhi on a pleasant morning on November 3, 1972. At the impressive ceremony attended by distinguished visitors from around the world, flags went up of India, the United Nations and 47 participating nations, and the sky was filled with white and orange balloons and scores of white pigeons symbolising peace and goodwill. There was the solemnity of Vedic hymns as well as the gay strains on the sweet shehnai by Ustad Bismillah Khan.

In her inaugural address the Prime Minister spoke of the problems and the challenges and the opportunities of the developing nations. No longer could they be passive spectators of their economic exploitation, she said, and only urgent mutual cooperation could halt the trend. Advanced nations had built their affluence at the cost of poor nations.

The aid they offered was generally motivated by a desire to secure short-term policy objectives of donor countries. The trend to connect technology with aid policies prevented the poorer nations from making use of advanced technology. The developing world had thus to unite and cooperate to solve their problems. But there is no question of Asia uniting in opposition on the basis of pan-Asian chauvinism. Rather it would do so for its own progress and that of the world at large. Indeed, the nations of the world must cooperate with one another, the Prime Minister stressed, if this earth has to become not a plundered planet, but one of peace and plenty.

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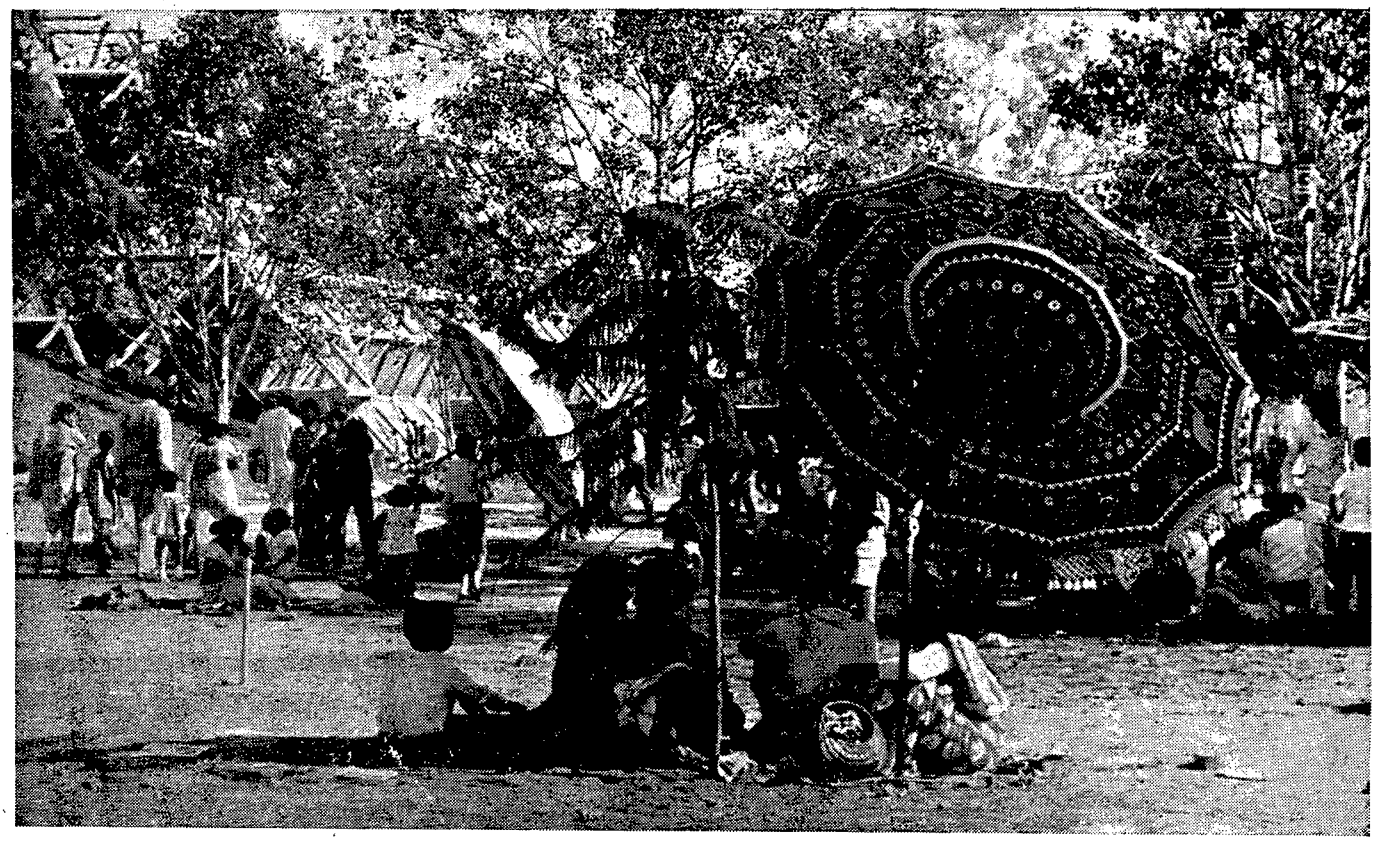
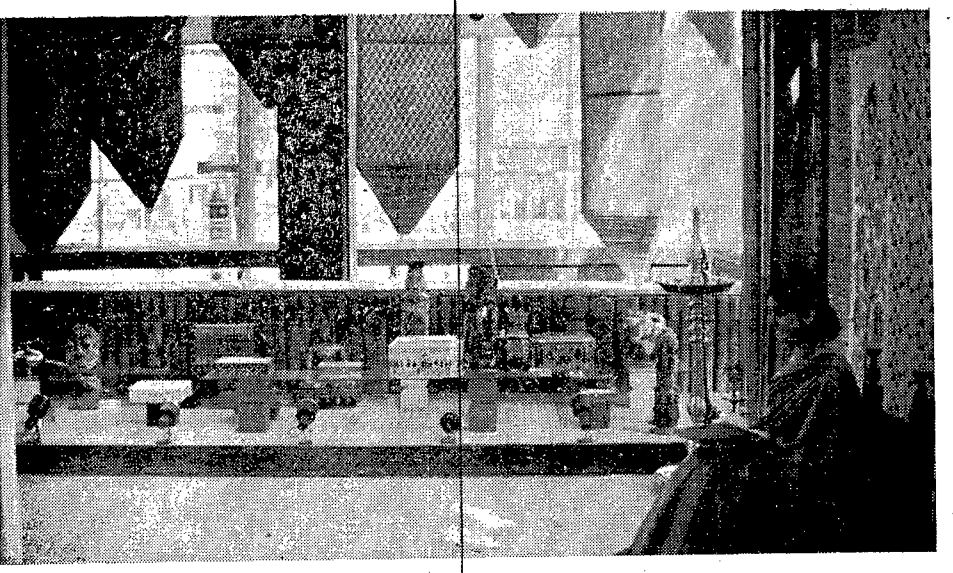
Relaxing at the Fair in psycledelic setting





Exquisite handicrafts and antiques in golden medieval setting

I. Business at the Fair

A general trade fair of the category of the Third Asian International Fair normally encourages nation participants and discourages commodity or manufacturer participants for fear that their presence might not be fully noticed in a large conglomerate where commodities of every description are displayed. To nation participants, on the other hand, such fairs with large numbers of ordinary visitors offer an excellent opportunity to project their culture and their economic and social ideologies.

At the Third Asian Fair, the difficulty of generalisation was sought to be obviated by promoting the group interests of manufacturers and traders through symposia, etc. Conference halls, 'negotiating tables', bars and secretariats are provided at the Delhi Fair with this end in view. Private entrepreneurs, like the Association of Refrigeration Equipment Manufacturers, also have their outposts at the Fair for group activities.

By and large, business at the Fair is fairly good. Seventeen days after the opening of the Fair, the authorities had announced transactions amounting to Rs 17 crore. The target of trade agreements has been set at Rs 50 crore, and this is to be realised before November is out. Besides, foreign participants at the Fair have already sold goods worth Rs 5 crore exhibited at the Fair.

While developing nations of Asia, Africa and Latin America have brought items of traditional exports and manufactures of their new industries, the richer countries have come with a variety of machine tools, industrial hardware, precision instruments, tools of new technology, as well as singular items of their prodigious technological thrusts. Thus, the Soviets have on display models of lunar craft, the Japanese, an electron microscope, the Italians, a Maserati sports coupe, and so on. Since the motivating theme of the Fair is cooperation, every participant nation has brought for display what it can give.

To large Indian industrial undertakings, participation in the Fair is something of a prestigious presence. Since the exposition is also commemorative of India's quarter-century of Independence, enterprises in the public and private sectors have spared neither money nor imagination and enthusiasm to make the Fair a success. To them, however, this participation does not necesarily promise more business. The Tatas, for example, have spent close to half a crore of rupees on their pavilion even when they have a world scale export organisation and normal selling channels. Philips, the Indian concern linked to the giant of international electronics, has a spectacular show window at the Fair, aglitter with the marvels of acknowledged technology, though still of limited appeal and demand in India or in most other developing countries.

To medium-sized manufacturers producing a wide range of industrial goods, on the other hand, the Fair is an invaluable experience. At the Hall of Industries, bursting at the seams with freshly painted and polished machinery of every description, these industries have their stands, with salesmen, engineers and technicians in overalls on the ready for a demonstration or to book an order. Indeed, the Hall of Industries is a miniature presentation of present day India's industrial vitality and capability.

Public undertakings like the Railways, the various Ministries, the State Governments, and the solitary instance of a civic body, the New Delhi Municipal Committee, are in a category by themselves. What they hope to sell in a trade fair is an image of themselves, fast, expensive, sophisticated and competitive advertising. For instance, Haryana has brought Faridabad, its pride of an industrial town, into the fair to display almost everything manufactured there. This display incidentally, is one of the most impressive at the Fair. An array of artists, professional visualisers, film makers and photographers have pooled their talents and resources to make the pavilion a rival to the Big Top.

Noteworthy among the new business generated by the Fair for Indian participants are orders from the USSR for shirts, barium carbonate and the public sector Indian Drugs and Pharmaceuticals Ltd. (IDPL) made surgical instruments; garments, fabrics, brassware, sports goods, marble, locks and paintings for Spain; bicycles for the USA.

(Continued)

II. Spectacle of Sights

A week after the formal opening of the Fair, bulldozers were to be seen clearing the rubble, and dozens of pavilions were still at it giving finishing touches to their display areas. As one visitor surveying the scene put it, the hectic activity everywhere somehow symbolised India's unfiinished revolution. But this was only a temporary phase and over in a couple of days. Soon, all roads led to the Fair grounds and hundreds of thousands of eager people were streaming into the Fair.

At the four large entry points, named 'Harmony', 'Humanity', 'Hope' and 'Friendship', endless queues of people were patiently waiting, sometimes for 45 minutes and more to acquire a ticket (costing Re 1, a nominal charge compared to usual international fair standards). Quickly, the authorities made arrangements to sell them at special Fair bus terminals all over the city.

Inside the Fair, there are everlengthening lines of people at the pavilions and along the squares and avenues named after rivers, mountain ranges and other Indian landmarks. The four regional restaurants, Qutb, Ellora, Sundarbans and Kanyakumari, besides the others run by the Ashoka and other hotels, dish out delicacies to famished families moving around there for long hours and yet not satiated.

One comment commonly heard is that the Fair is too large for normal human endurance. Battery driven open buses take the visitors on the rounds, but the legs have their work to do, and almost all pavilions are on two or more levels.

Divided into five or six major sections, the Fair demands at least as many visits to enable one to see it in some detail. The Theme Area, with the Halls of Nations and Industries; the Nehru Museum which had made a round of world capitals the past several years and has at last found a permanent home at the Fair site; the auditorium presenting the India 72 film; the two theatres for cultural shows; the shopping centres, Meena, Anarkali and Charminar bazars, along with the large artificial lake, Mansarovar, form the core of the Fair. All these and the restaurant buildings will form a permanent complex entitling India to a membership to the International Trade Fair Federation, controlling such fairs around the world.

Bordering the shopping centres and Lake Mansarovar are the large international pavilions with their national flags fluttering in front of them. (Participating nations which do not have individual structures have their pavilions inside the Hall of Nations.) Another section is devoted to Indian Industries, and large business houses and public undertakings have their mammoth, masonry-and-wood structures vying with each other for innovative construction and sophisticated display. The most crowded section, however, is the one where the States have their pavilions, each a splendid mirror of its industrial progress, cultural heritage as preserved in its arts and handicrafts, and its landscape and people.

The different Central Ministries like the Railways, Defence, Information and Broadcasting, Communications, Agriculture, etc., too have their pavilions at the Fair. A fully equipped studio for live radio and television broadcasts beams events and programmes from Pragati Maidan itself. Visitors can see programmes going on the air through a large picture window fronting the studio. Stalls put up by national newspapers give a miniscule but panoramic view of their eventful history.

For children there are numberless attractions topped by mechanical swings and a joy ride on a mini train.

The Land adjacent to the exhibition area is soon to be developed into an amusement park.

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Mannequins moving mannequins for modern salesmanship

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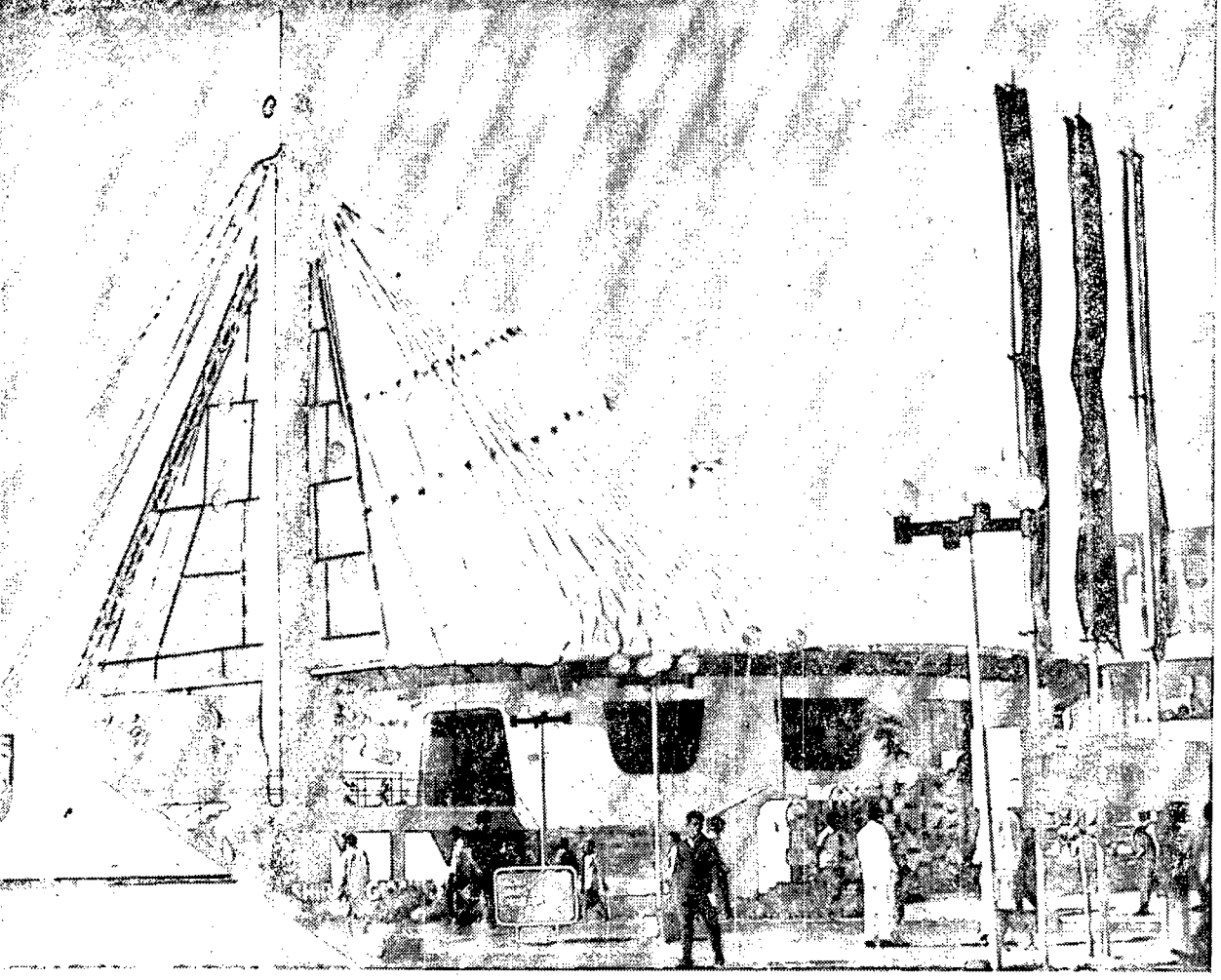

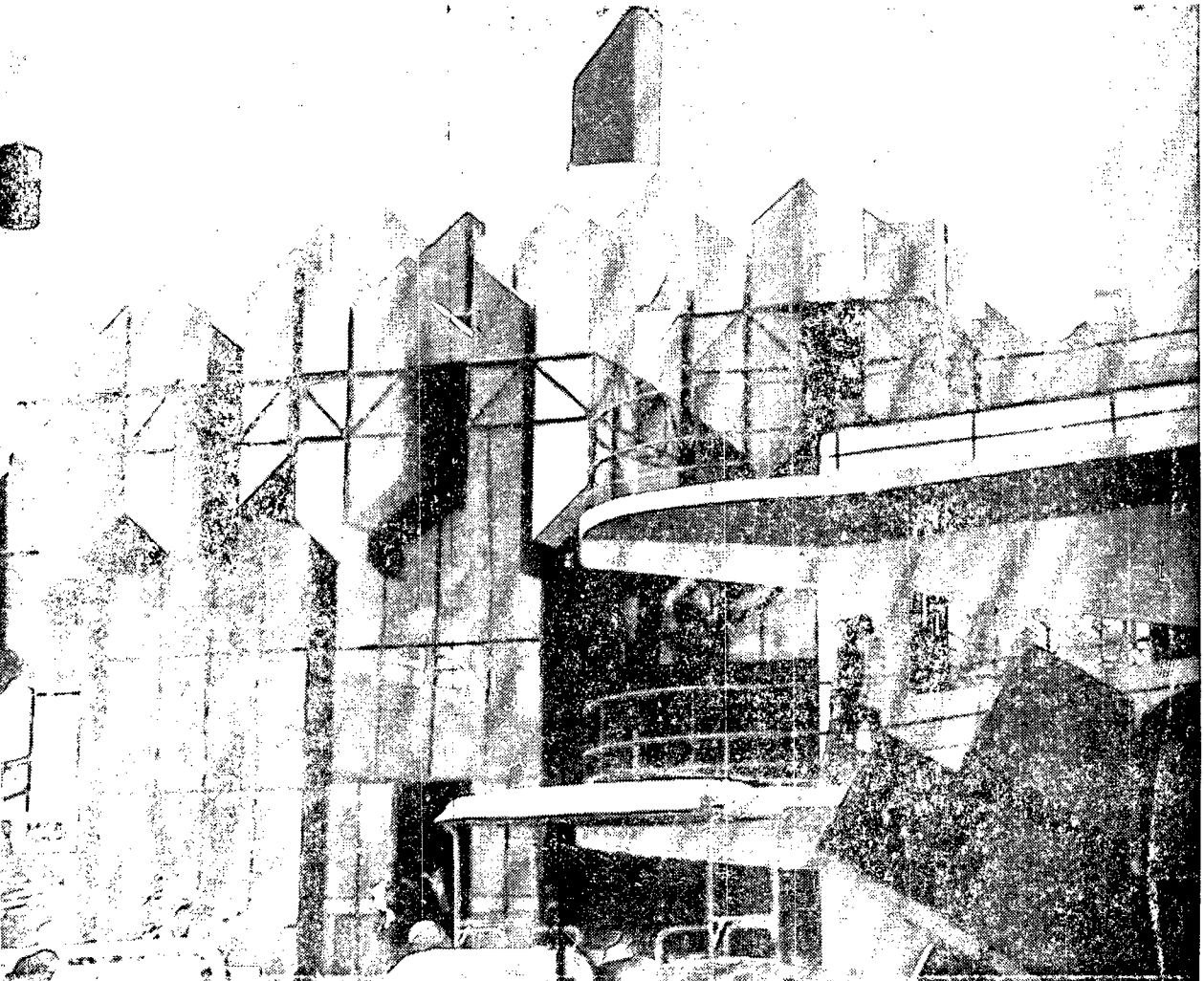

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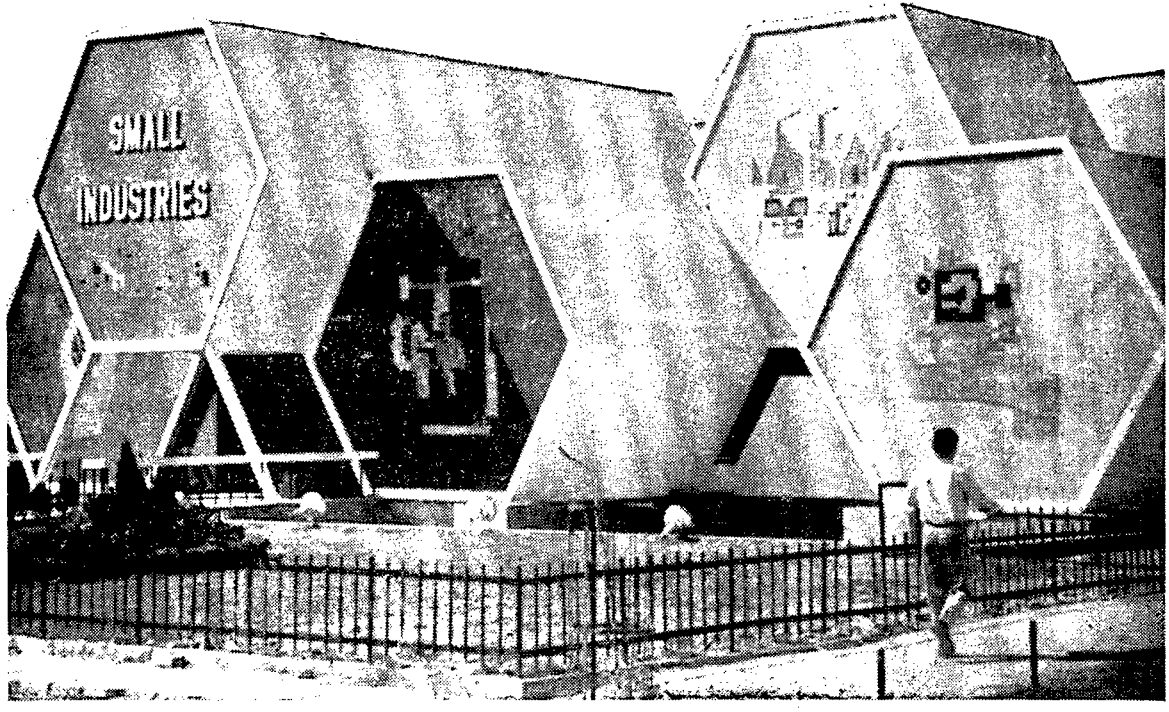
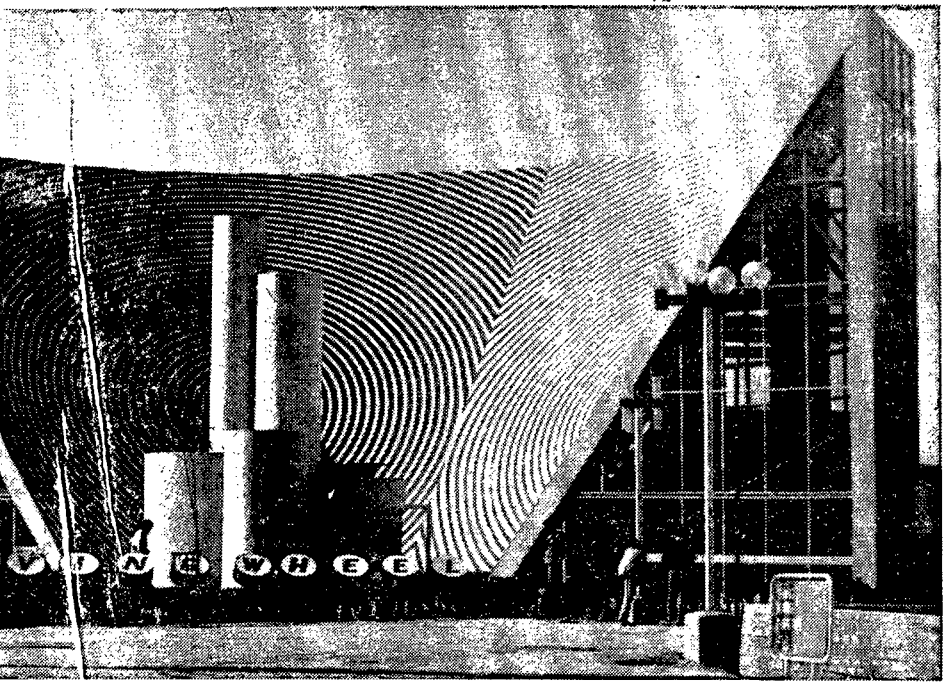
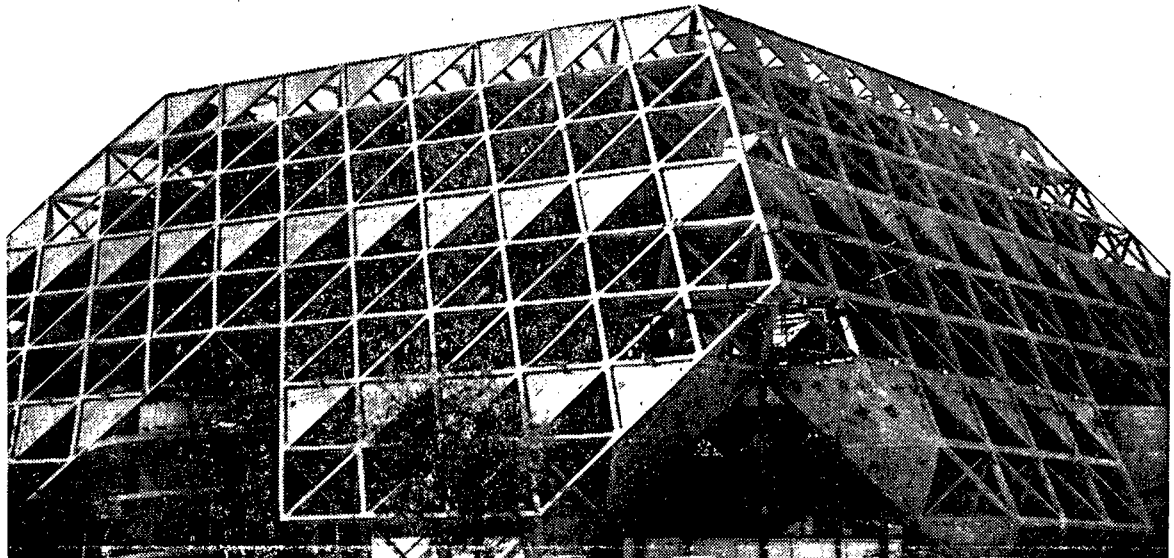




Distinctive

Architecture



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III. Art and Architecture

STARTING with the Hall of Nations which is the largest covered but pillarless exhibition space in the country, the Fair offers a valuable educational tour to the student of art and architecture. Entry to this honeycomb pyramid with the chopped off head is along a ramp, as well as from below, between the supporting columns of the pyramid. Two hundred and fifty six feet square at the base, the Hall is belived to be the largest space-frame in reinforced cement concrete in the world.

Walking up from the main square in the Fair along the massive ramp, the visitor bursts upon the mezzanine on the first floor, with the colourful stalls of many nations spread around and below him. This massive structure, along with four other smaller pyramids alongside (the Halls of Science, Industries, etc.), is destined to become the arena of many commodity and trade fairs India has decided to hold from time to time in the coming years.

The two theatres at the Fair, the open-air Hamsadhvani and the enclosed Shakuntalam, are the venues for dances, films and cultural shows presented every evening by the participating nations. At the Rural India Complex at one corner of the Fair grounds one sees cottages, huts and courtyards from villages around the country, faithfully reproduced in their original building materials and shapes. The huts and the small museum attached to the Complex display art objects and everyday artefacts used by villagers and tribal people. The Complex also has a small open-air theatre where folk dances, etc., are presented.

Many pavilions at the Fair are miniature museums in themselves with crafted objects of superior delicacy assembled with pride and care—Swedish, Czechoslovakian and Indian crystalware; wall and ceiling hangings and carpets of every description; pottery and ceramics; puppets and huge murals and screen-size paintings; three storey high sculptures and costume-jewellery. Bengal has brought here orginal paintings by Rabindranath and Gaganendranath Tagore.

On top of it all is *India 72*, a multi-screen projection of India's apotheosis, the quintessence of our culture and variety, the end product of some 30,000 slides and 10,000 metres of film shot from the air. This mind-blowing visual experience, done by the Institue of Design, Ahmedabad, with help from Art Centrum of Czechoslovakia, is presented in two large auditoria sandwiching a museum hall in between.

The square courtyard outside the structure housing the auditoria is filled with rows of a metre-high luminous hemispheres creating an air of theatricality by night and by day. A majestic flight of steps takes the visitor up to a wide plinth at the end of which are entrances to one of the halls in the auditorium. Inside the hall, there is no furniture, and the empty floor is covered with red spongy material. Massive screens, two for cinemascope projection and 16 for slide projection, dominate the cocoon. Projected simultaneously on all the screens are the splendid spectacle of the images of India, the sweep of the mountains and the sea coast, time less rocks and evergreen forests, the people in their colourful variety and individuality. Synchronised with the help of computers, the still images on the smaller screens and the sometimes-meshing-and-sometimes - separate images on the cinemascope screens tell the story of India's homogeneity, her temple carvings and her faces, her rich flora and fauna, in short, the wonder that is India. The commentary is reminiscent of the Vedic hymn in its overtones of ultimate statement, "look, here I am, a man, alone and defenceless, but I mingle with a million others to become the flow of a mighty nation". The film is a package of precision, art, immense technical skill, and its impact is lasting and inspiring.

While one batch of viewers are ushered out into the museum hall behind the massive screens, another set of people are allowed in from the front. A quick round of art treasures loaned by museums around the country, and the visitor is ready for the second part of the film in the other auditorium. The arrangement of screens in the first auditorium is for stereo effects, while in the second hall they are for mono effects.

The dominant colour of the Fair is the natural hue of cured cement, with the concrete of the big structures unpainted and exposed to view. The bold reds, blues and yellows of the lesser structures with fluttering flags and hangings everywhere enrich the view. Shapes range from the pure geometric and abstract to the wild broken antiquity of the Old Fort suddenly thrusting its ramparts and towers from between the pavillions. And there are multitudes of people, a vast kaleidoscope of endless colour.

The Institute of Design, Ahmedabad, was entrusted with the task of giving order and corporate identity to the Fair. And it is a delight to see that tickets, signbords, printed publicity material, press, invitation and identity cards, lamposts, kiosks all bear the imprint of master craftsmanship.

IGNORAMAN

Wants to know
Whether
on a university campus
(sugarcane) cultivation
would not be more
productive than
(bamboo) cane

ASIAN ECONOMIC INTEGRATION

T. N. CHATURVEDI

THE need for economic cooperation among the countries of South East Asia is keenly felt. These countries are facing diverse problems of economic development. These complex problems mainly arise from financial and organisational weaknesses and require a coordinated approach by the countries of the region for their solution. The strong protectionist tendencies in the developed countries have compelled the Asian countries to think in terms of regional cooperation.

Insular Attitude

In the ninteenth century, expansion in the developed countries, automatically created the demand for the products of developing countries of the New World and led to their development as well. This is no longer the case now. In the twentieth century foreign trade does not play the same part as it played in ninteenth century in the economic growth of nations. Now the advanced countries trade increasingly among themselves rather than with poor countries. Inspite of overall improvement in the international trade and the world economy, the relative position of the developing countries has deteriorated.

During the sixties, the per capita income in the developed countries increased by 650 dollars, but in developing countries, it increased by only 40 dollars. Their share of world trade in exports declined from 21.3 per cent in 1960 to 17.6 per cent in 1970. The external burden of the developing countries is increasing continuously and stood at 60 billion dollars in 1960. The financial aid from developed to developing countries has been declining steadily in terms of percentage of gross national product inspite of pious resolutions of UNCTAD conferences.

This has led the developing countries to think in terms of increasing trade and economic cooperation among themselves. At present, trade among developing countries accounts for less than 4 per cent of the world trade, and on an average they sell less than one fifth of their exports to one another. In mid sixties, they were importing from developed countries some 4 billion dollars worth of food, 2 billion dollars of textiles and clothing, nearly 11 billion dollars of machinery and transport equipment. Many of these products are now produced by the developing countries themselves, and they should be able to sell a lot more of these commodities to each other.

Realisation of this fact of growth with mutual assistance, instead of depending on foreign aid, has led to the establishment of regional trading blocs. Success has been varied, but the very fact that these countries have come together in various trade groupings must be recognised as a significant development. In Latin America, Central American Common Market, LAFTA and Caribbean Free Trade Area have been established. In Africa, the most important regional arrangements are, the East African Community, the Central African Customs Union and West African Customs Union.

Regional Cooperation

But progress in this direction has been the slowest in Asia, specially in the region which has India, Bangla Desh and Pakistan, the three populous developing countries with relatively more industrialised economies. Pakistan has chosen to develop cooperative arrangements with Iran and Turkey, while India has developed preferential arrangements with UAR, and Yugoslavia. Though as India's neighbours Ceylon, Singapore, Malaysia, Burma, Pakistan and Bangla Desh are India's natural markets, our trade with these countries is not as much as it should be. India's exports to her neighbours amounted to less than Rs 100 crore in 1970 which is hardly 7 per cent of her total exports. Imports were even lower and at Rs 47 crore amounted to about 3 per cent of the total imports.

Recently, at the ECAFE session in Bangkok, India presented a plan designed to boost trade among the member countries. The plan suggests an extended scheme of industrial development based on the resources drawn from the countries within the region. A working group which met before the main session finalised some specific areas in which such interdependence could be worked out. Steel and textile industries are regarded as fields in which some immediate cooperation might be achieved. The 'Asian Industrial Development Council' has also drawn up a concrete programme of regional cooperation. The Council considers that it would be possible for India, Iran and Pakistan to set up facilities for meeting the regional demand of items such as flat steel products, billets and pig iron. Off-shore drilling in Indian Ocean also offers scope for such cooperation. India has offered to set up joint ventures in other Asian countries and make available trainning facilities.

The main points of the Indian plan for regional cooperation include increased production; creation of a new pattern of production on the basis of which new lines of regional cooperation could be developed; adoption of a system of preferences for imports from the countries of the region; improvement of transport and communication facilities in the countries of the region; protection of nascent national products of developing countries against the competition of similar products from abroad; and setting up of a regional payment arrangement which goes beyond mere clearing facility.

India is naturally interested in seeing that this region makes steady progress towards the evolution of a common market. The success of the European Economic Community and drying up of flow of foreign financial aid to developing countries, has created a desire for economic integration in these countries. The plan suggested by India may be modest in scope but is a step in the right direction.

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Impact of HYV Programme in Rural Delhi

A. S. SIROHI, S. K. GOEL and KIRPAL SINGH

THE cropping patterns on farms in Delhi have significantly changed in the decade between 1960-70, resulting in about 40 per cent increase in cropping intensity, largely due to additional areas under Mexican wheat varieties and hybrid bajra. During this period, the total investment on improved farm machinery and implements as well as tubewells increased by about 750 per cent. There has been extensive use of fertilisers also. The crop yields and farm incomes have registered considerable increase. The small farmers have not only participated in this change but have also been rather ahead of others in acquiring improved inputs.

With the introduction of short duration, non-lodging wheat, and hybrid varieties of bajra, the local and old varieties of these crops are getting gradually replaced. The new varieties involve intensive use of fertilisers and manures, irrigation, labour, mechanisation of farms and adoption of better cultural practices etc. This study purports to examine the effect of agricultural development programme on cropping pattern, mechanisation of farms, employment of hired human labour and farm incomes in the past nine years in the rural areas of Delhi. This has been done by comparing the levels of inputs used and product of crops for the two agricultural years namely 1960-61 and 1969-70 after taking into account the availability of new inputs like high quality seeds, fertilisers, power and bullock driven implements and machineries and employment of hired human labour as envisaged under the new technology.

Methodology

The data for the study were collected from 24 farms selected earlier at random in a Farm Management Survey conducted in 1960-61 by the Division of Agricultural Economics, Indian Agricultural Research Institute, New Delhi. The farms belonged to four villages, Hastsal and Budhela in Najafgarh and Nilothi and Ranhaulla in Kanjhawala block of Delhi. The data for the year 1960-61 were available from an earlier survey and the relevant information for the same set of farms for the year 1969-70 was collected by survey method to enable the comparison. The farms were classified, into three groups, namely small farms with less than 4 hectares, medium farms with 4 to 8 hectares and large farms with more than 8 hectares of land under operation.

Cropping Pattern

The cropping pattern, farm inventory, employment of hired human labour, farm mechanisation and incomes for the two years 1960-61 and 1969-70 have been compared with the help of tabular analysis. The local varieties of all the crops as well as the improved varieties of wheat adopted earlier like C 591, NP 281, NP 880 are included under local varieties while varieties like S 308, S227, Sona-lika of wheat and HB 1 of bajra are included under 'High Yielding Varieties'.

A comparative study of the cropping patterns for the years 1961-62 and 1969-70 reveals that the high yielding varieties of wheat and bajra crops were grown in all the three classes of farms only in the year 1969-70, while in the case of other crops, only local varieties were grown in the two years. Area under all the crops, except that under gram, increased during the period under study on all sizes of farms. The intensity of cropping also increased considerably, rising from 118 to 163 per cent.

The area under local jowar crop almost doubled during the nine year period and its share in the total cropped area increased from 6.1 per cent in 1960-61 to 8.8 per cent in 1969-70. In case of bajra and wheat, the area increased by about 70 and 85 per cent respectively resulting in an increase of about 25 to 30 per cent in their percentage shares in the total cropped area. This increase was largely because of addition of high yielding varieties of these in the crop-plans. The area under the local varieties of wheat-grain (mixture) increased by about 150 per cent but that under other crops viz. maize, guar-fodder and chillies increased only by about 35 per cent. But, in case of gram crop, its area decreased by 70 per cent. On small and medium farms the increase in acreage was more prominent for bajra crop, while on large farms the increase was more for wheat, jowar, wheat-gram mixture, guar, maize and chillies. Gram crop registered a decline on all sizes of farms. Wheat and bajra continued to be the major crops occupying the largest area among all the crops. But only about 35 per cent area of these crops was under high yielding varieties in 1969-70.

An important observation is that small and medium farmers adopted the high yielding varieties of wheat and bajra more intensively than the large farmers. The small and medium farmers had 45 and 50 per cent of the respective areas of wheat and bajra under high yielding varieties as compared to 25 and 15 per cent on large farms. **The increase in intensity of cropping, during the period, was maximum on small farms.**

Capital Investment

Investment on overhead capital per hectare of operated area increased by about 750 per cent during the period. In the year 1960-61 none of the farms used improved implements such as harrows, threshers and cultivators; tractors were used only by very few large farms and none of the farms had the facility of tubewells. But during the period of reference(1960-61 to 1969-70),farms in all the three groups acquired all these inputs. The average investment on overhead capital per hectare of operated area was the highest on small farms and lowest on large farms. The investment on harrows, bullocks, tractors and tubewells was largest on

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small farms while that on threshers and cultivators was largest on medium farms.

Fertilisers were not used in 1960-61 but in 1969-70 the per hectare expenditure on fertilisers was about Rs 140 on small farms, Rs 120 on medium farms and Rs 170 on large farms.

Employment of hired human labour increased substantially during the period of nine years on all sizes of farms; the small farmers registered the largest increase. However, the number of days (per hectare of cropped area) for which hired labour was employed in 1969-70 was the highest on large farms. This was higher by 110 per cent and 40 per cent respectively than that on small and medium farms.

The results clearly point out that the small farmers, despite their limitations, have gone ahead of others in acquiring improved implements and machinery and irrigation resources. They are also conscientiously trying to increase their farm output as evidenced by their high expenditure on fertilisers and employment of hired human labour.

Crop Yields

In the year 1969-70 the yields per hectare of gram crop were higher by about 200 per cent, that of bajra by about 130 per cent and of wheat and wheat-gram (mixture) by about 50 per cent as compared to their yields in 1960-61. The increase in yields was more prominent on large farms for wheat, gram and wheat-gram (mixture) and on small and medium farms for bajra crop.

The yields of high yielding varieties (HYV) of wheat and bajra were higher than those of local varieties in 1969-70 by about 50 and 100 per cent respectively. The difference in yields was more on large farms and it was maximum for bajra the hybrid variety of which yielded about 260 per cent more than the local variety of this crop on these farms.

A comparison of the grain yields of high yielding wheat and bajra varieties on various sizes of farms, shows that the yields of both these crops were highest on large farms. The yields of wheat on large farms were about 50 per cent higher and that of bajra by about 20 to 40 per cent higher than those at small and medium farms.

Gross Returns

The total gross returns of crops in 1969-70 were higher than that in 1960-61 by about 315 per cent. Of this, about 35 per cent increase was due to increase in total cropped area and about 60 per cent because of increase in prices. The increase in gross returns was the highest on large farms (380 per cent) followed by small farms (275 per cent) and medium farms (245 per cent). Per hectare gross returns for the above crops were highest on small farms followed by large and medium farms in the year 1960-61 as well as 1969-70. Wheat followed by bajra maintained their dominance as major source of farm income on all sizes of farms in both the years. This was because of larger areas under these crops and adoption of their high yielding varieties.

The cropping intensity in the year 1969-70 was about 40 per cent higher than that in 1960-61 The total area under the local varieties remained almost the same although the area under gram decreased substantially and that under other crops increased. Mexican wheat substituted partly rabi fallows and partly gram. Hybrid bajra got the areas from kharif fallows. Such a change in cropping system might have been possible due to availability of tubewell irrigation in the year 1969-70.

The capital investment on implements, machinery, tubewells and bullocks increased by about eleven times on small farms, eight times on medium farms and five times on large farms. Employment of hired human labour increased by about three times on medium and large farms. The increase in case of small farms on this item was much higher. The yields of local varieties of different crops in 1969-70 were higher by about 50 to 200 per cent and the yields of high yielding varieties of bajra and Mexican wheats were higher by about 100 and 50 per cent respectively over those of local varieties in 1969-70. The average gross returns per hectare in 1969-70 were higher by 275 per cent on small farms, 245 per cent on medium farms and 380 per cent on large farms as compared to those in 1960-61.

New Position of Pound Sterling

(*Continued from page 902*)

long as the latter's reserve role lasts and (ii) "some arrangement to substitute a modified SDR as an agreed basis for existing reserve currency holdings, beyond necessary working balances". The suggestion, if pursued effectively, is likely to satisfy doubting Thomases like Malaysia in regard to the merits of, what she considers, as mere 'paper gold'.

It is to be noted that although SDRs are a good device for the promotion of international liquidity, they cannot, however, go far enough and, at any rate, are not the final remedy. The IMF Annual Report 1971, rightly lists out the real issues to be tackled. They are : (i) persistent maladjustments in the balance of payments of some of the major industrial countries—the US in particular; (ii) coordination of policies regarding the location and management of reserves ; and (iii) finding a healthy relation between international capital flows and the need for reserves and credit facilities.

There is reason to conclude on a hopeful note. The corrective measures initiated against the sick dollar by the U.S., the end of the disastrous Vietnam war within sight at the moment of writing and the international agreements to check the flows of volatile funds suggest that an international monetary order is not just a pious hope but a possibility too.

Standards and Technical Education

Need for Standards-Oriented Curricula

M. TOHSIN

STANDARDISATION as we know is the process of formulation and application of rules for an orderly approach to specific activities towards overall economy in terms of everything. It is a continuous process increasing with the tempo of industrialisation. All large scale constructions which are repetitive in nature require standardisation leading to higher productivity, better quality and optimum utilisation of the available resources at minimum cost. But one must be clear that standardisation does not aim at the minimum specification. It aims, contrary to the general belief, at a balanced specification in the form of units of mass, time, dimension, energy, technical glossaries, methods of sampling and tests etc. Basically all engineering standards are for the optimum functional performance and here lies the importance of standardisation in engineering.

National Body

The Indian Standards Institution is the national body in our country constantly engaged since 1947 in the task of formulating national standards specifications, codes of practice, recommendations etc., relating to materials and processes of production, sampling and testing of raw as well as finished products for planned development of industry, trade and commerce. It has already published about 7000 National standards in diverse fields. It is a cooperative venture to minimise our dependence on foreign materials and equipments and to promote indigenous endeavour. This venture is no doubt a challenge particularly to scientists, engineers and technologists as they are in a position to understand and appreciate the basic concepts behind various technologies and it is only through the sincere efforts of these technically qualified personnel that success can be achieved by making the maximum use of our resources of men, materials and machines. Standardisation is, therefore, very important in the professional life of engineers and technologists.

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Curricular Subject

In December, 1968 the Indian Standards Institution held its twelfth convention at Bhubaneswar to make long deliberations and recommendations on various aspects of engineering and technical education considering the growing importance of industrial standards. It was then, for the first time in India, that standardisation was thought to be a really important subject for introduction as part of technical education, though by that time the ISI had already covered all the major fields of engineering and industrial production. The importance of standardisation in modern technology has now grown to such an extent that its introduction in technical curricula has become imperative and that is why educational planners have now approved of its introduction as part of curriculum at various levels of technical education.

It is necessary to coordinate technical education with industrial needs and this in turn requires that all information regarding the role and implementation of standards developed by the ISI should be injected into technical curricula in order to equip students with the up-to-date knowledge about the implications of the different provisions of Indian standards and specifications. This enables engineering and other technical graduates to take on the responsibility of job planning and execution. Unfortunately technical education in India today has not been able to keep pace with the tremendous changes in the industrial and technological fields because of several factors which are beyond the scope of this paper. In the present system of technical education there is very limited scope for students to learn the skills and techniques based on know-how indigenously developed to suit Indian conditions because there is no collaboration worth the name between industry and technical institutions. There has been a huge wastage of technical manpower because much time and energy are dissipated before the services of technical personnel are fully and profitably utilised by industry. A technical graduate now takes a longer period of gestation for picking up the correct manufacturing and trade practices which are also changing very often due to new inventions and modern sophisticated methods. This results ultimately in uneconomic production.

New Efforts

Efforts have therefore been made in recent years to make technical education industry-oriented. Young engineers must be acquainted with the principles and techniques that are currently in practice and also with the different methods of construction, installation and maintenance of different types of works according to Indian conditions. Full awareness of national standards among young engineers will definitely make them fit to face reality with confidence. Once this is achieved our boys will be welcome everywhere. Industry will then find qualified men of their choice. The scope of self-employment amongst young engineers will also increase with the increase in self-confidence given by their job-oriented or industry-oriented education. In these days of technical advancement and rapid industrialisation the success of our development programmes depends largely upon the ability of our technical men to utilise indigenous material and equipment. This is possible only through proper implementation of our national standards for the benefit of all. Technical education must therefore be made standards-oriented first in

order to make it industry-oriented for the desired result.

Challenging Task

The task of reorientation of technical curricula incorporating Indian standards has thrown a challenge to educational institutions, industries and the professional bodies in the fields of engineering, technology and standardisation. The venture so far made is cooperative supported by the Government. The ISI, the University Grants Commission, the Institution of Engineers (India), and the All India Council for Technical Education have more or less finalised the line of action to be taken for introducing Indian standards in the textbooks. But the work so far done in this respect is still inadequate. Efforts are being made to familiarise teachers and instructors with the basic concept of standardisation and Indian standards in particular in the relevant fields. Several seminars at different places of the country have been held on the subject and the ISI has organised Orientation and Review Programmes to acquaint students, teachers and other interested persons with the Indian standards in different fields of engineering and technology. The ISI has recently brought out, at the instance of the Planning Commission, a praiseworthy publication titled 'The National Building Code of India' giving guidelines for the minimum set of regulations for all types of buildings as well as mass scale building programmes through the use of prefabricated construction techniques. It will at the same time serve as a guide for rationalisation and modernisation of the regulatory media. This code is of immense value to students of civil engineering.

As mentioned earlier, thousands of documents on standards have so far been formulated under the auspices of the ISI through joint efforts of industries, technologists and users. The ISI Certification Mark is now considered a guarantee for quality. But the responsibility of the ISI does not end in publishing the codes only. It must take up publication of standards-oriented textbooks. It must see how far its codes are practised and how much our boys have learnt about them in their student life.

A continuous programme to introduce standardisation in technical education must be undertaken including certain follow-up measures. The first thing necessary is to make all the ISI publications available to teachers and students of concerned subjects as an introductory step towards making technical education standards-oriented. Instead of insisting on students and teachers to purchase the codes, technical institutions should be made members of the ISI on payment of annual fees to be fixed by mutual agreement and paid from government funds.

Availability of Codes

For this, of course, a separate fund must be allotted. All codes should be available in the libraries of the member-institutes. Teachers of engineering colleges and polytechnics should be included in the technical committees of the ISI alongwith other experts. They should be encouraged through financial incentives to write textbooks incorporating up-to-date standards and with the specifications currently practised in industry. Short-term training for teachers to accomplish the objectives cannot be under-rated because teachers are considered to be prime movers of the whole machinery of training. Such programmes must be dynamic in nature as the standards are very often required to be revised and improved with changes in quality of raw materials and the tastes of the consumers in general.

The importance of standardisation in technical education can be best understood when we consider it in the context of some of our burning national problems like housing, unemployment of engineers and technicians, quality control of various consumer products and so on. Today the market is flooded with sub-standard and imitation products as there is practically nobody to ensure quality control leaving aside price control. New materials and new techniques are coming up widening the scope of harnessing resources for optimum benefit and therefore technical education needs to be reoriented accordingly. In doing so we must acquaint our young engineers and technicians with the mechanics of standardisation, methodology of development and utilisation of our national standards.

PUNJAB'S NOVEL EMPLOYMENT SCHEME

THE Punjab Government has started a scheme for the grant of subsidy to industries for employment of engineers and technically qualified persons. Under the scheme, industrial units having a fixed capital investment of up to Rs 25 lakh are granted subsidy, for employing engineers and other technically qualified persons, equivalent to 50 per cent of their salaries for a period of one year without break. The subsidy is, however, limited to Rs 200 in the case of graduate engineers and Rs 125 in the case of diploma holders. This is applicable only when the graduate engineers and diploma holders are paid minimum monthly salaries of Rs 400 and Rs 250 respectively. The employer units are required to employ the technically qualified persons for at least one year, to qualify for the subsidy.

One of the inherent advantages of the scheme is that, once an engineer or diploma holder is employed for a year and paid half the salary for the year by an industrialist, he is likely to be put on useful work which would give him good training, experience and confidence. At the end of the period, the employer may even find it useful to retain his services.

The engineers and diploma holders so employed, in some cases, gain enough confidence to start some enterprise on their own, taking advantage of the facilities for such enterprises.

Many small and medium industries do not employ qualified engineers at present. Induction of qualified technical persons is bound to improve their productivity and quality, besides providing more employment. The Planning Commission has highly commended this scheme for adoption in other States.

For the current year an amount of Rs 50 lakh has been made available to the State Governments through the Ministry of Education so that 3,755 engineers and dimploma holders can be found placements. State Directors for Industries are expected to ensure that these placements are secured within the next few months.

newsletters

Assam to Strive Harder During Fifth Plan

(From Our Shillong Correspondent)

WITH nearly one and a half years still to go for the completion of the Fourth Five Year Plan, Assam's permanent State Planning Board constituted a couple of months ago has already started work on giving thought to sectoral plans. It has, in the meantime, prepared an Approach Paper on dimensional hypotheses for the Fifth Plan, the policy and estimates of resources for implementation of alternative rates of growth and objectives like employment, income distribution, satisfactory regional balances, basic minimum needs and self-reliance.

Looking Back

Starting its First Plan with a moderate sum of only Rs 20.51 crore, Aassam executed the later two Five Year Plans with actual expenditures of Rs 54.48 crore and Rs 132.44 crore respectively. The State expended Rs 86.39 crore and Rs 112.93 crore respectively during the three Annual Plans, and the first three years of the Fourth Plan. Even after the implementation of all these Plans at a total cost of Rs 406.75 crore, Assam still lags behind other major States in economic development. Some development has no doubt been achieved in certain directions but the State continues to show symptoms of an economically backward region. The lack of infrastructural facilities is an important factor in keeping the efficiency of capital low, and thus inhibiting investments, in Assam. Besides this, the per capita income at constant prices (1948-49) remaining more or less static over the last two decades of planning due to very rapid population growth and endless natural calamities; and the lack of adequate investment both in private and Central sectors, have been greatly responsible for a chronic situation of under-employment and unemployment. This in turn has resulted in a weakening of purchasing power and effective demand. In respect of the social justice aspects too the situation in Assan is discouraging in comparison to other States.

Consequently, therefore, the Approach Paper envisages the next Plan to achieve the following broad objectives:

(1) full employment of the available manpower and other resources;

(2) a rapid increase in the State's income, specially at an annual rate of growth of 6 per cent in the agricultural sector and 10 per cent in the industrial sector-an overall annual growth rate of 7 per cent which will be 1.5 per cent higher than the proposed national growth rate;

(3) equitable distribution of income and provision of economic and social opportunities to different segments of the State's population, especially, the weaker sections like the Scheduled Castes, Scheduled Tribes, other Backward Classes, landless labourers, small farmers and small artisans;

(4) balanced development of all the regions of the State;

(5) increased self-reliance in agricultural and industrial production;

(6) rapid growth in the infrastructure, especially in the fields of power, communications, irrigation and banking;

(7) improvement in the development of the human personality by improving its fibre and quality, provision of basic minimum needs like food, clothing, shelter, elementary education, clean drinking water, the wherewithal for healthy living and increased opportunities for remunerative work;

(8) effective and long term flood control measures to ensure stability in food production as well as the undertaking of research on the cropping pattern necessary in areas subject to floods;

(9) maximisation of productive employment by stepping up investment in employment-intensive programmes; and

(10) effective steps for tackling the problem of the educated unemployed.

Change in Procedures

To achieve these objectives some radical changes need to be introduced in the entire planning procedure followed in the State. It will be essential in the first instance to stipulate the minimum national standards in respect of consumption of basic goods and use of essential services and then to find out the time span in which these are to be achieved, and the extent to which different areas of the State are behind these norms and also the percentage of population deprived of the minimum facilities there.

Industrialisation

To sustain rapid overall economic expansion in the coming years, a much faster rate of growth has been envisaged for the industrial sector, to be achieved through utilisation of existing capacity, meeting the large and growing demand for consumer goods in rural areas and bridging the gap in certain key sectors.

The strategy for industrial growth will be based on the strengthening of the heavy investment sector. Emphasis will also be laid on the dispersal of industry to the less developed and backward areas.

In view of the vast scope for setting up of numerous agro-based industries in the State, it has been proposed to take up schemes for afforestation, development of existing non-wooded areas and improvement of forest communications. For their great employment potential, cottage industries including sericulture and weaving, will also be given due encouragement.

In respect of power production, the approach will be to have a rate of development so as to catch up with the rest of the country within a reasonable time limit and thus

ensure the stepping up of the pace of industrial development and agricultural production.

Agricultural Production

The basic approach in regard to agriculture would be to meet the minimum nutritional needs of the entire population and to maximise all possible avenues for productive employment, and increase the production of foodgrains at an annual rate of 7 per cent by undertaking certain measures like maximum utilisation and exploitation of natural resources and extensive use of inputs, timely supply of credit, provision of adequate marketing, processing and storage facilities coupled with increasing use of high-yielding varieties, multiple cropping, etc. It has also been stressed that increase in production should be accompanied by a corresponding increase in the income of those, especially the weaker sections of the community, engaged in the agricultural sector.

Besides the need for pursuing vigorously the national policy of radical land reforms, revitalisation of the cooperative structure has been stressed so as to enable it to discharge its responsibility in a more effective manner for implementation of agricultural programmes.

Transport, Communication

At present, Assam has an underdeveloped internal road system, Railways reaching only a few selected areas, inland water ways still in the embryonic stage and air communication limited to a few important towns. There are no multi-point connections between places on the north and south bank of the Brahmaputra. There is only one bridge over this mighty river, and it is totally inadequate. It would, therefore, be the endeavour of the State to build up a comprehensive transport structure commensurate with the scale of efforts envisaged in other sectors.

Assam will have, however, to depend mainly on the recommendation of the Sixth Finance Commission to find resources for its Fifth Plan. If the Commission covers the entire non-Plan gap of the State during the Fifth Plan by its award, Assam would be in a position to implement its Plan. The State Government assumes that liberal Central assistance would be available in view of its very backward economic condition.

Industrial Relations in West Bengal Today

(From Our Calcutta Correspondent)

IF the strike and lock-out figures be any guide, then there has been a definite improvement in the employer-employee relation in West Bengal since the installation of the new ministry in the State.

In March this year, for instance, when the new ministry came into existence, there were only 14 strikes and two lock-outs as against 21 strikes and 42 lock-outs in the two earlier months. Some of these strikes have, however, been settled and lock-outs lifted subsequently due to the conciliation efforts of the State Labour Department.

The new Government started well with the objective of reducing industrial unrest and boosting production. So far this year, not only strikes in the Durgapur complex have been fewer than before, but the usual annual strikes of the workers in jute, cotton textiles and engineering industries have also been averted. Over the last eight months or so, there has not been any major labour agitation or movement in the State. Demonstrations inside factories and offices still occur, no doubt, from time to time; but what distinguishes the present scene from the past is the lack of militancy on the part of workers who carry out movement, if at all, more or less on constitutional lines.

It is no small achievement of the State Government to succeed in raising the jute workers' minimum wage to Rs 235, and also to make the jute industry accept a wage structure which it successfully resisted or dodged for over half-a-century. The labour's confidence, seems to have been won over, firstly, by reopening a number of closed factories thus re-employing over 90,000 workers till the beginning of November this year, and, secondly, by enacting certain legislations. These measures ostensibly favouring the labour include (i) the payment of compulsory gratuity to workers ; (ii) the submission of at least 60 days' notice before closing an industrial unit; and (iii) the government's right to imprison employers in the event of their failure to pay the provident fund and Employees' State Insurance dues.

Healthy Unionism

The State Government also intends to encourage a responsible and healthy trade union movement for which two steps have been taken recently. On an experimental basis a three-tier joint consultative system has been introduced in the Durgapur Steel Plant with a view to developing among the workers a sense of indentification and partnership with the Plant and involving them increasingly in the decision-making process. The system, however, has not worked very well so far, and a four-day work-stoppage in the Durgapur Plant has caused no small loss. But the idea has not been given up. It is being continuously examined with a view to its extension to other public sector undertakings with the hope that it may succeed there. The second step is a campaign to make labour more production conscious. Although this campaign is yet to gain the desired intensity and momentum, still it has imparted a new direction to the labour movement.

Legislative Measures

Being aware of the fact that adjudication is a fairly costly and time-consuming process, and of the "curious attitude of some managements who quite often prefer to drag the process of law", the Government is seriously thinking of removing these constraints through suitable legislation.

For an effective collective bargaining as well as for doing away with the multiplicity of trade unions standing in the way of an abiding industrial peace, the State Government is also thinking in terms of amending the Trade Unions Act. It may then raise the essential prerequisite for registration of unions to the level of about 20 per cent of workmen in an industrial establishment as their members, or 1000 workers, whichever is less. For some time past labour unions in West Bengal have been multiplying in numbers. Between January 1 and August 19 this year as many as

654 new unions were registered, that is, at the rate of three unions a day.

Personal Issues

It is not so much labour indiscipline as before, as factors like inter-union rivalry, in-fighting for the union leadership and personal issues such as discharge, dismissal and suspension, that are vitiating industrial peace in the State from time to time. Personal issues account for a majority of strikes today. Between 1960 and 1966, according to a State Labour Department survey, strikes arising out of such disputes claimed 37 per cent of the total number of strikes in the State.

In some of the recent cases of work stoppage in a few Calcutta factories, the gap in wage structure has no longer been found to present a real obstacle to settlement, but a new demand relating to the payment of wages during the lay-off period has come up as an offshoot hindering solution. Even if such disputes are ultimately settled, it will take some time to erase out their adverse effects on the capital market which will, in turn, affect the State's economic growth for some time to come.

The State Government at the same time does not seem to be in a mood to keep on appeasing labour continuously. It now wants the organised labour to realise the responsibility it (labour) has towards the infinitely vast number of unemployed and under-employed in the unorganised sector as also in agricultural occupations. The enhancement of the minimum bonus rate seems to have enjoined upon the labour a corresponding responsibility to help the Government to reconstruct the economy. The Government expects the organised labour to reciprocate now.

Problems that Face Industrial Estates

(From Our Bombay Correspondent)

"INADEQUATE and costly supply of raw materials, multiplicity of forms, ond red tape were some of the difficulties which the industrial estates in Maharashtra were faced with", according to the deliberations of a seminar on Cooperative Industrial Estates held recently in Bombay. The seminar was organised jointly by the Maharashtra Chamber of Commerce and the Maharashtra State Cooperative Industrial Estates Federation, Sangli. It was attended by over 200 delegates and representatives of various financial institutions.

Of the 69 industrial estates in the State 56 are cooperatives the rest being governmental, municipal and private estates. According to a RBI survey published recently, out of 22 States and Union Territories, there were cooperative industrial estates only in 9 States. In the number of sheds constructed, Maharashtra stands first with 1,095 sheds followed by Gujarat and Tamil Nadu. Only in two States, namely Maharashtra and Gujarat, civic bodies have come forward to set up such estates and all the sheds constructed by these bodies are humming with industrial activity. But it is not the case all over the country. Out of the total number of sheds constructed only about 60 per cent of them are operative.

These estates provided employment to over 10,000 persons and they produced goods worth Rs 21.67 crore annually.

Problems

Since the supply of raw materials to the units at industrial estates is inadequate, they have to purchase their requirements at high cost and were not, therefore, in a position to compete with big units even with price preference. The delegates felt that the Government should take up the responsibility of supply of raw material to the small units at fair price. The State Government's offer to give 15 per cent more price to goods from the small units was not enough. The State Government undertakings were also urged to place more orders for purchase of parts and ancilliaries from these units.

The seminar suggested that it would be better if an office of the Assistant Director of Industries was set up in every district to assist and guide entrepreneurs in securing financial help from various financial institutions. Although there are many financial institutions and agencies for rendering such help but their procedures were very complicated and they need to be streamlined.

HOUSES FOR THE LANDLESS

By October 15 this year, 1,29,651 landless people in Maharashtra had been provided with house sites under the State Government's scheme announced on the Independence Day.

In September, when the actual implementation started, 11,1973 persons were allotted plots. Of these, 74,458 were Harijans, Adivasis or members of the nomadic tribes.

The new plot-holders will also be given loans and subsidies for the construction of houses on those plots. The State Government propose to provide house sites to 5 lakh people in the next three years.

SMALL SAVINGS

Maharashtra accounts for 20 per cent of the total postal savings bank accounts in the country. Out of the total countrywide 2,38,00,000 accounts, 50,00,000 are in Maharashtra. In the matter of CTD and other Deposit accounts also the State contributes over 33 per cent of the total amount deposited. Out of 89,00,000 such accounts, 30,00,000 are in Maharashtra. One out of every 5 persons in Maharashtra invests his money in small savings.

Bombay, the State capital, has once again scored in the matter of small savings collections by achieving the target of Rs 27 crore. The target for the year was achieved by the October end itself. There has been significant increase in the number of accounts under the payroll savings scheme. During the last year, over 1 lakh such accounts were operative in the city. In this the biggest chunk of such accounts was shared by the Bombay Municipal Corporation.

RETIREMENT BENEFITS

The State Government have decided to extend retirement benefits to the full-time non-teaching staff of recognised and Government-aided private and municipal schools. These benefits which include pension and gratuity, will be given retrospectively from April 1, 1966, and will be on the same scale as admissable to the State Government employees.

BOOKS

Problems of Development

The Challenge of World Poverty *by Gunnar Myrdal. Penguin International Edition, 1971. Pages 464.*

A SOCIONOMIST of international repute, Gunnar Myrdal needs no introduction. His *Asian Drama* has already won him worldwide acclaim. His present work, *The Challenge of World Poverty*, is a sort of continuum of the earlier stupendous work in which he exposed the hard facts and stark realities of underdevelopment. In fact, Dr Myrdal was invited by Johns Hopkins School of Advanced International Studies to deliver the Christian A. Herter Lectures; the present book is a direct product of those lectures. He supplements through this work his *Asian Drama* with a statement of logical policies to be followed by developed as well as underdeveloped countries if the former are sincerely interested in the latter's development and the latter, in their own.

The book is divided into four parts. Part one opens with a plain truth that our conceptions both about development and underdevelopment lean towards a direction that is basically opportunistic. Dr Myrdal demonstrates how such bias manifests itself in specific problems, and calls for proper modification of the approach.

In part two, Dr Myrdal stresses the need for radical reforms in the underdeveloped countries of the Third World. He takes up the inequality issue first, and concludes that 'inequality and trend towards rising inequality stand as a complex of inhibitions and obstacles to development.' He, therefore, emphasises that there is an urgent need for reversing the trend and creating greater equality. He points to certain crucial facts about agriculture, population, and education in the countries of the Third World. On agriculture he suggests implementation of agrarian reforms aimed at creating such relationship between man and land that the tiller has opportunities and feels motivated to exert himself.

About population, the author calls for immediate action on the part of the governments of underdeveloped countries to spread the message of birth control as a matter of public policy. In the field of education, Dr Myrdal suggests radical changes in the system which is a legacy of the colonial era designed to produce only 'deskmen'.

However, Dr Myrdal is sceptical if anything tangible could be expected so long as underdeveloped countries are what he calls 'soft states' suffering from social indiscipline manifesting itself in legislative deficiencies, low observance and enforcement of rules, and collusion of public officials with powerful persons whose conduct they are supposed to watch.

Part three is devoted to exhorting what is expected of the developed countries. While exposing their jugglery with figures, Dr Myrdal expresses serious doubts about their sincerity and humanitarianism towards the underdeveloped countries. Citing an example he says that food provided under PL 480 was charged at prices that were high above the prices at which it could be sold through the normal channels of international market. Over and above this, shipping was also reserved for protected high-cost shippers of USA and charged to the aid-receiver. And all this was when the disposal of bulging food surpluses was very much in the American interest.

Part four deals with the politics of development. In late '40s and early '50s when new nations emerged, the impoverished masses were full of rising expectations and new aspirations for change. The aid-giving countries of the West developed a policy of containment of communism. This was a negative approach.

Dr Myrdal, however, expresses honest doubts about any radical reforms being seriously undertaken by the governments of the countries in the underdeveloped Third World where political power is generally held by the upper-class groups who have generally prevented any effective reforms aimed at ameliorating the lot of the masses. They, rather, uphold the theory that inequality is a precondition for progress. The author, therefore, is of the view that there will be neither evolution nor revolution.

The book is a must for readers of economic and social literature.

—**J. N. Sharma**

Regional Development Banks

Regional Development Banking *by R. M. Saksena; Somaiya, 1972., Bombay. Pages 124. Price Rs 20.*

REGIONAL development banking has been a phenomenon of the post-Second World War period. The term 'regional development bank' refers to those development banks, which have been set up by certain country groups in different parts of the world to foster their pace of economic development and social progress through regional economic cooperation.

The author begins his study with the "Theory of Regional Development Banking," followed by the chapters on 'European Investment Bank,' 'Inter-American Development Bank,' 'African Development Bank' and 'Asian Development Bank'. The origin, objects and scope, functions managerial pattern, capital structure and operations of the four regional development banks are described in a chronological order. Chapter VI, which is titled "Conclusions", tries to bring out some of the common problems and lacunae of the regional development banks.

Though the author has tried to analyse the problems and shortcomings of the regional development banks, the study is more descriptive than analytical. The author lays stress more on the development

aspect of the banks' operations than banking aspect. However, he fails to suggest how this can be achieved. Likewise, the suggestion for achieving balanced growth, fails to recognise the need for the analysis of an effective mechanism to realise this goal. It would have been useful, had the problems confronting the different regions been analysed separately, as the standard of 'developed' and 'less developed' regions differs from one continent to another. On the whole, the author's work is very useful not only to the students of banking, but also to the students of economics in general, though the price of the book is not within the reach of the common student.

—**R. Vedavalli**

Twentyfive Years in Perspective

Twenty Five Years of Indian Independence : *by Indian Oxygen; Oxford and IBH, 1972, Calcutta; pages 300; price Rs 35.*

INDIA gained her independence from the British rule through a non-violent struggle spread over many decades. Yet the price that the subcontinent paid in the shape of partition brought with it ghastly violence and millions of people either lost their lives or were uprooted from their hearths and homes and needed settlement. Apart from the social and political problems arising from this upheaval, the country faced economic disruption of enormous magnitude. The integration of princely states which formed some 45 per cent of the area of undivided India was no easy matter. Then came Pakistan's bid to seize Kashmir and the ensuing conflicts. The assassination of Mahatma Gandhi was an indication that reactionaries were out to frustrate the emergency of a secular democratic state. Left extremists also posed a challenge by their guerilla activities in Telengana region. The task of countering these fissiparous tendencies in the body politic of India which had not for centruries known any worthwhile effort at national integration was indeed stupendous. Even volumes written on this episode of our history will not exhaust the subject.

Yet the book under review gives in a compact form an objective review of this background and a balanced review of our achievements and failures in the past quarter century. After recounting the problems facing the nation at that time the narrative in a simple but delightful language goes on to describe the process adopted to mould the country into a sovereign, democratic republic with a Constitution suited for a modern socialist state.

The first part of the book which deals with the political scene recounts among other subjects, the growth in our international stature, the Chinese attack, the wars with Pakistan and the emergence of Bangladesh. Part two dealing with the economy since Independence describes the stages of planned development, agrarian reforms and the breakthrough in agriculture, the population explosion and the food problem. It also deals with industry, public sector, foreign aid and the recent recessionary wave. Lastly, it deals with the challenges of the coming decade, poverty, unemployment and the slack in the economic growth.

The subsequent two parts of the book deal with the progress and probelms of education, labour, backward classes, science and technology and a chronology of Indian history from 1946 to 1971.

An attempt has been made in this book to place the whole period since Independence in perspective. It could be a reference book for the serious reader, yet its felicitious prose style renders it signally useful for light reading and educative purposes.

—**L. N. Raina**

BOOKS RECEIVED

SEMINAR ON RECENT ADVANCES IN FERTILISER TECHNOLOGY—1972 Proceedings. Pages 269. Price Rs 10.00 *PRODUCTION AND CONSUMPTION OF FERTILISERS.* Annual Review 1971-72. Pages 167. Price Rs 5. The Fertiliser Association of India. New Delhi-57.

COMMUNITY DEVELOPMENT IN DEVELOPING COUNTRIES. by S.N. Bhatia. Pages 148. Price Rs 20. Academic Publisher, Calcutta-9.

STORY OF OLYMPICS. by Melville de Mellow. Pages 155. Price Rs 9.50. National Book Trust of India, New Delhi-16.

INTERNATIONAL LIQUIDITY By R.D. Gupta. Pages 385. Price Rs 35. Sultan Chand & Co. New Delhi.

PHILOSOPHERS AND KINGS (Studies in Leadership). Pages 407. Price Rs 10.00 *PSYCHIATRY AND LAW* by J.C. Marfatia. Page 108. Price Rs 20. Popular Prakashan Pvt. Ltd., Bombay-34.

THE INDIAN ECONOMY UNDER PLANNING by Nabagopal Das. Pages 140. Price Rs 18. The World Press Pvt. Ltd., Calcutta-12.

HAND BOOK ON COOPERATIVE COLD-STORAGE. Pages 168. National Cooperative Development Corporation, New Delhi-49.

INDIA : RESOURCES, POTENTIALITIES AND PLANNING. by Ashok K. Dutt. Pages 138. Price not mentioned. Kandall/Hemt Publishing Co. Iowa, U.S.A.

ECONOMIC IMPACT OF DROUGHT IN HARYANA. (A Survey) Pages 80 maps and tables. Price Rs 25. Marketing and Economic Research Bureau, New Delhi-48.

MAHATMA GANDHI—A chronology. Compiled by K.P. Goswami. Pages 220. Price Rs 10. Publications Division, Patiala House, New Delhi-1.

PANCHAYAT TAXES (Factors Influencing their Mobilisation). A Study in three Panchayat in East Godawari, Andhra Predesh. Pages 145. Price Rs 15. *THE VOTER AND PANCHAYATI RAJ*—A Study of the Electral behaviour during Panchayat Elections in Warangal District, Andhra Pradesh. By G. Rama Reddy & K. Seshadri. Pages 113. Price Rs 13. *READINGS ON MICROLEVEL PLANNING AND RURAL GROWTH CENTRES.* Edited by Lalit K. Sen. Pages 350. Price Rs 35. *PAPERS AND PROCEEDINGS OF THE WORKERS-CUM-SEMINAR ON RURAL INSTITUTION AND AGRICULTURAL DEVELOPMENT.* Organised by the NICD at Hyderabad. Edited by Waheeduddin Khan. Pages 411. Price Rs 40. National Institute of Community Development, Hyderabad.

SOCIAL DIMENSIONS OF AGRICULTURAL DEVELOPMENT. By Sachchidananda. Pages 197. Price Rs. 30. National Publishing House, Delhi-6.

EMPLOYMENT REVIEW 1970-71. Pages 99. Brought out by Directorate General of Employment & Training, New Delhi.

SIXTY INDIAN BIRDS. Text and Photographs. By R.S. Dharmakumarsinhji. & K.S. Lavkumar. Pages 100. Price Rs. 25. Pablications Division 1972, New Delhi.

Snippets . . .

With the help of the UNDP, India has completed a fully-equipped Cavitation Research Centre. Located inside the campus of India's Central Water and Power Research Station (CWPRS), Khadakvasla, about 200 kms from Bombay, the centre is the first of its kind in a developing country in Asia. It is equipped with a multi-test water tunnel and other sophisticated equipment and is the culmination of nearly 12 years of planning, designing, construction and testing. India and the UNDP have split the cost of the $ 1 million centre almost evenly.

*

The third Leander Class frigate 'Udaigir', built by the Mazagon Dock Limited in collaboration with two reputed British shipbuilding firms has been formally launched. One of the most modern warships belonging to the latest series of the Leander class, the frigate has anti-submarine and anti-aircraft capabilities.

*

After a period of slow growth, industrial production in the country has started picking up. In the first quarter of 1972, the growth rate registered an increase of nearly seven per cent as against two per cent during the corresponding period in 1971.

*

A comprehensive scheme costing Rs 1.49 crore for development of power in Meghalaya has been approved by the Planning Commission for implementation during the Fourth Five Year Plan. The scheme envisages provision of electricity to over 100 new localities in the State.

*

The size of Delhi's Fifth Plan has been proposed at around Rs 500 crore. The approach paper submitted to the Planning Commission says that the main emphasis of the Plan will be the removal of unemployment and providing certain basic minimum needs to the people. About one lakh houses are proposed to be costructed during the Plan period, of which 50,000 would be in the public sector.

*

The State-owned Heavy Electricals project near Bhopal has recorded a breakthrough in the country's heavy electrical technology by undertaking to manufacture marine turbines. These turbines will be used for propelling Indian Navy's Leander Class warships. A set of two marine turbines has already been built and is currently being fitted to the Indian warships at the Mazagon Docks in Bombay.

*

Indigenously designed and produced Revathi MK II, a powered basic trainer and Mrigasheer, a high performance sail plane, have been formally declared air-worthy. Both these aircrafts have been designed and constructed at the Technical Centre of Civil Aviation Department, New Delhi.

*

An ordinance has been promulgated by the President for the immediate take-over, in the public interest, of the management of 46 sick textile mills pending nationalisation. The important criteria followed in making a list of mills for take-over have been mismanagement, fall in production and employment, closure of units etc. The take-over seeks to ensure speedy rehabilitation of "sick" textile mills, act as a deterrent to closure of mills and sustain production particularly of the varieties for use by the weaker sections of the society.

*

Many direct orders were booked by the Indian exhibitors at the International Trade Fair of Sports Goods, Camping Equipment and Garden Furniture (SPOGA) held in Cologne from October 15 to 17. The most interested in Indian goods were buyers from West European countries, particularly from West Germany.

*

A Trade Protocol envisaging a trade turnover of Rs 69 crore in 1973 has been signed between India and German Democratic Republic. Besides exports of various traditional commodities, a number of engineering and non-traditional items, including consumer goods, have been included for exports to the G.D.R. The principal items of India's imports from the G.D.R. during 1973 will be printing machinery, steel and steel products, textile machinery, optical and scientific instruments.

*

India has signed a Trade Protocol with Czechoslovakia envisaging a trade turnover of Rs 130 crore between the two countries in 1973; an increase of about 18 per cent over the 1972 estimated level. Both the countries have also agreed to explore further possibilities for stepping up trade and economic relations between the two countries.

*

The Rs 60-crore Mangalore Fertiliser Project has been inaugurated. The location of the plant near the Mangalore Port is expected to facilitate the import of naphtha, besides the transport of the fertiliser output to the west and south of India by road, rail and coastal steamers.

*

The Aromatics Project of the Gujarat Petrochemical Complex is expected to be commissioned in December 1972. The plant is rated to produce 24,000 tonnes of DMT, 21,000 tonnes of Otho-xylenes and 2,500 tonnes of mixed-xylenes. The commercial production of DMT, used in the manufacture of Polyester fibre, is expected to be available to the consuming units from March 1973.

*

The total new business of the Life Insurance Corporation of India in September 1972 amounted to Rs 179.21 crore, involving 192,052 policies. This included foreign business worth Rs 64 lakh. The total business completed by the Corporation, including foreign business, during the first six months of the current financial year amounted to Rs 634.39 crore as compared with Rs 500.03 crore during the corresponding period of 1971-72.

*

The mechanised brick plant near Delhi has broken all previous records of production. It produced 10 lakh bricks in September this year as against the highest production of 8.5 lakh bricks in any individual month during the past three years.

*

An agreement has been signed between India and Belgium providing for a Belgian non-project loan to India of 225 million Belgian francs. The loan is in fulfilment of Belgium's commitment under the Aid India Consortium for 1972-73.

*

The Centre has sanctioned Rs 100 crore to the States for the speedy execution of minor irrigation schemes. Simultaneously, it has selected 70 districts for intensive fertiliser promotion programme for the next two years at a cost of Rs 2 crore. The project will be linked to areas where high-yielding varieties of foodgrains, cotton, oilseeds and jute are grown.

*

The Agricultural Credit Cooperative Societies advanced loans of over Rs 581 crore in 1970-71 to approximately 118 lakh farmers as against Rs 203 crore in 1960-61. The primary agricultural credit societies now cover 95 per cent of the villages, 43 per cent of the agricultural families and 36 per cent of the rural population.

*

Agreements for two loans allocating a total of nearly Rs 78 crore (£ 41 million) of British aid to India have been signed. The first loan of Rs 47.42 crore is for covering the import from Britain of non-project goods, like raw materials, spare parts and components. The second loan is for Rs 30.35 crore. It will finance the import from Britain of goods and services required for certain large projects agreed by the two Governments.

*

Five additional schemes costing Rs 18.96 lakh have been approved by the Planning Commission for inclusion in the Special Employment Programmes of Assam during the current year. These are in addition to the eleven schemes, involving a total outlay of Rs 50.78 lakh, approved earlier.

*

The Oil & Natural Gas Commission had drilled 982 wells in the country by the end of September, 1972. Out of these 597 indicated the presence of hydro-carbons, 266 turned out to be dry, 26 were water injection wells and the remaining 93 have yet to be tested fully.

*

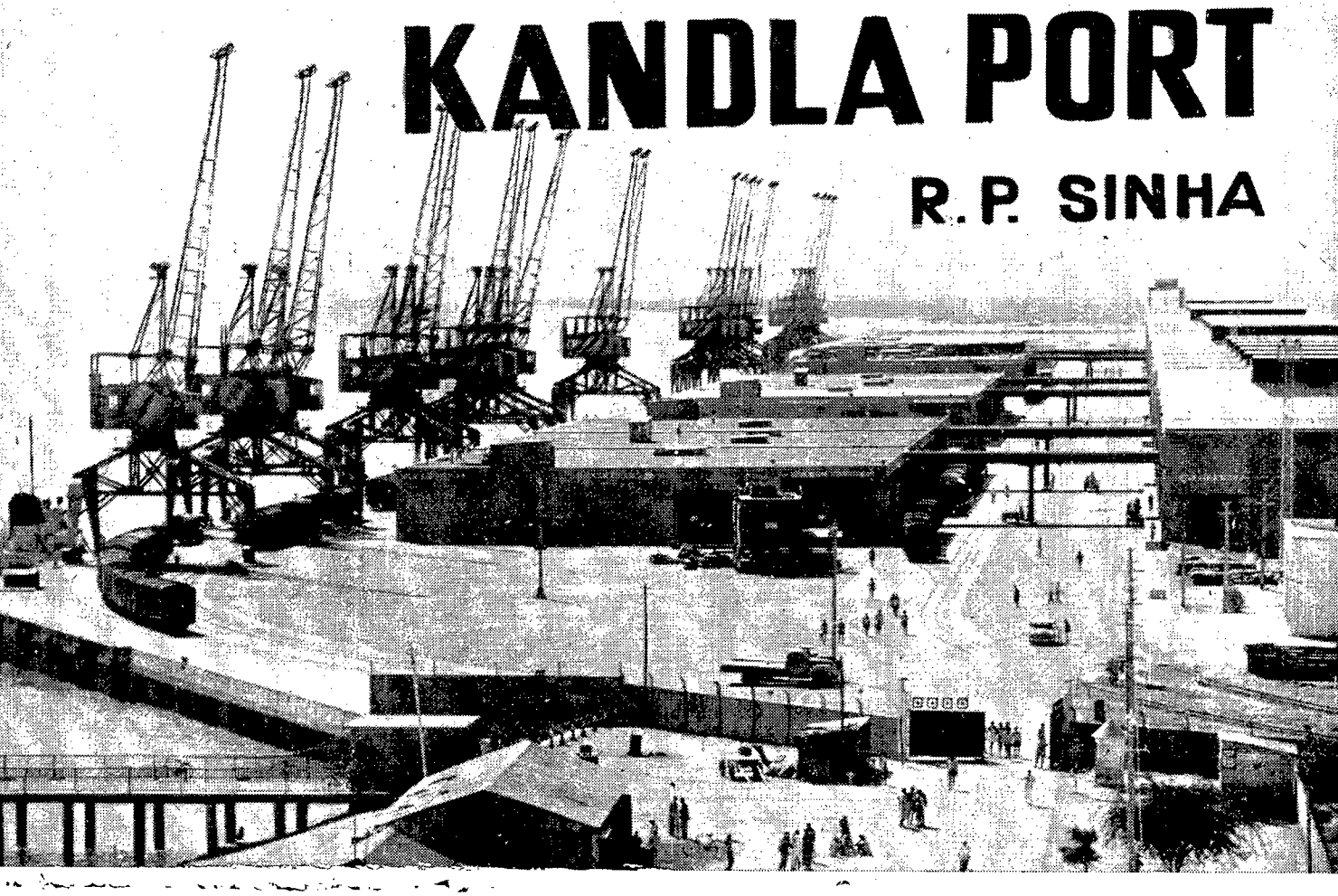
The Hindustan Insecticides Limited, which earned during the year the highest ever net profit of Rs 41.48 lakh, declared the dividend at 8 per cent on its paid-up capital as against 7 per cent declared during 1970-71. Till now the undertaking has paid to Government a sum of Rs 73.93 lakh by way of dividends since 1962-63. The sales turnover of the Company for the year 1971-72 was Rs 3·96 crore representing an increase of about 36 per cent over the previous years.

*

Foreign aid agreements signed during the half year 1972-73 (April-September 1972) amounted to Rs 227.26 crore. Of this, Rs 105.70 crore was for project aid and Rs 121.50 crore for non-project aid.

KANDLA PORT

R. P. SINHA



KANDLA, a seagate for north-west India, is an excellent natural harbour and a well protected port. In 1931, Maharao Khengarji III of Kutch decided to build an all weather port at Kandla for ocean-going ships. As a result of partition of the country in 1947, India lost the important port of Karachi to Pakistan and north-west India thus lost a good outlet to the sea. The consequent diversion of traffic to Bombay and other ports proved not only very inconvenient and expensive but also strained severely the resources of those ports. To handle increasing trade and to ease the strain on those ports it became necessary to develop another port on the western seaboard to compensate the loss of Karachi.

The Government of India appointed the "West Coast Major Port Development Committee" in 1948 for the purpose of recommending a suitable site for the location of a new major port. The claims of various ports were examined in detail and Kandla scored over all others. In 1950 the Government of India formally took over the port of Kandla and the corner stone for converting it into a major port was laid on January 10, 1952. It was declared a major port in 1955 with the Maharao's concrete jetty as its base. Today, it is one of the major ports of India and is being used to berth ships handling all kinds of cargo including liquid cargo of hazardous nature. It now handles about two and a half million tonnes of cargo traffic annually.

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FOCUS

The first free trade zone in the country has been established at Kandla to promote Indian exports and earn more foreign exchange, to bring about fuller utilisation of the facilities already developed at the port and to increase the employment potential of Kandla-Gandhidham area.

The port is located in the sheltered Kandla Creek and entry is through the Gulf of Kutch. The Kandla creek has natural deep water where even during low water neaps, the average depth is 9.1 metres (30 ft.) and at high water neaps, the depth rises to 14.94 metres (49 ft.). Only for a small length over a bar the depth of water during neap tides is 10.1 metres and during spring is 11.3 metres. On some favourable spring tides, the rise of water becomes as high as 7.3 metres which gives a depth of 11.9 metres over the shallowest portion on the bar. Therefore ships of 9.1 metres draft can safely be navigated into the port on all the days of the year, while on spring tides, ships of bigger draft can be brought in. Investigations are in progress to deepen the entrance channel to bring in ships of higher draft.

Pilotage is compulsory, and the port has employed experienced Master Pilots to guide ships from the Outer Tuna Buoy some 22.5 kms from the berths. The pilots with a fleet of tugs and launches ensure safe navigation and berthing of the ships. Ship movement was confined to daylight till 1968, but now facilities

have been extended for movement round the clock.

There is a Harbour Surveillance Radar with range of 32 kms atop the port building to keep a close vigil on the navigation channel marking buoys and guiding pilots when necessary. V.H.F. Radio Telephone sets keep the Harbour Control Tower in constant touch with the pilots. A coastal radio (call sign VVK : Geographical BJWXF) with a range of 800 kms provides quick communication by code between ships and the Port Authorities. Storm signals are dispalyed by the Harbour Master on the Port Signal Station Flag staff (Lat. 23°5′ N; Long 70° 13′ 3′ E) for the guidance of all vessels in the port.

Operational Facilities

The traffic pattern is gradually changing with a decrease in the percentage of sailing vessels traffic and increase in bulk cargo and liquid cargo-traffic. This change in traffic is world wide and Kandla naturally is in tune with it. New facilities are being created for this changing pattern. Mechanisation is another significant development in handling cargo. The present lighterage type of working shall have to give place to direct berthing.

A cargo jetty is provided for the berthing and working of dry cargo ships. Four big or five medium sized ocean-going ships can be accommodated and handled at this jetty. Ships of up to 225 metres overall length can be berthed here. To meet the demand of increasing traffic an additional jetty in the same line was constructed last year. The designed depth alongside these berths is 9.5 metres at low water. The apron of the cargo jetty berths is 22 metres wide and has three dual guage (metre and broad) railway lines and 21 electric level luffing shore cranes of 3 to 10 tonnes capacity.

Apart from the shore cranes already mentioned, the port has an adequate fleet of mobile cranes, fork lifts, tractors, trailors and similar equipment. There are two Buhler Automatic Bagging, Weighting and Stitching Machines each of 100 tonnes per hour capacity. A thermal power station in the vicinity of the port, with integrated link with the State grid system provides electric power.

There are a good number of transit sheds. Apart from the single-storey sheds there are also double storeyed warehouses with electric cargo lifts and chutes for cargo movement between the floors. The total warehousing capacity is 60,000 tonnes, There is a separate warehouse with six compartments for storing hazardous cargo. There is a tank-farm for storage of vegetable oil, with direct pumping and pipeline facilities.

There is a floating R. C. Dry Dock that can accommodate small craft upto 73 metres in length, 12 metres beam and 3.7 metres draft of maximum weight 810 tonnes, for repairs. Besides, there are six swinging buoy mooring berths provided in midstream where ships can be tied up to handle cargo from and to lighters. One of the moorings has been specially provided to take deep draft ships drawing up to 11.3 metres of water. The other moorings have depths varying from 7.3 to 9.1 metres at low water.

Two jetties on floating concrete pontoons at the new port handle the passenger traffic on the Ferry Services between Kandla and Navlakhi, the nearest minor port in Saurashtra across the Gulf of Kutch.

Link with Hinterland

To the north of the cargo jetty berths, there is a basin known as the Bunder Basin with facilities for handling cargoes from and to lighters and sailing vessels. Four electric level-luffing shore cranes of 3 to 10 tonnes capacity and a 60 tonne heavy duty gantry crane to handle cargo abroad barges provide ample cargo lifting capacity. Railway lines serve the area liberally. A fishing jetty at the northern extremity of the Bunder Basin Area together with the cold storage facility provided by the State Government caters to the development of the fishing industry.

Kandla's hinterland is vast and includes besides Gujarat and Kutch, most of the states of north India. This hinterland produces a variety of minerals and agricultural and industrial products. It needs port facilities both for exports and imports. Kandla is the nearest and the most convenient port for the whole of this region. The haulage costs are less than those for any other port in the country.

Kandla is connected with the rest of the country through both metre gauge and broad gauge railway lines. The broad gauge link connects the port with Ahmedabad via Viramgam and from thereon to Baroda and other places. The Kandla-Deesa metre guage railway line connect it with Bhuj on the one side and Palanpur on the other side from where the railway branches off to Bikaner, Delhi, Agra and other important places. The port is situated 1,049 kms from Delhi, 793 kms from Bombay and 297 kms from Ahmedabad.

The National Highway connects Kandla with Bhuj-Ahmedabad highway at Gandhidham and from there it goes to Delhi, Bombay, Porbandar etc. This is the port's major road link with its hinterland. Kandla is also connected by air service with Bombay, Jamnagar, Rajkot, Ahmedabad, Delhi, Jaipur and other important places.

Rising from marshes and salt flats around the Gulf of Kutch, Kandla Development has transformed the landscape over thousands of hectares around. The new townships named Gandhidham and Adipur were conceived by the Sindhu Resettlement Corporation which was formed for the purpose of developing an area to resettle displaced persons particularly from Sindh. The township has been planned as a modern city with zones for industry, commerce, shopping and residence with all the amenities. Gandhidham township is developing in between Gandhidham Station and Kandla-Bhuj Highway. Gandhidham and Kandla port area have had the advantages of coming up in a planned manner, having been conceived on the drawing-boards of Master Planners. There is nothing haphazard. The area promises to grow into a beautiful, expansive, busy cosmopolitan city of the future.

A master plan prepared by a team of renowned town Planning Consultants, has been designed on the basis of neighbourhood units providing for the growth of an integrated community life in stages from 75,000 to 1,50,000 and further to 4,00,000. The community, at each stage, would be a well-knit social group and each neighbourhood unit a well defined residential area in which all points of

activity would be within about a short walking distance. The Plan covers a total area of 2,800 hectares of which 1,052 hectares have been leased out to the Sindhu Resettlement Corporation for internal development and allotment of plots to its shareholders. 80 hectares have been given to the Western Railway for the Railway colony which is ready. The Kandla Port Trust is in charge of the development of the remaining area, of which 516 hectares have been already developed for allotment of plots for residential, commercial and industrial purposes. The Port Staff Colony (Gopalpuri) at present covers an area of 90 hectares. It is a spacious, airy residential zone with well laid out roads and beautiful avenues. The trees, shrubs and gardens around the bungalows have transformed Gopalpuri into a cool, green oasis. The workers' quarters are roomy and modern and wide, tree lined roads separate the rows of quarters. Similarly another colony for the port employees has been set up close to the port. Constant improvements are being carried out to these colonies.

An industrial estate with 52 sheds of 9.2 X 18.3 metres covered area and 6.1 X 18.3 metres open space has been constructed and is managed by the Gujarat Government.

During the project stage, it was estimated that the port would handle a total traffic of about 8.5 lakh tonnes by 1962-63 but it touched this figures as early as in 1957-58. The total traffic has increased steadily to reach nearly 17.5 lakh tonnes in 1962-63, nearly 25.05 lakh tonnes in 1956-66 and 26.6 lakh tonnes in 1966-67. However, the goods traffic recorded a decrease in 1968-69 and 1969-70, the figures for the years being 24.6 lakh tonnes and 31.09 lakh tonnes respectively.

The Government of India has decided to locate an oil refinery at Mathura, 130 km south of Delhi to serve the requirements of the north-western region on the basis of import of crude through a single buoy mooring off-shore terminal in the Gulf of Kutch near Kandla. When the proposed off-shore terminal comes up in Kutch, the importance of Kandla will get further enhanced.

Kandla has a bright future. It, however, depends on the development of its hinterland. Planners have taken notice of the vast resources of the hinterland and prepared plans for their development. These are to be implemented in a coordinated manner so as to ensure balanced growth. Every step of economic development of the area will contribute to the growth of the portscape of Kandla.

The following statement shows the principal items of import and export traffic between 1965-66 and 1969-70 at Kandla.

In Tonus

Commodity	1965-66	1966-67	1967-68	1968-69	1969-70
Imports :					
Foodgrains	11,11,690	11,52,123	11,41,536	5,64,394	5,26,470
Maize	1,33,309	89,376	39,885	—	—
Fertilisers	1,08,472	2,56,915	2,40,446	3,10,221	2,96,790
Muriate of Potash	—	—	38,729	19,387	15,839
Rock Phosphate	16,800	31,420	47,003	85,689	18,850
Sulphur	17,711	2,133	33,504	20,428	24,020
Jute products	13,290	14,602	13,699	7,349	2,683
Building materials	8,698	6,398	8,641	7,654	4,253
Machinery	7,376	380	523	340	1,902
Miscellaneous	9,29,029	8,70,543	6,96,046	6,93,784	9,13,000
Total	23,36,375	24,23,890	22,60,012	17,09,246	18,03,807
Exports :					
Salt	90,651	99,540	1,24,330	1,66,641	1,75,326
Crushed bones	4,363	2,835	10,292	9,043	7,026
Scrap	—	5,365	7,917	6,445	—
Cotton	5,163	1,913	2,482	586	43
Formaldehyde	3,332	2,469	516	456	135
Fertilisers	—	25,402	52,559	77,033	19,553
Ores	19,598	5,061	—	—	—
Sugar	11,000	60,659	—	—	—
Soap Stone	—	—	—	4,751	11,833
Alchohol	1,710	10,586	—	—	—
Miscellaneous	32,702	23,610	6,963	61,499	91,721
Total	1,68,519	2,37,440	2,05,059	3,26,451	3,05,637
GRAND TOTAL	25,04,894	26,61,330	24,65,071	20,35,700	31,09,444
Number of ships which entered the port	279	292	271	261	267

Printed at Indian Printing works New Delhi-55 and Published by the Director Publications Division. Patiala House. New Delhi-1

YOJANA

VOL XVI NO 23 DECEMBER 15, 1972 40 PAISE

Laccadives
Looking up

☆

Fifth Plan
Priorities

☆

Industrial
Safety

BIG DEEDS HUMBLE MEN

MFAL AIDS TRIBESMEN

TANGARPADA, a small village in Keonjhar district, is mostly inhabited by "Ganda" tribesmen. Till the other day its agriculture was totally dependent on rain. When the rains failed the plight of the villagers became pitiable. As luck would have it, drought, so to say, had become their constant companion. But this year, thanks to the Centrally Sponsored Marginal Farmers' and Agricultural Labourers' Development Agency, Keonjhar, the village is now well-equipped to fight out drought.

Last Summer when drought stalked the land MFAL launched a programme of well irrigation. The villagers came forward to work in this programme with great enthusiasm. Thirteen marginal farmers of Tangarpada started to dig wells in their fields. They were provided with credit by the Central Co-operative Bank, Keonjhar. The wells were dug soon after the loans were received. Five big farmers of the village joined the queue and took loans on their own from the bank. By the time monsoon broke, the wells were ready. The marginal farmers who took the loan and completed the wells in time got a subsidy of 33 1/3 percent over the loan from the Agency. They were promised another subsidy of 25 per cent from the State Government for regular repayment of loans.

Apart from sinking of wells the marginal farmers were encouraged to purchase sprayers to ward off pest attacks. Adequate subsidy by the Agency and the State Government is being provided for the purpose.

MFAL's initiative has opened up a new horizon for Tangarpada villagers.

—M. K. Rao

WITH NO REGRETS

JUGAL Kishore Mahanta, a young Mechanical Engineering diploma holder, had been searching for a suitable job for three years, but in vain. Disillusioned, Mahanta thought of charting a new course.

Increasing market demand of eggs in the nearby mining townships of Badbil, Bolani and Kiriburu in Orissa, set him thinking about taking up poultry farming for a living. Last year he started a poultry farm in his village at Gumura in Keonjhar district. To begin with he procured from distant Dhenkanal 300 chicks and housed them on a vacant plot in front of his house. Scientific nursing of the chicks soon paid dividends and Mahanta started reaping rich benefits.

He despatches, on an average, 5,000 eggs a month to the markets of Badbil, Bolani, Kiriburu and Keonjhar towns. The proposition has become so paying that besides poultry feeds, which he obtains from far off Rourkela city, Mahanta has started raising on his fields green feeds like cabbages and lettuces.

He has no regrets today and is no longer interested in engineering jobs for which he is duly qualified. In fact now he is eagerly awaiting the day when his village will be electrified. and his poultry business will get a boost.

—R C. Panigrahi

TAILOR-CUM-TRADER

HOW can a tailor become a trader and so successfully too? "It is possible", says Arumugham. The story starts at Reasipuram where Arumugham had a small tailoring shop in a rented room. Unable to make his both ends meet, Arumugham shifted to Periamanali, another place, where he made some small additions to his tailoring business. He started a small grocery shop, which was managed by his wife while he remained busy with his tailoring work.

One day he met a Field Officer of Shaw Wallace who advised him to open a Fertiliser Depot on a small scale in this village. According to the Field Officer, Arumugham would be able to earn much more from a Fertiliser Depot than a grocery shop as there was a heavy demand for fertilisers here. Agreeing to the proposal, Arumugham approached the Union Bank of India for a loan of Rs 7,000 which was readily given to him as distribution credit.

The progressive wave started in his new business soon became a whirlwind. Encouraged by his initial success Arumugham got another loan of Rs 14,000 under production credit which strengthened his fertiliser business further. This in turn strengthened the ryots' hands in the area who started getting fertilisers at cheaper rate at Arumugham's shop.

—R. Baskaran

AN EXTRAORDINARY CLOCK

A small industrialist of Jasdan, near Rajkot has proved that India does not lack in industry and enterprise He has invented a novel type of transistorised wall clock which shows simultaneously, different time of 27 important cities of the world, besides showing the local time.

Naranji Bhagwanji, an ex-teacher of Jasdan, a small taluka in the Rajkot district of Gujarat, has been able to prepare this clock after many years of hard work and experimentation. The clock is different from other wall clocks in that it has an additional circular disc round the normal dial which moves around it. Near this disc are marked the names of 27 important cities of the world. An arrow points out the local time of a particular city on the ring. The circular disc is divided into two halves. One is painted black and the other is painted white, indicating night or day at the different cities.

At exactly 6 p. m., a light turns on automatically, illuminating the dial to enable the viewer to see the figures in the dark. The light automatically turns off at 6 a.m. The clock also strikes the hour which is uncommon in a transistorised clock.

—P.G. Chovatia

YOJANA

Fortnightly journal published in English, Hindi, Assamese, Bengali, Tamil, Malayalam and Marathi, on behalf of the Planning Commission

Vol. XVI No. 23

December 15, 1972

Agrahayana 24, 1894

Yojana seeks to carry the message of the Plan, but it is not restricted to expressing the official point of view.

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Telegraphic address : YOJANA, New Delhi

Business Office : Business Manager, Publications Division, Patiala House, New Delhi-1.

Inland Subscription :

Annual Rs 7.50. Two years :Rs 13. Three years : Rs 18.

Foreign Subscription :

One year 15 sh. or 2.50 U.S. dollars. Two years : 26sh or 4.00 U.S. dollars. Three years : 36 sh or 5.00 U.S. dollars. Single copy : 18 d. or 15 U.S. cents.

Lest We Forget

The fools and the wise are equally harmless, it is the half-wise and half-foolish who are the most to be feared.

—Goethe

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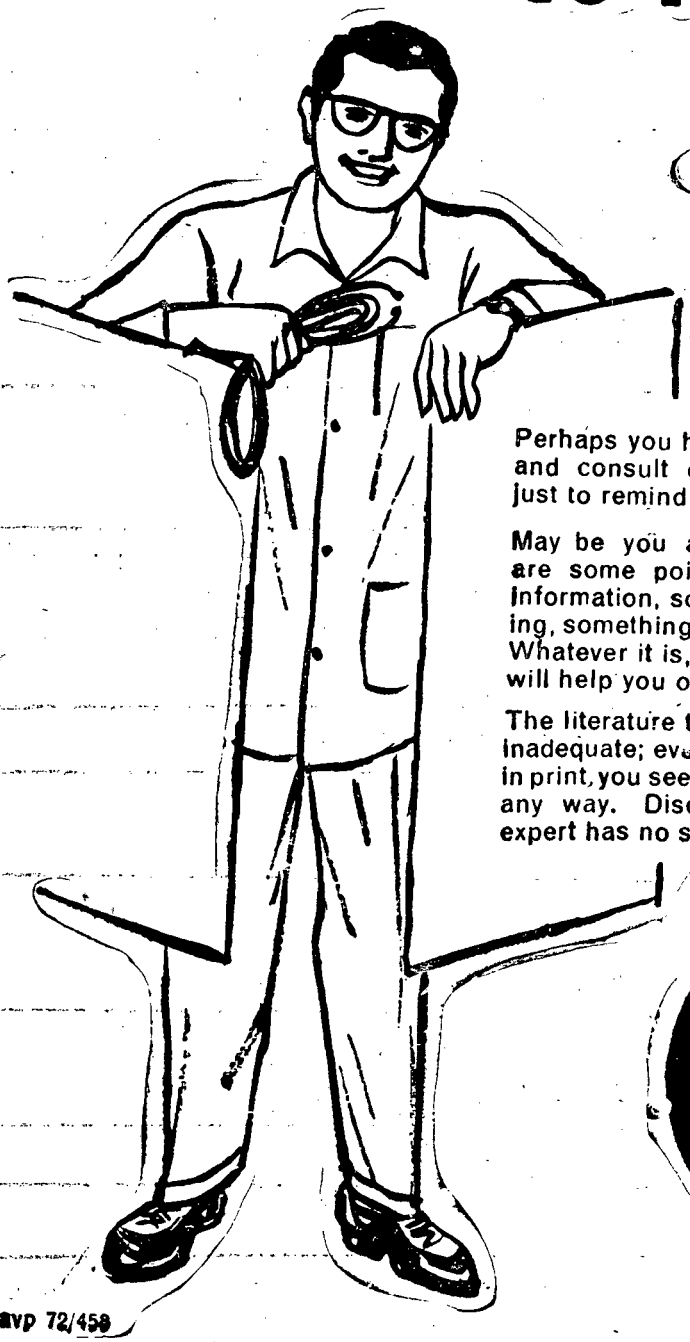
Just to remind YOU

SOMETHING PERSONAL



Perhaps you have been wanting to visit us and consult our doctor on duty. This is just to remind you ; you are welcome.

May be you are hesitant because there are some points on which you need more information, some doubt that keeps recurring, something that is vaguely worrying you. Whatever it is, consultation with the doctor will help you out. .

The literature that you have read may be inadequate; everything cannot be discussed in print, you see; not your personal problems any way. Discussion with a professional expert has no substitute.

A VISIT TO THE FAMILY WELFARE PLANNING CENTRE IS DUE NOW

Envp 72/458

Philosophy of the Fifth Plan

IN his address at the International Seminar of Economic Journalists held recently in New Delhi the Minister for Planning and Deputy Chairman, of the Planning Commission, Shri D.P. Dhar shed some light on current thinking on the Fifth Plan. We reproduce here excerpts from the address which was at once forthright, stimulating and analytical.

"... Some of the current writings on the Indian scene suggest unrelieved gloom as to our future prospects on the basis of certain assumptions regarding the growth of our population and the rate of growth of our economy. It is hastily concluded that the Indian planners have not only gone wrong in the past, but, what is more regrettable, they continue to persist in the mistakes that have given rise to the present predicament in Indian planning.... The gathering crisis of the economy is all too evident in the rising prices and in growing unemployment.

Throughout the whole of the 1971 the annual index of wholesale prices rose only by 4.3 per cent as compared to 5.5 per cent in the preceding year. This fact needs to be considered in the context of the heavy burden on the economy caused by the influx of almost 10 million refugees from Bangla Desh and the war with Pakistan... Up to May 1972 the price line was under no great pressure. The price index for May 1972 stood at 193.2 as against 192.5 for September 1971... The failure of the rains has created an extraordinarily difficult situation. It has affected the *Kharif* output. The trade and the surplus farmers have, as usual, tried to exploit a difficult supply position. Between May 1972 and now, the index of wholesale prices has risen by 12.4 per cent in respect of foodgrains as well as for all food articles....In contrast, the prices of non-agricultural products have shown only a marginal rise. In the case of chemicals, there has actually been a decline of 0.4 per cent.

In the face of these facts it would be pure subjectivism to postulate that the economy is caught in an all round inflationary spiral. The problem affects largely only one sector of the economy, even though it is a very important one. Therefore, the problem as well as the solution lies in the agricultural sector. There is no reason to think that the setback in one crop season cannot be remedied. ..The lesson is that we must continue vigorously to bring within the ambit of the new technology larger and larger proportion of our agriculture...

I would not minimise the gravity of the unemployment situation...It is an over-simplification to characterise the Indian strategy of planned development as relying exclusively on growth to improve the living conditions of the people. Reduction in disparities in income and expansion of employment opportunities have been among the basic objectives of Indian planning since inception. Appropirate policies and programmes were devised throughout the plan periods to give effect to these objectives. What is perhaps not adequately understood is that part of the reason why these objectives were not realised in the measure they should have been, lies in lower rates of growth, both in agriculture and in industry.

The other more important reason is that due to various historical and political factors, into which I need not go at present, the pattern of production itself was distorted. Instead of continuing our emphasis on basic industries that continue the matrix of transformation of the productive apparatus of the economy, and on production of mass consumption goods, we began to seek short-cuts to the consumer's paradise. What brought this about was not any flaw in the philosophy of planning, but the inability of the middle class elite to resist the ethos of high consumption which is characteristic of advanced economies. When you produce goods and services for a restricted class of people, you thereby reduce the scope for production utilisation of the manpower resources of the community.

Super-imposed upon these factors was an educational system, which in spite of its tremendous diversification to take into account modern technological education, suffered from a bias in favour of the liberal arts traning... And let it be said that, inspite of its many shortcomings, the context of the contemporary debate in India on social and economic policies is set by the people who have been inducted by the existing educational system into the ethos of modernity, but who find that their quest for a better life is thwarted by a system which often appears insensitive to their demands.

The plan for the 'seventies has to be reflected in the fusion of the economic and political processes. This mode of planning has been called by various names. Howsoever you may choose to describe it, whether planning from below or grassroots planning, or involvement of the people, the underlying reality of the planning process is precisely the new awakening among the masses. To ignore this dimension is to betray a total lack of understanding of the dynamics of change in contemporary Indian society. In the ultimate analysis, the plan is nothing more or nothing less than a charter of the people for their many-sided development. We cannot let the market plan for us because we have seen that the infallible market produces results which offend commonsense. let alone our cherished values of an egalitarian social order.

Our thinking about the Fifth Plan has, then, to be based on the strategic formulations of Jawaharlal Nehru which have been given a new meaning and a new depth by Shrimati Indira Gandhi's policies. For us social justice is not synonymous with a vague welfarism. It is an integral part of the strategy for building socialism in this country, and implies structural and institutional changes of a far reaching character. It does not, and cannot, mean merely provision of larger employment opportunities within the existing system of production. It also does not mean a

quantitative increase in social consumption for reduction of disparities.

THE very first condition for achieving a social order free from injustice is to work for self-reliance. Self-reliance is not a nationalist fad. It does not mean cutting ourselves off from the outside world. In a world of changing technology, cutting oneself off from the rest of the world means stagnation. In our conditions self-reliance is essentially the creation of a production apparatus that generates continuously resources for rising levels of industrial and agricultural production. Such production alone can remove poverty and assure an environment for higher levels of material, moral and intellectual well-being.

The question, then, is how to push forward towards greater productivity in these fields. The answer would appear to be two-fold. First the modernisation of the productive apparatus has involved in all countries the development of basic sectors like power, steel, heavy machinery, petroleum, heavy chemicals, etc....Without the growth of this sector we can easily imagine the fate that would have befallen India in the military conflicts of 1965 and 1971. Therefore, the emphasis on the basic industries has to be revived. The effects of its neglect for some period of time are all too clear today. We have run into crippling shortages of power, steel, pertroleum products and fertilisers. The Fifth Plan has to blaze a new trail in this vital sector of the economy. The effort has to be not only to utilise existing capacity to the fullest and to build maximum additional capacity but also to do this in a much shorter time span. We have had our share of mistakes in the learning process, but today, we have the technological and managerial competence to forge ahead rapidly.

Secondly, the massive investment required in this sector needs to be matched by an expanded production of the necessities of the common people. This is necessary not only to keep the prices in check but also for altering the direction of growth. It is only through such production that the broad masses of our people will see the meaning of growth, and of their central relationship to it. It is only then that the sacrifices and the discipline required for the growth of the basic industries will come from within ourselves. Production will have to be tailored to essential consumption. I use the word production in the widest sense of the term including provision of education, health facilities, housing, etc., especially for the weaker sections of the national community.

This has to be the basic logic of the Plan. The investment priorities, the outlays, the institutional and organisational changes, the changes in the style of functioning of political parties and in the values and attitudes of the various classes and groups will derive from these fundamental postulates. A new policy framework will have to emerge to translate effectively into action the logic and the discipline of the plan and priorities.

You may ask the question as to what will happen to the social relations of production in this scheme of things. There is no question that the public sector will have to grow relatively and absolutely in the expansion of productive apparatus in the country. Any policy that seeks to dilute the importance of the public sector, especially in relation to the vital sectors of the economy, runs counter to our strategy of development. But, at the same time, we have to remember that in the present stage of our historical development, what we are concerned with is a planned utilisation of the total national resources for increasing production in the desired fields, whether such resources are in the private or in the public sector.

In our conditions there is no room for unrestricted exercise of private economic power. In consonance with our basic objectives, action will have to be taken to reduce concentration of economic power. But policies for reduction of monopoly power need not imply an immobilisation of the growth of productive forces.

In fact, to place arbitrary limits on investment and growth may be counter-productive from the standpoint of the very objectives we are seeking to serve. The present time is both an opportunity and challenge to the private sector. It is an opportunity to initiate a process of creative adaptation to the political and social environment of our society; it is a challenge to accomplish the national goal of self-reliance. The validity of the concept of the mixed economy in the changing circumstances would depend on the response to the needs of the present situation. The specific institutional and organisational methods that may be devised to restructure the efforts of the private sector are a matter of detail, but the key to the role of the private sector lies in expansion of production in socially useful fields. Not mere profitability, but the social balance-sheet of costs and benefits has to be the norm for guiding action.

IN the modern world prosperity, like peace, is indivisible. We hope for assistance from friendly countries in our development efforts. We have valued such assistance in the past, and we will value it in future. But in a concretely identifiable form the Fifth Plan would give shape to the aspiration of our people to stand on their own feet. The entire planning process in India, beginning with the Second Five Year Plan, has been keyed to this imperative. In the Fifth Plan we propose to take a big step forward towards meeting this objective. The Plan becomes therefore, as the Prime Minister said, a rallying point for a supreme national effort to achieve economic independence. It would express our determination to go ahead even if the assumptions that we have made regarding availability of aid do not materialise. I do not say this in any spirit of hostility towards countries which have helped us. For us, self-reliance is the very condition of our survival as a free people.

The philosophy of planning in the seventies is not, therefore, significantly new. What is new is the pace of change, what is new is a qualitatively different political environment which expects and demands a more vigorous, a more faithful and a more determined implementation of the economic and social philosophy so passionately and so eloquently stated by Pt. Jawaharlal Nehru. The Fifth Plan has to embody this philosophy in the concrete historical situation of the 'seventies."

Power : Kingpin Role in Economic Growth

V. BALA MOHANDAS & G. SUBRAMANYAM

POWER plays a vital role in modern living and in the economic development of any country. In fact, without the use of electric and thermal power, no sector of the national economy can develop successfully. Economists judge industrial progress and the standard of living on the basis of the amount of power consumed in a country. Per capita energy consumption in India is the lowest at 90 kW, when compared to the levels prevailing in some of the advanced countries as is evident from Table I below.

Consumption Pattern

Power generated in the country during the first three plans was mostly consumed by the industrial sector. This is in consonance with the progress attained in the industrial sector. In 1968-69 out of the total electric energy, industrial sector consumed 70.1 per cent, domestic and commercial lighting 14.3 per cent, agricultural pumping took 6.8 per cent and others consumed 6.8 per cent. With the onset of green revolution, consumption of power by agricultural pumping has increased. It has been estimated by the *Economic Times* Research Bureau that the proportion of consumption by the industrial sector and domestic and commercial lighting is expected to fall in 1973-74 while agricultural pumping is estimated to consume up to 12 per cent by the end of the Fourth Plan.

Table I : Per Capita Power Consumption in some Selected Countries.

Country	Year	kW
U.S.A.	1969	7,013
U.K.	—do—	3,700
U.S.S.R.	—do—	2,628
France	—do—	2,408
Yugoslavia	—do—	1,006
India	1971	90

Shri V. Bala Mohandas is Lecturer in Commerce and Shri Subramanyam is Lecturer in Business Administration, Andhra University.

A thorough and critical study of India's power potential is vital for formulating plans and policies for its development and utilisation for reshaping and reorienting the economic life of India. During the plan periods the development of installed capacity of power has been substantial though it has not been matching with the requirements. The installed capacity was about 2.3 million kW at the beginning of the First Plan. It rose to about 10 million kW at the end of the Third Plan. This is likely to exceed 20 million kW at the end of the Fourth Plan. The Energy Survey Committee has made a survey of the probable requirements of commercial and non-commercial energy and other aspects of energy production and utilisation up to 1981. The Committee has gone into the past trends in energy growth in relation to industrial production and national income and arrived at projections of aggregates of energy demands. Table II gives the estimate made by the Committee of the requirements of installed capacity consistent with 6 per cent and 7 per cent growth in national income.

Short Supply

With the possible exception of Madhya Pradesh, Orissa, Mysore and Kerala, power shortages have been reported in all States. However, the shortage is more acute in the northern and eastern region, mainly Punjab, Haryana, Bihar and West Bengal. In the year 1971, 15 per cent power cut was imposed in Punjab which caused a loss of over Rs 18 crore to the State and the industrial workers suffered a loss of Rs 16 lakh in wages because of partial shut-down of plants. This year as the power cut has been raised to 40 per cent, the loss would be much more. Power supply position in Gujarat too has worsened with the continuing closure of the Tarapur Atomic Power Station on the one hand and with the farm sector demand rising on the other. The consequence is that the Gujarat Electricity Board has started resorting to load-shedding and imposing a cut up to 25 per cent during peak hours in supplies to high tension consumers. In Bombay also it is reported (*The Economic Times*, September 30, 1972) that the State Electricity Board imposed a total ban on temporary illuminations and neon signs.

Government of Maharashtra has imposed an eight per cent cut on domestic and commercial consumers besides the non-service and non-continuous process industries. In Andhra Pradesh too, the State Electricity Board issued a press note very recently asking several categories of low-tension power consumers to restrict their consumption from September onwards to not more than 75 per cent of their consumption in August 1972. Similar restrictions though not of the same nature and magnitude were imposed in States where the power deficit is felt.

Table II : Requirement of Installed Capacity

(Million kW)

Period ending March	For Growth of National Income at 6 per cent	7 per cent
1961	5.6	5.6
1971	19.2	21.41
1976	28.7	33.90
1981	46.2	55.70

Because of these power cuts, industrial production has suffered. For instance, production of nitrogen at the Fertiliser Plant, Nangal, was 53,923 tonnes for the year 1970-71 as against 79,765 tonnes for the year 1969-70. Similarly production of nitrogen at Gorakhpur Fertiliser Unit was 67,752 tonnes in 1970-71 as against 72,710 tonnes in 1969-70. The power cut

affected the production schedule of Hindustan Motors, the largest employer in the private sector. Against the production of about 11,000 cars in the four-month period, December 1971—March 1972, Hindustan Motors could roll off only about 7,000 cars in the subsequent four month period, April-July 1972. In the eastern region, the jute industry has been the worst hit. The power shortage has a devastating effect not only on the industry's exports but also on the labour-management relations, employment potential and economy in general. Production loss in this industry during 1971 due to non-availability of power was of the order of 20,000 tonnes valued at Rs 7 crore. Because of the power cut, Indian jute industry could not take the advantage of non-functioning of jute mills in Bangladesh since March 1971 which resulted in a monthly deficit of 40,000 tonnes of jute goods in the world market.

Not only industrial activity but also agricultural development is being held up owing to power shortage. The rural electrification programmes had to be given up for the time being. A number of energised pumps could not be used for irrigation and multi-cropping purposes because of frequent power cuts.

Causes and Remedies

The Union Ministry of Irrigation and Power after a careful analysis of the situation noted the causes for the power deficit as: (i) delay in the construction of civil works for power projects; (ii) slackness in the supply of and delivery of key equipment from indigenous and foreign sources; (iii) shortage of steel; (iv) prolonged shut down of the Tarapur Power Station as a result of the defects in design and installation of the reactor; (v) inadequate storage position at some of the major hydro-electric reservoirs due to the failure of rains in catchment areas; (vi) use of inferior grade coal resulting in excessive wear and tear of auxiliary equipment; (vii) non-arrival of coal in time for thermal power stations; and (viii) lack of adequate transmission facilities within each State and between neighbouring States.

Wanted : Central Authority

Efforts are being made to develop electric power in a co-ordinated manner with a view to achieving overall economy and ensuring reliable supply of power. To achieve the two-fold objective, the country is divided into five regions to inter-connect the State power systems through regional grids. Regional Electricity Boards have already been set up in all the regions. Though region-wise grids are there, the absence of a permanent high-powered central body to coordinate the operations of these is keenly felt. It is suggested in some quarters that an 'All India Power Grid' can easily solve the power crisis. To enable this, adequate transmission systems need to be developed. Very recently Dr K. L. Rao, the Union Minister for Irrigation and Power, himself admitted that the progress of construction of inter-State transmission lines is far from satisfactory. The State Electricity Boards should take expeditious action for the completion of all transmission lines under construction. In this connection it is heartening to note that the Planning Commission has agreed to raise the Fourth Plan original outlay of Rs 22 crore to Rs 40 crore and it is for the State Governments to utilise the additional allocations to the full.

If proper regional integration had been achieved, the present power crisis could have been mitigated. But the present system is based on inter-State agreements without a central authority to decide the distribution which creates many uncertainities. Moreover, in the absence of an 'All-India Power Tariff Commission' to regulate inter-State tariffs, high tariffs are being charged by the surplus States. Therefore, the task of integrating the systems needs a high-powered permanent body to evolve inter-State agreements, fix inter-State tariffs and supervise the operation of the systems. (At present the Central Electricity Authority, entrusted with the task of integrating the systems, operates on a part-time basis).

If we analyse the causes of power shortage, we would find that in most of the States it is due to the seasonal hydel projects. To improve such a situation, the seasonal hydel projects have to be supplemented by thermal and atomic power. This is being achieved in the case of western region to some extent. Even improving the existing thermal power plants might go some way to solve the power crisis. The Power Economy Committee (appointed in May 1969 by the Government of India to report on how best we could efficiently utilise the limited resources to take up required schemes for gneration, transmission and distribution of power) estimated that the availability of thermal power could be improved to the extent of eight to ten per cent, if the quality of fuels, abrasiveness, ash content, etc., as well as the operation and maintenance were improved. It added that improvement by another five per cent could be possible if boiler regulations were modified to change the periodicity of overhauling. If these improvements were effected they would result in savings to the tune of Rs 6 crore annually.

Scientific Approach

There is also a dire need for a scientific approach in power planning. Dr K. L. Rao has also pointed out that power shortage was due to reckless calculations. Before launching the big size power projects, they should first be undertaken on a pilot plant basis. At a seminar on power development organised very recently by the Federation of Indian Chambers of Commerce and Industry, Dr K. L. Rao strongly advocated that power development should be taken out of the five-year plans and instead there should be a 10-year or 15-year perspective plan for power. Many other participants in the seminar endorsed this suggestion.

It has been suggested in some quarters that the State Govern-

ments should encourage industrial units requiring process steam in large quantities to install back-pressure turbines to generate power as a by-product. It is worth making mention here of the offer of the Punjab Government to grant a 20 per cent subsidy and interest-free loans to industrialists for installing diesel generating sets to ease the pressure on power. Similar incentives in other power deficit States would certainly ease the power crisis to some extent.

Critics have pointed out that the maintenance of power stations and transmission lines is not up to the mark and this is adding to the power crisis. For ensuring proper maintenance, it is necessary to establish a task force which should make periodic visits to the most important generating and transmitting stations and take all measures for improving maintenance on the spot. Steps should be taken to minimise the power loss in transmission. It is estimated that at present there is an annual loss of about 18 per cent in transmission which adds up to nearly 3 to 4 million kW. The urgency of these steps could well be appreciated if we know the fact that one per cent reduction in tranmission loss would mean a saving of Rs 5 crore a year.

Future Plans

The proposal of the Ministry of Irrigation and Power to double the present power generation by 1978-79 is well conceived. A target of 20 million kW additional generation of power is proposed for the Fifth Plan. To achieve this target, the Ministry should also work out plans for acquiring the heavy electrical equipment and for speedy installation of the same. The capacities of the manufacturing units, namely, Heavy Electricals (HEIL) and Bharat Heavy Electricals (BHEL) are to be substantially raised. The largest turbines produced in India have only 120 mW capacity as against 1,000 mW in the United States and Soviet Union and 750 mW in Britain and West Germany. There is no reason why both the HEIL and the BHEL should not design turbines with higher capacity. As the HEIL and BHEL could not be in a position to supply all the power machinery needed to achieve the new target, imports of the same on a higher scale seem necessary for some time to come. If these steps are not taken, it will be difficult to achieve the target of doubling the power generation by the end of the Fifth Plan.

The power planners should aim at not only tiding over the present power crisis but also at the possibility of making power a foreign exchange earner, by way of exporting our surplus power to the neighbouring countries like Bangladesh and Nepal. In Western Europe import and export of electrical energy is a common feature. The Ministry of Power and Irrigation should adopt a realistic approach and strive hard to see that industrial production during the Fifth Plan does not suffer from power constraints again.

Electric Energy in Kerala

Generation and Distribution Prospects

V. RAMACHANDRAN

"NO power is costlier than no power," declared Dr Bhabha while replying to a criticism on the need for nuclear power plans in India. Dr Bhabha was stressing the urgent need for developing power from any available source. For, there is a close link between a country's power consumption and its industrial growth and the national income.

In fact, economic development of a country is often measured in terms of production and consumption of electric power. The lower the consumption of electric power, the lower in the ladder is the country in economic development.

Shri Ramachandran is Joint Secretary, Prime Minister's Secretariat, New Delhi. He was till recently Chairman, Kerala State Electricity Board.

The link between modernism and electricity is even more profound. What rural electrification has done to revolutionise the thinking and habits of even the most backward people can be seen in our villages. The development of sources of electric power, therefore, has taken a prominent place in our economic development schemes.

Water Potential

So far as Kerala is concerned, the most important natural resource available for generation of power is water. It has been estimated that a potential of approximately 2.5 million kW of power—nearly 6 per cent of the country's total available hydro-power lies in this State. The feasible power projects lie mainly in the river basins of Periyar and Pamba, and to a smaller extent in the river basins of Chalakudy, Kuttiyadi, Chaliar, Valapattanam, Bharathapuzha, Bhavani, Kabini, Achankoil and Kallada.

The major attention in the utilisation of this potential has naturally been given to the Periyar and Pamba basins so far and most of the power stations in this State are in these basins except for two small ones in the Chalakudy basin and another small one under construction in the Kuttiyadi basin.

The installed capacity now in the State is 546.5 MW and it can be stated that this means a utilisation of about 12 to 13 per cent of the total potential. This capacity will be increased by 75 MW when Kuttiyadi Power Station in Malabar is commissioned fully during the course

of next two months. The most important project now under construction is the Idikki Hydro-Electric Project, which on completion will have an installed capacity of 780 MW. With the completion of this project, about a third of State's water resources would have been developed.

Until four years back i.e. before the commissioning of the Sabarigiri Project, there was acute shortage of power in the State. There were prolonged power cuts and it has been estimated that the average loss of production in 50 industrial units, from which statistics were gathered, was about Rs 7.5 crore per annum during the five years 1961-66.

The loss of production in the State as a whole was obviously much higher and to this must be added the loss due to the slowing down of the demand for power as new industrial units could not be set up and power could not be taken to the villages for increasing agricultural production.

Emerging Position

In 1967 the Sabarigiri Project was commissioned and a large chunk of power was added to the State grid. During the last three years we have been having a comfortable power position. We cannot, however, be complacent about this. The annual growth of demand during the last ten years has been about 13 per cent and it is the experience in all countries that after the initial period of hesitant growth, the demand increases substantially.

The annual increase during the 1970s can be expected to be not less than 15—16 per cent. The projection made on this basis shows that the Southern region as a whole will be deficient in power and it will be faced with power shortage by 1973-74. It is in this context that we have to recall to our mind the experience of Kerala in 1961-66 referred to earlier and Dr Bhabha's dictum that no power is costlier than no power.

The Idikki Hydro-Electric Project has been conceived in the context of integrated power system in the Southern region, so that the hydro-electric power produced by it could be used to meet the peak demand in the region.

Construction

The construction of the project has been delayed for over two years for some reason or other and there have been frequent interruptions of work.

As a result of the various steps taken by the State Government during the last two years, the project is expected to be commissioned in 1974 i.e., by the end of the Fourth Five Year Plan. The Commissioning of the First Stage of the Idikki Project will add 390MW to the installed capacity in the State. The second stage of the project, which is planned to follow the first stage, will further increase the installed capacity by 390 MW.

During the Third Five Year Plan, in the context of the shortage of power and the limitations on resources, the emphasis was on increasing the generating capacity by completing the Sholayar and Sabarigiri Projects. The works on transmission and distribution lagged behind. The existing transmission system, at the beginning of the Fourth Plan, was found to be inadequate to carry the available power to the different parts of the State.

In power supply, reliability and stability of the supply, is as important as the rates. The rates in Kerala are highly competitive when compared to other States. Realising the need to improve the conditions of supply from the point of view of reliability and proper voltage at the consumers' terminals, the Board drew up a detailed Transmission Project in 1969.

The Project envisaged an increase in the capacity of existing substations, establishment of a large number of new substations and construction of 220 KV, 110 KV and 66 KV lines. Estimated to cost about Rs 15 crore, the project is under implementation since last year and is expected to be completed by 1974.

While the completion of Idikki Project is the major concern in this plan period on the generation side, on the supply side the strengthening of the transmission system is the most important work.

Unlike the construction of major projects or the coverage of 100 per cent of villages (at whatever cost, demand or quality) the strengthening of the transmission system is an unglamorous task which does not hit headlines. But it is the Kerala Board's firm view that it is basic for the proper utilisation of the available power as well as the additional chunk that will become available in 1974. Hence the importance given to it.

With the commissioning of the Idikki Porject and the strengthening of the transmission system, cheap, reliable power will be available in different parts of the State, giving a major fillip for modernisation and industrialisation.

Electrification

In keeping with the social policies of the Government, rural electrification has been given due importance in Kerala. People live in scattered homesteads throughout the country side in Kerala as opposed to compact villages elsewhere in India. This makes extension of electric lines more complex and costly.

Despite this, over 75 per cent of the revenue villages have been electrified so far, bringing electricity within reach of nearly 85 per cent of population. Only about 375 villages remain to be electrified. This is proposed to be done in the remaining years of the Fourth Plan.

As regards the future prospects of utilisation of the power potential of Kerala after the construction of Idikki, it is clear that the large number of small projects that are economically feasible in the different river basins mentioned earlier have to be taken up. The Idamalayar Multipurpose Project in Periyar basin and the Silent Valley Hydro-Electric Project in Bharathapuzha basin are the projects to be executed immediately. For stabilisation of the power supply, one or two thermal plants will have to be located at strategic places, but thermal power is not likely to play a significant role in this State.

(This article was earlier published in the September 15 issue of the Malayalam edition of YOJANA)

Kerala's 'One Lakh Houses' Scheme

An Interview with Shri M. N. Govindan Nair

By ROSSCOTE KRISHNA PILLAI

Our Trivandrum Correspondent

The Kerala State Government has launched a housing scheme to provide one lakh dwelling units for rural workers in the State. A report on the scheme, the first of its kind in the country, was carried by *Yojana* in its English edition of June 1, 1972.

Presented here is an exclusive interview with Shri Govindan Nair, Minister of Housing, Kerala, who spells out the implications of the scheme which has aroused interest in all parts of the country; its success could form the guidelines for similar schemes in other States.

The interview was first published in the Malayalam edition of *Yojana* dated November 15,1972.

Q. Where from did you get the idea of "One Lakh Houses?."

A. When I came across the Central Government Scheme for providing house sites for families of landless rural workers within a firmly set time schedule, I felt that we should make use of that scheme for providing houses as well. This was how the present scheme originated. Actually, one might trace its origin to the thought that a stupendous problem needed a stupendous solution.

I would like to emphasise another important aspect of the 'One Lakh Houses' scheme. If we take our experience of the last 25 years, we would find that in all sectors of life, sectarian interests have reigned supreme not only over our thoughts but also over our actions. I am not excluding any section from this charge. This 'One Lakh Houses' scheme is a thing which enables our people to look across this high wall of sectarianism. It is a scheme in which our peasants and workers and the entire younger generation have been mobilised and their efforts pooled. This indeed is a fact worth noting. It would teach us a new lesson that the peoples' collective attention should be channelised towards the immediate common problems of society.

Q. What are the different roles of the Central and State Governments in this Scheme?

A. The entire expenditure for the acquisition of lands for the house sites is borne by the Central Government. The State Government provides the timber and bears the cost of cutting it into shape. All remaining expenses will be met from public contributions.

We propose to collect donations from the people in five different ways :

Firstly, from all the schools in the State it is proposed to collect with the help of teachers and students the amount for at least one school. There are 7,000 such schools of which about 2,500 are high schools. Primary schools may not be able to give that much. But colleges might give more. In any case, every educational institution in the State is expected to contribute its mite.

Secondly, each service cooperative society, the basic-level organisation of farmers, should donate the amount for at least one house. In their case, there has been a very encouraging response. From Trichur District, we have received Rs 5 lakh. Palghat District proposes to collect Rs 7 lakh. There are 6,000 to 7,000 service cooperatives in the State, most of which might not find any difficulty to make their contribution.

Thirdly, we expect every employee of the Government, the public sector and the private sector to donate an amount equal to a day's salary.

Fourthly, the Government desires that the expenses for building the houses, once the materials reach the house site, should be borne by the panchayats. This should be met by them from collections made from within their respective jurisdictions. We propose to donate cement, timber and part of the cost of bricks from the Chief Minister's Fund constituted for the purpose.

Q. There have been some allegations heard from different quarters about the forcible collections made by Government officials and about the non-disclosure of the total collections made so far?

A. Well, the collections have only just started. Unless we collect at least a sizable amount, will premature disclosure help in any manner? When the time comes, the entire accounts will be placed before the people. In fact, the Government *does not want* to disclose the amounts received from each section of the poeple.

I fully believe that people will come forward—indeed they have been coming forward—to make donations absolutely voluntarily, without any compulsions whatsoever. It cannot be gainsaid that people who try to find lame excuses for not making any contributions are blind to the stark realities existing in our society. No one has so far levelled charges or complaint against the selection of one lakh persons from the panchayats as beneficiaries. The selection was made unanimously by the committees which consisted of panchayat members and representatives of political parties in the various panchayats. No one should try to run away from the problem as to whether these people have the right to have a roof over their heads. I have scant regard for the opinions or criticism of persons who are not ready to sacrifice a little for these people. Humanity is dead in such critics though they are no doubt human beings. We should not be blind to another important fact. In

(Continued on page 948)

Labour Institutes' Role in Accident Prevention

An Interview with the Director-General

By S. V. RAGHAVAN

By Our Madras Correspondent

The All-India Seminar on Safety in Dock Work, held at Madras on October 10 and 11, was the third organised by the Central Labour Institute. The earlier ones were held in Bombay and Calcutta.

While the main interest at the Madras Seminar centred on dock workers' safety at the time of handling cargo on and off-board ships, the occasion was also taken by the participants to underline the over-riding importance of workers' safety in industry in general.

Brig G.R. Chainani, Director-General, Factory Advice Service and Labour Institutes, Government of India, was interviewed by *YOJANA* in this connection. Here, he reviews the work of the Labour Institutes in the country during the last few years, particularly their efforts to inculcate safety-consciousness at all levels in industrial establishments, big and small.

Yojana : What contribution have Labour Institutes made towards industrial safety, reduction and prevention of accidents and training workers in safety methods ?

Brig Chainani : Over the years Labour Institutes have contributed to industrial safety in a number of ways and have progressively built up safety consciousness among workers through propaganda, training and education.

The Central and Regional Institutes cover the whole country in the matter of creating and inculcating safety consciousness among workers. Through posters, slides and exhibitions and industrial safety shows with special reference to select areas of activity, like dock labour safety, we seek to publicise not only what we do, but more importantly highlight the safety angle in every field of industrial activity. Vulnerable situations of occupational hazards and the methods and practices that will ensure safety are depicted in the posters and displayed prominently in the work spot.

Central and Regional Labour Institutes have permanent exhibitions demonstrating the arrangements and appliances for promotion of safety and health of workers. Danger to life, limb and health incidental to industrial processes are depicted alongwith the most effective means of protection against such hazards. To carry the message of safety to the factories, mobile exhibitions are being organised.

Yojana : What sort of training and education is imparted in the matter ?

Brig Chainani: Training programmes are arranged in different parts of the country regularly through Chief Inspectors of Factories and Inspectors of Dock Safety. For the workers these training sessions are conducted in their regional languages; so far seven.

One important aspect of the Institutes' training programme is the "Induction Training" for engineering graduates on the safety factor which is imparted during the course of their studies. The Union Ministry of Education has advised all universities and engineering institutions to incorporate 'safety' as an integral part of their curricula.

Education in industrial safety in the Institutes' programmes takes a broader perspective to cover management and labour supervisory personnel, apart from the workers. While receiving training, the workers spend a day at the Central or one of the Regional Labour Institutes to get a closer orientation in safety.

Individual managements are given advice and guidance on safety problems. Surveys of industries are conducted periodically with a view to providing guidelines for improvements. For instance, as a result of such a survey of major Indian ports, we have been able to evolve something like a code of practices for dock labour. This has contributed to a striking reduction of accidents which in 1971 stood at 2,960 as against 5,462 in 1968 representing an almost 50 per cent decline. In the Port of Madras, the accidents came down from 699 in 1969 to 480 in 1970, a reduction of over 30 per cent. In terms of productivity, the cargo handling per man shift at Madras rose from 10.29 tonnes in 1969 to 14.2 in 1970. Similar trend has been noticed at other ports.

Yojana : "Productivity and safety are two sides of the same coin", could you kindly elaborate this statement of yours a little further ?

Brig Chainani : Studies in India and abroad have established the inseparable relation between productivity and safety. A TISCO study on the subject had demonstrated that the department in their larger complex which paid a lot of attention to safety was also the most productive. The Institute's own findings in ports proved that a reduction in accident rate was reflected in an increase in the cargo handled per man shift. Similar has been the experience of USA and other countries.

Yojana : 85 to 95 per cent of the accidents are caused by human failure. What is this human failure ?

Brig Chainani : In simple terms, human failure consists of unsafe acts and unsafe practices, out of carelessness or lack of proper training. In India this attitude of workers is accentuated by a fatalistic view of things as if to say: 'If we are destined to get injured, there is nothing that is going to prevent—care or no care.'

Yojana : With emphasis on productivity, is the safety factor being lost sight of ?

Brig Chainani : The management's attitude to workers' safety should be viewed in the context of the many problems which it has to face from the stage of production to profit. While a large number of

industrial establishments have come to recognise the overriding importance of workers' safety, the few that there may be, it is hoped, will fall in line sooner than later, because it is in their own interest that they do so.

Industrial accidents represent only one side of the loss, though a very serious one, involving as they do loss of life or limb and thus reducing productivity. Monetary loss, cost of disablement benefits to the injured and their families and various other invisible or indirect losses are bound to influence managements to show greater concern in workers' safety and welfare in general. An accident, it must be remembered, has a rippling effect on other workers, who tend to become more cautious and, therefore, more slow at work.

As safety has a direct relation to productivity, it will be better to view it in the total context and not in isolation. It needs the same emphasis as for productivity or other functional requirements.

This is a matter in which, apart from the persevering efforts of the Labour Institutes, the Trade Unions should get more directly involved, and focus attention on workers' safety.

Yojana : What sort of motivation will you suggest to make workers more safety-conscious and more readily amenable to safety codes, on a voluntary basis, as it were ?

Brig Chainani : There are a number of ways. First and foremost, it is to arouse safety consciousness among workers by showing genuine interest. Safety performance may be used as criterion for promotions. Encouragement of safety ideas and suggestions, recognition of 'Zero Accident Records', fixing of safety targets to reduce accidents progressively—each of these backed by a suitable award for individual workers and institutions—are some of the motivations. Government of India has instituted National Awards for Safety, and so far over 282 have been awarded in the last few years. From 1970, the Scheme has been extended to cover large and medium scale factories and ports.

A Letter to the Editor

Raj Committee Report

Sir,

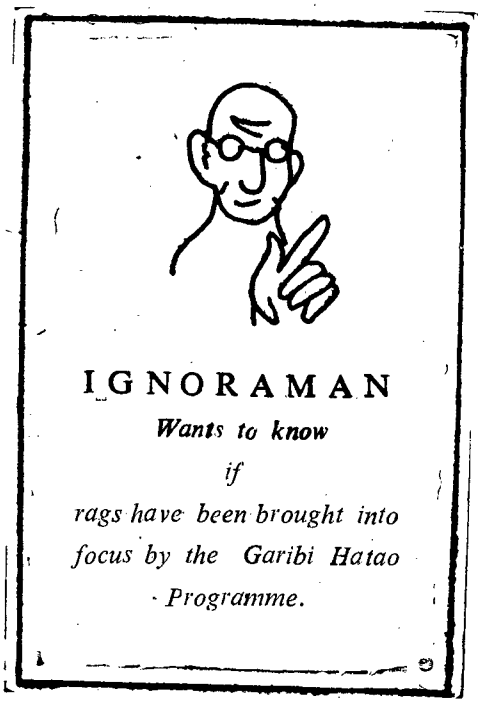
The Raj Committee Report on taxation of Agricultural wealth and income does not seem to have taken into account the various taxation laws in force in the different States in India. The committee recommends the replacement of the existing land revenue which is only nominal when compared to the various heavy taxes affecting agriculturists at present. For instance, in Kerala the agriculturist is already overburdened with the levy of agricultural income tax, plantation tax, panchayat profession tax, sales tax on agricultural commodities, irrigation cess and a host of other taxes in addition to basic tax. The agricultural income tax itself is levied at rates on par with Central income tax rates. The cummulative tax burden on the agriculturist in Kerala is much more than on elsewhere assessees with comparable income under the Central Income Tax Act. The Wealth Tax Act, 1957 has also been made applicable in respect of agricultural land since 1970. In this circumstance there is absolutely no room for any additional taxation as far as a State like Kerala is concerned.

Unless the newly proposed agricultural Holding Tax is in replacement of all the existing agricultural taxes under the various enactments in different States, its implementation would only widen the disparity between different sections of the agriculturists in the country rather than bring the uniformity claimed by the Raj Committee. Whether the Agricultural Holdings Tax is on income or wealth, the levy would in effect be a double taxation on the agriculturist.

Over and above all this, the committee has recommended the implementation of two additional levies i.e. a tax on agricultural property and a tax on capital gains arising out of transactions in property. It is an anomaly that the Government deems it fit to think of taxing the agriculturist so heavily when the world over it is common for producer of nation's food to be helped in every possible way. It can only be hoped that the Government would desist from taking any step which would harm the overburdened Indian farmer.

The committee's report seems to have been prepared in a hasty manner and has overlooked several important questions. The casual manner in which the committee has handled the question of classification of the infinite varieties of land in India is really surprising. The classification into 'districts' or 'tracts' would not serve the purpose at least in States like Kerala, Mysore etc., where each parcel of land is of different soil condition and cultivated with numerous items of crops. Most of the holdings are interplanted. The system proposed to determine the rateable values of holdings in successive years of assessment is not feasible. The committee appears to have failed to go into the practical aspects of the proposed taxation system. It ignored and failed to consult those who are directly concerned like agriculturists, organisations and representatives of taxpayers.

V.C. Emanuel
Vice-President,
Kerala Agricultural Tax Payers' Union



LACCADIVES MOVES FORWARD

K. GOPINATH

THE Laccadives, Minicoy and Amindivi Islands, otherwise known as the Coral Islands in the Arabian Sea, consist of 20 islands. Of these only ten are inahabited. These islands with a total area of 32 kms are situated about 200 to 400 kilometres off the Kerala coast.

On the recommendations of the States Reorganisation Commission, these islands were constituted into a Union Territory on November 1, 1956 with headquarters in Calicut in Kerala State. The entire inhabitants are Muslims classified as Scheduled Tribe. They belong to the Shafi school of the Sunni sect.

The People

The population of the islands is 31,798 and it recorded a decennial growth of 31.5 per cent between 1961-71 as against 14.61 per cent from 1951 to 1961. The density of population is 994 per sq km, the third in rank in the country. Sex ratio is 980 females per 1000 males, as against 1021 females per 1000 males in 1961.

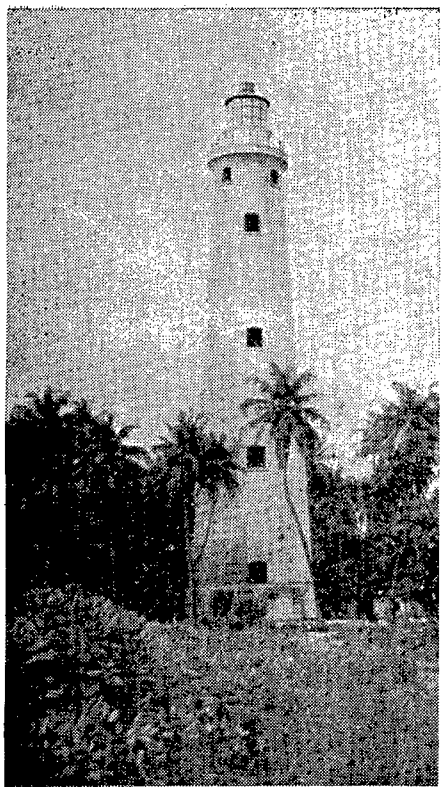
Shri Gopinath is AIR's Correspondent at Calicut.

The people in all the islands except Minicoy speak Malayalam with local variations peculiar to each island. But the inhabitants in Minicoy speak Mahl, a mixture of Urdu and Sinhalese, the language of Maldivian islands. The poeple of Laccadive and Amini groups wear the same dress and ornaments as the Muslims in Malabar. But the Minicoyans attire like Maldivians. The islanders still observe caste system. The main castes in all the islands except Minicoy are Koya, Malmi and Melacheri. Koya is the highest caste. Malmis are sailors or fishermen, and the Melacheris are the working class or tenants. The four castes in Minicoy are Manikfan, Thakrufan, Thakru and Raveri. Inter-caste marriage is not permitted. The inhabitants are governed by the *Marumakkathayam* law (succession in the female line).

Feminine finery

Then and Now

When I first visited the islands early in 1960, the islands were mostly cut off from the mainland with no dependable link for almost six months in a year. The only means of transport readily available were country crafts locally known as *odams*; the exception was a small chartered cargo-*cum*-passenger ship M.V. Seafox. There was no supply of newspapers. There were no good schools or office buildings, no dak bungalows, hotels or tea



Light House, Minicoy

shops. Living conditions in these islands were unsatisfactory and the people depended on the meagre supplies carried by the limited means of transport. It was not possible to get milk. Most of the animals and birds of the mainland were not found on the islands. It was difficult to be in touch with the mainlanders and *vice versa*. The people were generally backward, ignorant, illiterate and superstitious. But they were innocent, honest, straight forward, friendly and hospitable.

Coconut cultivation, fishing, copra and coir making were the occupations of the people. Scientific cultivation was unknown to them. The Minicoy people were found to be expert fishermen and seamen even at that time, but they suffered from lack of opportunities. The famous lighthouse established in 1885 and the meteorological observatory in Minicoy were the only important government institutions in the entire territory during those days.

When I visited these islands again in 1969, I was surprised to witness the tremendous planned progress in this territory in the various sectors of the economy within a short period of ten years. There were canteens to provide food, dak bungalows for the night's stay and one could buy anything from the cooperative stores. My subsequent visits to these islands have revealed that this territory is marching ahead with speed towards prosperity.

The headquarters of the territory was shifted from Calicut to Karavatti in 1964. The commissioning of Administration's first ship M.V. Laccadives with passenger capacity of 39 persons and cargo capacity of 50 tonnes was a milestone in the history of Laccadives.

M.V. Amindivi, an all-weather ship with passenger capacity of 112 persons and cargo capacity of 800 tonnes built in Yugoslavia at a cost of Rs 2 crore for the Administration was commissioned on the April 4, 1970. This luxury ship is one of the fastest vessels in the country. It is a shining symbol in the progress of this Union Territory. Commissioning of this ship marked the beginning of a new chapter as this vessel guarantees communication and transport facilities throughout the year.

Educational Progress

One of the most outstanding achievements of this territory has been in the field of education. The decennial growth of literacy between 1961 and 1971 is estimated to be 86.68 per cent, the highest in the country. Literacy has increased to 43.4 per cent in 1971. In 1956 there were only 9 Lower Primary schools housed in dilapidated buildings. The teaching staff consisted of 28 island teachers mostly untrained or re-employed persons. But the number of schools at present is 39 including one Higher Secondary School at Kavaratti and 4 High Schools one each at Androth, Ameni, Kalpeni and Minicoy Islands. Impressive progress has also been made in girls' education. There are now nearly 325 teachers. In other words, there is one teacher for every one hundred persons in the islands. One fourth of the entire population is now studying in schools. The strength of students in schools was 7,277 including 2,767 girls in 1971-72 as against 7,121 in 1970-71.

The medium of instruction in schools is Malayalam. Hindi is a compulsory subject. Nearly 200 students are studying in post-matriculation courses on the mainland at present. Education is free at all levels.

The first junior college named after the late Prime Minister Jawaharlal Nehru and affiliated to the University of Calicut, was inaugurated in Kavaratti in July this year. This marks a new era in the progress of education in this Union Territory.

In order to provide self-employment, the administration has decided to lay emphasis on job oriented education by introducing fisheries as a subject from the 8th standard onwards. The college will also be converted into a college of fisheries technology in due course.

Harbour Development

Embarkation and disembarkation and loading and unloading have to be carried out in the open sea, away from the islands. In order to minimise this difficulty and to take fishing boats into lagoons at all times, harbour development works with a provision of rupees one crore was sanctioned in 1967. The plan envisages harbour facilities for entry of ships of the size of M.V. Laccadives of 3 metre draft into the lagoon of Minicoy and Kavaratti and navigational facilities, channels and entrance to lagoons in other islands.

The channels leading to the lagoons in Minicoy were deepened by using two grab dredgers. Minicoy harbour was inaugurated by Shri K.C. Pant, Union Minister of State for Home Affairs on April 26, 1972 by taking the ship M.V. Laccadives from the open sea to the lagoon.

In Kavaratti the entrance and channel have been deepened to provide easy passage for small vessels. Under-water drilling and blasting operations are in progress. A jetty has been completed and a shipway is under construction in this island.

The lagoon in Amini is very shallow and dries up at the time of low tide. Under-water drilling and blasting operations have been done and boats and *odams* can now be

taken into the lagoons and anchored safely. A jetty has also been constructed in this island. Work is on hand under a crash programme in Kadamat, Kiltan, Chethlat and Bitra islands for deepening entrance and channels in the lagoons to facilitate movement of fishing boats and small vessels.

The sea near the islands is criss-crossed with international shipping routes. Several shipwrecks have been reported in the past close to Minicoy, Suheli and Kiltan slands. The Minicoy Lighthouse established in 1885 is internationally well-known. Another lighthouse was established in Androth island in 1968. A lighthouse each is under construction in Kiltan, Kalpeni and Suheli islands. Light trestles have been provided for homing fishing boats in Kavaratti, Amini and Agathi islands. There is a proposal to constuct trestles in Chethlat and Bitra islands this year.

The inauguration of a post office in Bitra, the tiniest island with an area of about 10 hectares and a population of only 112, on May 8, this year completed the establishment of post offices in all the 10 inhabited islands.

Telecommunications

There was only one wireless telegraph office in Minicoy island till 1960. Wireless telegraph offices have been subsequently established in all the islands except Bitra. The wireless telegraph channel between Calicut and Kavaratti has been doubled recently.

An internal telephone exchange was opened in Kavaratti last year. Two more are proposed to be installed in Androth and Minicoy islands. Installation of radio telephone equipment linking Kavaratti and Calicut is in progress. There is also a plan to link the Kavaratti-Calicut radio-telephone link with Androth and Minicoy islands in due course.

Even after commissioning of the all-weather ship, it has not been possible to ensure regular supply of newspapers to the islands. The islanders have to depend on radio for current news. In this, the Calicut station of A.I.R. is playing an important role in providing news and other information to the islanders. It is broadcasting a daily service for the islands for half an hour. This consists of 15 minutes programme in Malayalam and 15 minutes programme in Mahl, including a daily news bulletin in Mahl for 5 minutes. Calicut is the only station in the country which broadcasts news in Mahl. Almost all families in the islands now possess radio sets of their own.

Health Services

Before the formation of this territory health services were inadequate. There were only six dispensaries but only in name, because medicines were not readily available. Leprosy, filariasis, smallpox, etc., were frequent among the islanders.

There are two well equipped hospitals at present. Of these a 30-bed hospital is in Kavaratti and the other a 20-bed one is in Minicoy. A 10-bed Primary Health Centre has been established in each one of the remaining islands except Bitra. There has been no case of smallpox in the islands during the last four years. Leprosy and filariasis have been brought under control.

It is worth mentioning that out of the 11 Medical Officers employed in the islands at present eight are islanders including a woman. When a rural health centre in the country has to look after an incredible number of 80,000 people, there are two hospitals and seven primary health centres with a total bed strength of 120 in this territory for a population of nearly 32,000. As against the doctor-population ratio of 1 to 4,300 in the country, the ratio is 1 to 2,900 in Laccadives. Medical attendance and medicines are free. Acute cases are taken to mainland for treatment at government expense.

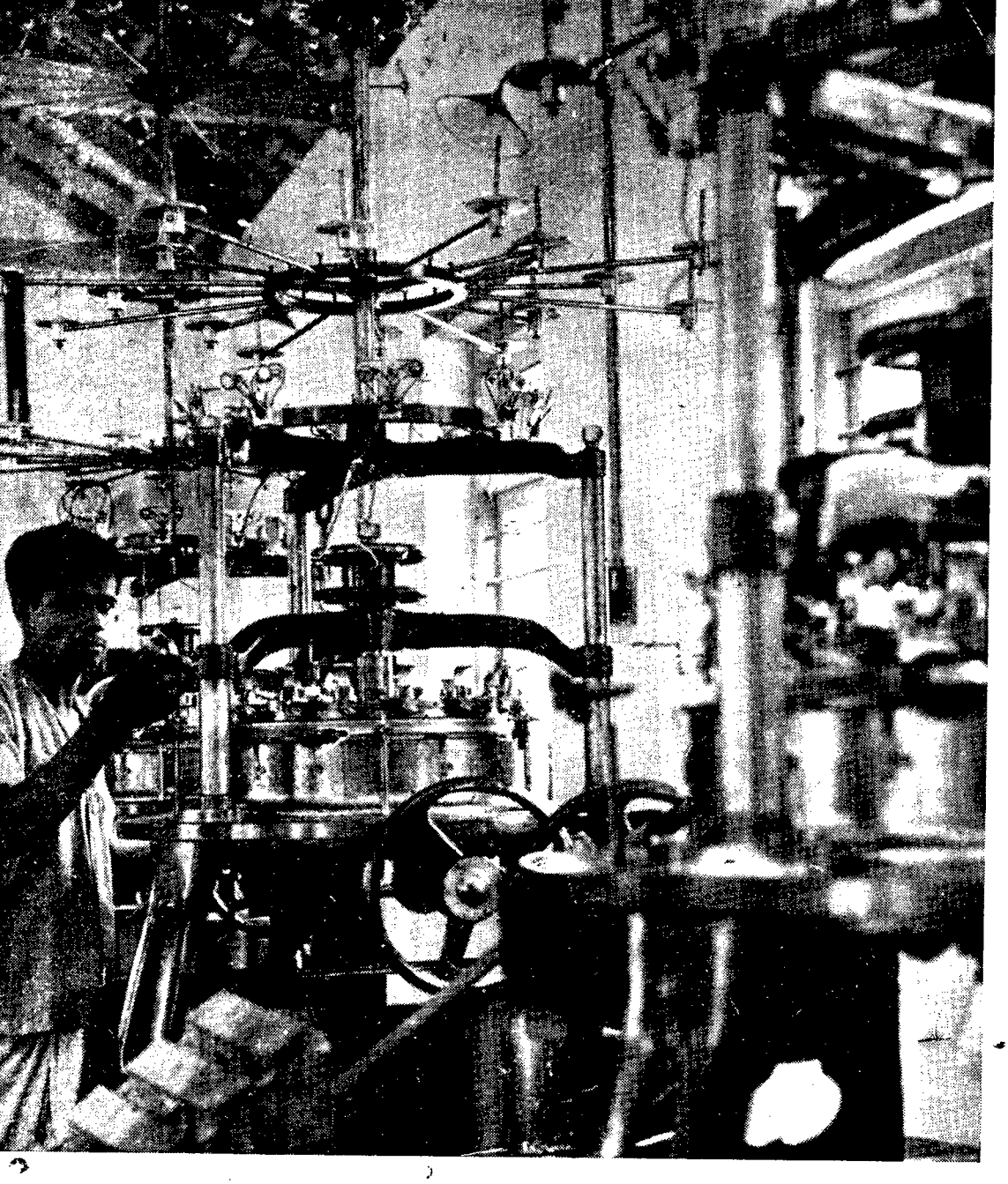
Development of fisheries is the glittering ray of hope for the future of these islands. Laccadive waters offer rich fishing grounds. There is ample scope for turtle rearing in the lagoons in Minicoy and Suheli islands. Top priority has been given for the development of fisheries.

The islanders were using primitive methods of fishing till recently. Even though there was some opposition from the islanders against the introduction of mechanised fishing, it gradually became popular. There are about 100 mechanised fishing boats in operation at present. The fish landing went up to 1200 tonnes in 1971 as against 575 tonnes in 1960.

Mechanised Fishing

A boat building yard was started in Kavaratti island in 1964. Thirty-one boats were constructed here and 20 are now under construction. A pilot canning factory for canning tuna was started in Agathi island in 1963. Another tuna canning factory was commissioned in Minicoy

Coir processing is a main industry for the Islanders



Inside Hoisery Factory

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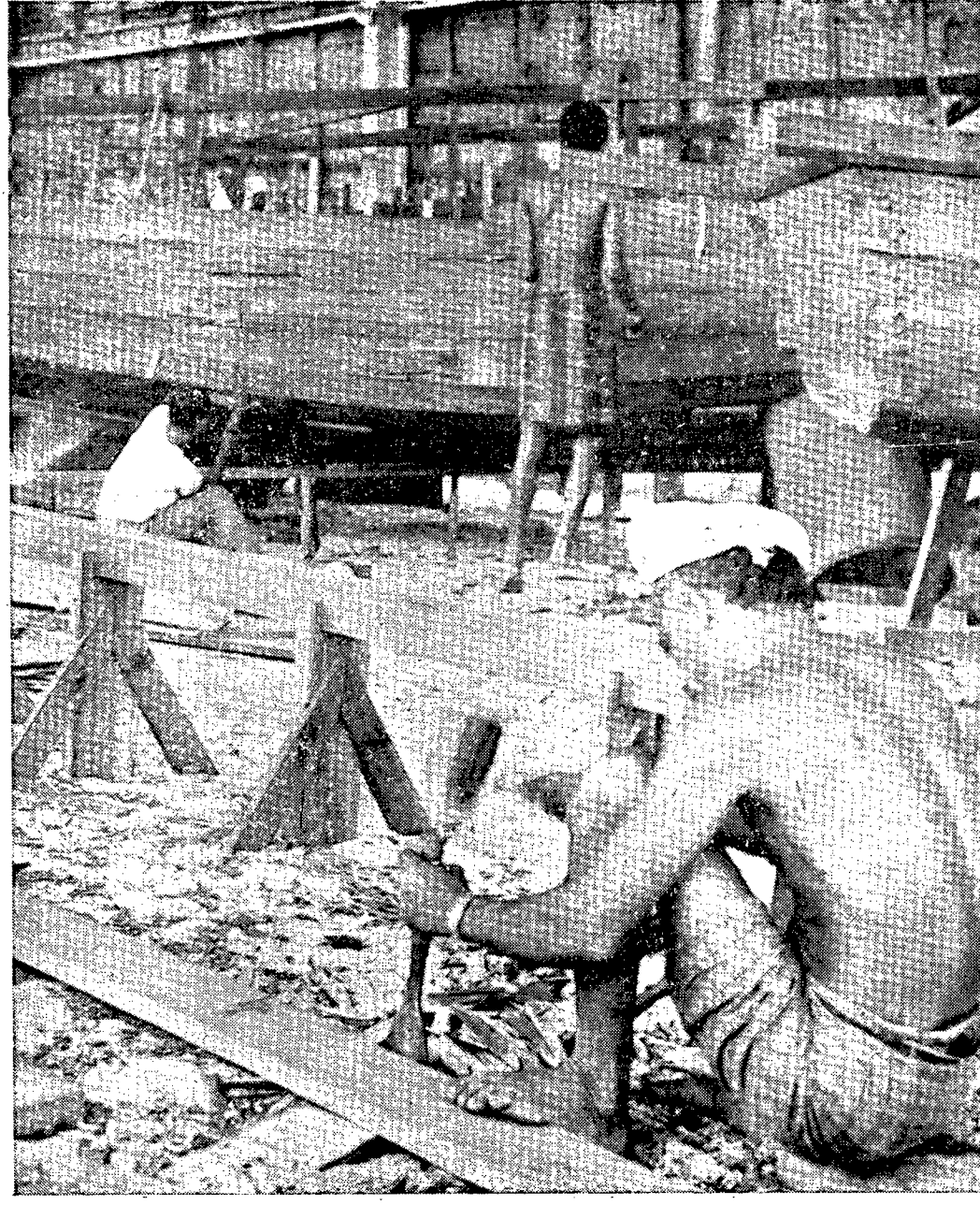
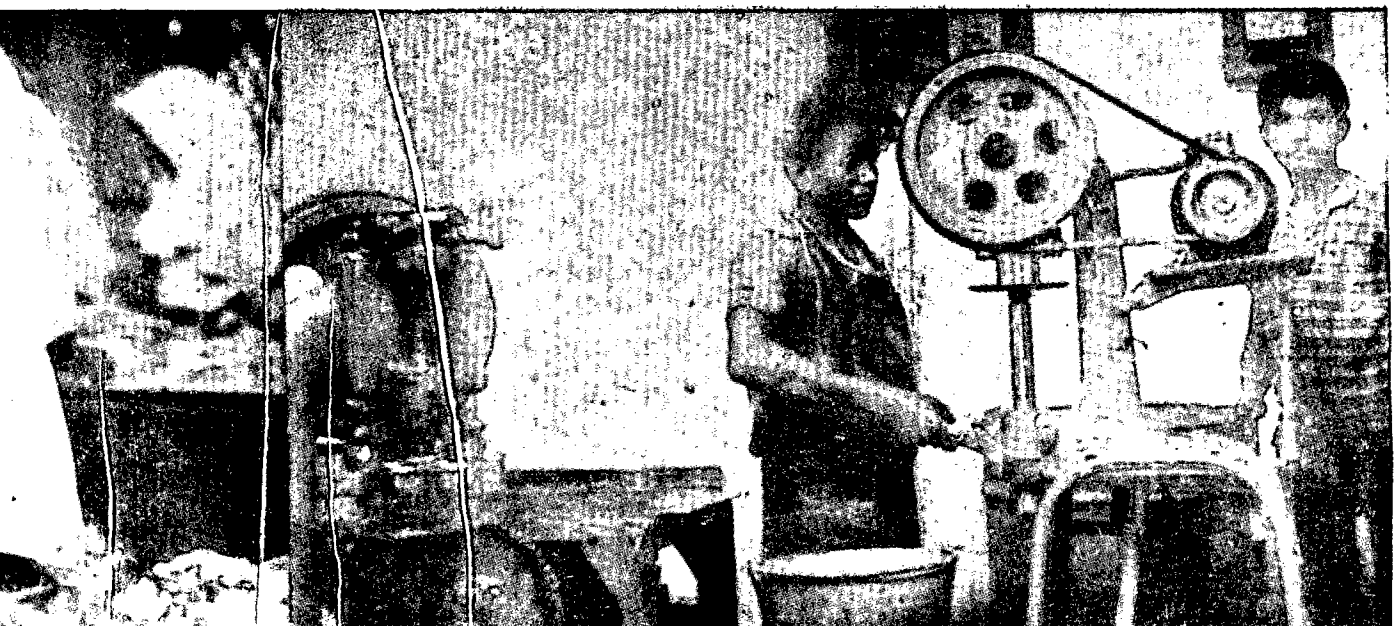


Making Boats, important capital equipment for fishing

lajor stages in fish processing, bones, and canning



in 1969 with an installed capacity of two lakh cans per year. 1200 persons are now employed in fisheries development as against only 12 in 1960. Construction of a fishing harbour in Kavaratti is in progress.

Inauguration of the first fisheries training centre in Minicoy island on the April 26, 1972 fulfils a long-felt need of this Union Territory. Fisheries constitute the main resources for Laccadives and the economy of the islands largely depends on its exploitation. The potential skipjack tuna resources of Laccadives waters are great. This can earn considerable amount of foreign exchange. During the last decade the progress in the exploitation of the resources has been steadily improving. Laccadives skipjack canned tuna has been rated very good in international markets. So far training was given to fishermen on practical aspects of fishing only. The need for institutionalised training incorporating fishing, navigation, repairs and maintenance of engines and boats, preservation and marketing of fish, etc., is now met by this centre. Training is imparted in this centre for a batch of 20 for a period of 10 months. They are supplied with mechanised fishing boats under subsidised cost on completion of their training.

In order to eliminate exploitation by middlemen, cooperative movement was first launched in 1962. Supply and marketing cooperative societies were established in nine islands during that year. The membership in the supply and marketing societies have gone up from 2,187 to 2,500 within a short period. A unique feature is that all the families in the territory are members of the cocopertive societies. The value of copra marketed through these societies last year worked out to Rs 70 lakh.

An important development was the establishment of primary supply and marketing societies which cater to the basic needs of the islanders. The coordination of their activities by the formation of Apex Marketing Societies was achieved in July 1967, when the Laccadive Cooperative Marketing Federation was started. It has established a forwarding centre in Calicut and taken up operation of a 90 tonne capacity power vessel "Sahakari" to facilitate quick transport of goods to the Society.

The cooperative movement has spread to other sectors also. By 1971-72 the number of cooperative societies had gone up to 26. The first fisherman's cooperative society was started in Minicoy in 1967. Subsequently one each was opened in Agathi and Kiltan islands. The first service cooperative society was started in Kalpeni island. Similar societies are now functioning in Minicoy, Kavaratti, Agathi and Kadamat islands. There are also labour contract cooperative societies and a carpentry society.

The societies have been functioning well and exploitation has been completely eliminated. The islanders are ensured not only fair price for their products but also supply of essential commodities needed by them. They are fully aware of the great services rendered by the cooperative movement in the territory.

Electrification

The Minicoy island was first electrified in 1962. Kavaratti, Androth, Amini, Agathi, Kadamat and Kiltan isalnds have since been electrified. Two more inhabited islands have to be electrified. Of these, work on electrification of Chetlat island is in progress. Birta will also be electrified by the end of the Fourth Plan. Augmentation of electricity supply to Minicoy and Kavaratti islands has also been taken up.

Though there is a little sense of isolation among the people even now, there is no feeling of frustration. With the improvement in transport and communication facilities, the sense of oneness among the islanders is also growing day by day. The islanders do realise that they are part and parcel of this great country. They rose as one man along with the rest of the nation at the time of Chinese and Pakistani aggressions against India. They voluntarily manned check posts and observation posts along with the police. Their vigilance continued throughout the period. All the islanders contributed liberally to the National Defence Fund.

There is one Advisory Council associated with the Administrator and another Advisory Commitee associated with the Home Minister of the Government of India to advise the Government on matters relating to the development of the territory. Citizens' Councils, development committees and traditional institutions of *Karanavans*, *i.e.*, village leaders are also functioning successfully in all the islands. The century old custom taking only high caste islanders as *Karanavans* has been changed. The low caste people of Raveri and Melacheri castes also get an opportunity to serve as *Karahavans* subject to merit.

The illiterate and superstitious islanders had their own suspicions about the modern ways of life in the beginning. Having experienced the benefits of progressive measures, they now fully cooperate with the Administration. In short, the 'sixties was a decade of all round development for the islands, ushering in an era of hope for the people. The islands continue to march forward to be on par with the rest of the country.

A view of Laccadivian Beach

Impact of Urbanisation on Developing Economies

RAMESHWARI SAXENA

THE process of urbanisation is closely related to economic development but the relation is far from being as simple as it is often treated in the literature on the subject. The purpose here is to study the effect of urbanisation on economic development with special reference to the developing economies. First, it examines the impact of urbanisation on the process of capital formation, the most essential factor for economic development. Secondly, it examines the economic implications of urbanisation in general perspective.

Capital Formation

According to Professor Ragnar Nurkse, "The meaning of capital formation is that a society does not apply the whole of its current productive capacity to the needs and desires of immediate consumption, but directs a part of it to the making of capital goods, tools and implements, machines and transport facilities, plant and equipment, all the various forms of real capital that can so greatly increase the efficiency of productive efforts". The process of capital formation has got two aspects—the supply of capital and the demand for capital. The former is governed by the volume of saving and the latter by demand for investment.

It appears that, in the initial, stage, the phenomenon of urbanisation leads to a reduction in the rate of saving. The consumers in urban areas follow such a consumption pattern that their overall propensity to consume increases with the increase in income.

However, the statement can be nullified on the ground that urbanisation helps in developing monetary sector in the economy and stimulates the public institutions concerned with savings and investment and thereby increases the prospensity to save. Further, the underdeveloped countries are generally characterised by disguised unemployment, which implies that a substantial proportion of the labour force, actually contributing nothing to the production, is employed on land. These disguisedly unemployed people draw their subsistence from the income of the productive population on land. Urbanisation, by removing the disguisedly unemployed people from land and setting them into productive activities, increases the saving of the remaining people on land. Regarding the savings of people in urban areas, it may be said that their expenditure increases on account of the change in habit and social structure, but it is more than compensated by the increases in per capita income resulting from the application of the improved methods of production which accompany urbanisation. Thus, urbanisation increases the overall savings.

Pattern of Investment

The high rate of urbanisation has had a far greater impact on the pattern of investment than on the volume of savings. The economists dealing with economic development often make a distinction between investment in social overhead capital and directly productive investment. According to Hirschman, the former comprises "those basic services without which primary, secondary and tertiary productive activities cannot function. In its wider sense, it includes all public services from law and order through education and public health to transportation, communication, power and water supply as well as such agricultural overhead capital as irrigation and drainage systems." Directly productive investment is primarily made for industrial projects, but it also covers building and other construction works including energy production.

Rapid urbanisation in underdeveloped countries is said to hamper economic development because it increases the demand for investment in social overhead capital as against the need to invest in directly productive activities. The investment in directly productive activities is more productive than that of social overhead capital. Thus, urbanisation by putting the demand for less productive projects (in the immediate sense) on the scarce capital resources distorts the pattern of investment in the sectors that might be conceived as the most efficient from the general economic development and employment points of view. Consequently, the greater the proportion of investment resources earmarked for urban services the lower will be the pace of economic development.

The argument that urbanisation hampers economic growth in underdeveloped areas through the misallocation of scarce capital resources, is not relevant. In fact most of the developing countries of the world do not have even the minimum volume of social overhead capital which must be provided if economic development is to be accelerated. In these areas there is a great need of investment in social overhead, in order to assist economic development, because such investments facilitate directly productive activities

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on the one hand and contribute to human welfare on the other. Professor N. V. Sovani very clearly indicates the urgency of investment in social overheads when he says that "in regard to most of the underdeveloped areas, the infrastructure investments are necessary both in rural and urban sectors and a large part of the available capital resources has to go into them".

Even the assumption that efficiency of investment in directly productive activities is greater than that of social overheads, may be questioned. The product of the former can be measured in physical units whereas the product of the latter cannot be measured in physical units. It is very difficult to compare a measurable product with one which is not easily measurable.

This analysis leads to the conclusion that urbanisation affects both the components of capital formtion, *viz.*, savings and investment favourable to economic development in the underdeveloped countries.

Economic Implications

So far as the economic implications of urbanisation are concerned, it would be convenient to divide the whole economy into two sectors, agricultural and industrial, and examine its impact on the efficiency of both the sectors. The process of urbanisation removes the excess labour force from agricultural sector and sets them into productive activities. As a result of increase in their income the demand tends to raise prices and provides an incentive to increased production. It also furnishes a suitable market for commercial crops and encourages their production. In addition, the growing urbanisation provides agricultural tools and implements, capital and organisation, and new techniques for agricultural production. This brings modernisation in agriculture which increases the agricultural productivity. As a result, less labour is required per unit of land to produce the same or even a higher agricultural output.

It is no accident that urbanisation and industrialisation go hand in hand. They are positively correlated with each other. It can be said that urbanisation prepares the ground for industrialisation.

Positive Correlation

According to Dr Ashish Bose, "economic history of every country reveals a close relationship between industrialisation and urbanisation. Modern large scale industries cannot develop unless there are adequate economic and social overheads and economics of scale are available and these are available only in the big towns and cities." Kingsley Davis has expressed this relation even more emphatically. He points out, "it is not possible to have industrialisation without urbanisation. There is no nation in the history which has undergone ecnomic transformation without experiencing the urban change".

Similarly, this relationship, especially in the case of developing countries, has been the subject of much research and extensive publication. Without going into details, it can be reasonably deduced from them that urbanisation provides the basic requirements necessary for the development of industry and thus it facilitates the process of industrialisation. Thus, urbanisation implies a change in the occupational structure of the working force towards non-agricultural activities. In his world-wide study, 'The Conditions of Economic Progress', Professor Colin Clark has indicated that the graduated shifts of the active population from agriculture to industry and from industry to services in general is characteristic of any economic progress. It is obvious, therefore, that urbanisation increases the efficiency of labourers by providing them suitable employment opportunities.

From the above analysis, we can conclude that the process of urbanisation in developing economies of the world helps them in achieving their objective of rapid economic development.

Kerala's 'One Lakh Houses'

(*Continued from 937*)

the last 25 years, the total number of houses built for Harijans by using budgetary resources has only been 500. At this rate it might take at least 200 years to build houses for one lakh persons. Talking of progress all the time and closing one's eyes to such problems is indeed an inexcusable crime.

Q. There has been some criticism by architects and others that the design for the houses lacks in convenience and appearance and that the allocation of one house to two families would lead to all sorts of complaints. What do you say ?

A. First of all, it is necessary to keep in mind the fact that this scheme is to meet one of man's most basic needs as expeditiously as possible. However, I wish to point out that the design was prepared on the basis of discussions held more than once with expert architects. Well, there might be all kinds of criticisms about the lack of convenience and facilities in the proposed house. It is but natural. However, the immediate need is to provide shelter for those who have absolutely none at the moment. Let us fulfil that first. We will think of facilities when we build houses for other groups and categories of people.

Q. Do you visualise the continuation and extension of the 'One Lakh Houses' scheme as a programme of social action ?

A. This is a new experiment. I believe we would be able to complete the present scheme by January next. Further programmes will depend on the success or failure of these schemes. In any case, one thing is sure. For meeting the basic needs like housing and employment, the Government would aim at the total mobilisation of manpower of the entire people.

(*This was earlier published in the Malayalam edition of YOJANA dated November* 15, 1972)

In The Service of the Nation

Veterinary Research Institute at Mukteswar

R. K. BHATNAGAR

SITUATED at a distance of 52 km. from Nainital at an elevation of 7500 feet above the sea-level, Mukteswar is a fascinating small town. Its total population is not more than 2700. The highest point is adorned by the historic temple of Lord Shiva from which Mukteswar derives its name.

On a clear day, the entire 21 miles of unobstructed stretch of silvery majesty of Himalayas is visible from here and one can watch with delight snow-clad peaks of Nanda Devi, Kamet, Mana and Trisul.

Proud Record

Apart from the picturesque surroundings, salubrious climate and balmy breeze, Mukteswar is noted the world over for the Indian Veterinary Research Institute (IVRI) which is located there. It is a premier institution and one of the best in the world. The Veterinary Research Institute was originally set up in Poona in 1889 where it was called the Imperial Bacteriological Laboratory. The congested surroundings and warm climate of Poona were soon found unsuitable for bacteriological work.

Cattle plague was the foremost problem for investigation and it required a large number of uniformly susceptible cattle year after year. The hilly terrain of Mukteswar offered an ideal facility for isolation so essentially required for work on contagious diseases. The Institute was, therefore, transferred from Poona to Mukteswar in 1893.

An American scientist who visited the IVRI at Mukteswar, nearly three decades ago, said: "I am positive that this institution ranks among the three best animal disease research institutions of the world. India should be very proud of this institution."

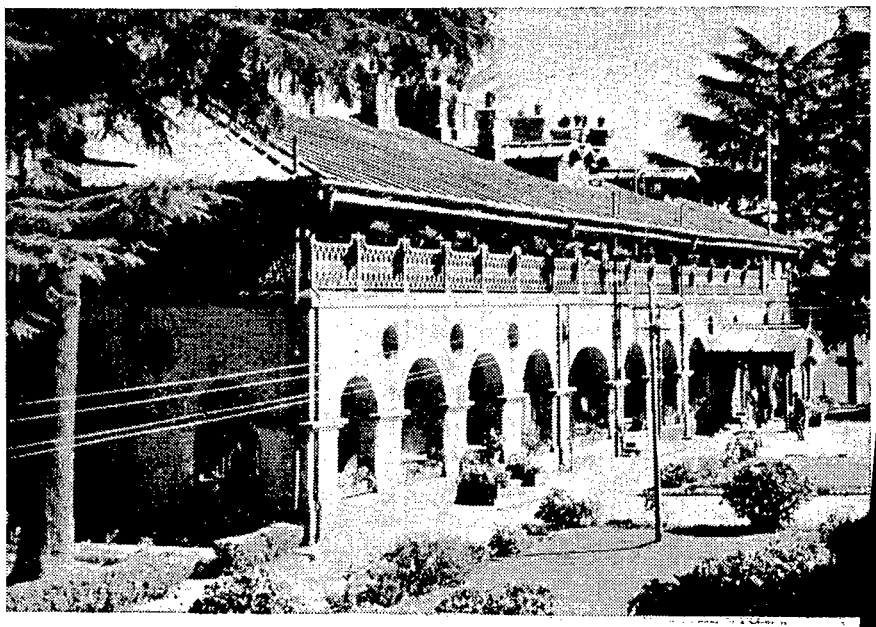
With the attainment of independence, the importance of developing the enormous livestock resources was increasingly felt. With the reorganisation of the Indian Council of Agricultural Research the IVRI was made part of it and is now one of the three national institutes under them. It comprises 14 divisions at Mukteswar and Izatnagar.

Spread over an area of nearly 14 sq. km., the Division of Bacteriology and Viriology in Mukteswar is engaged in the investigation and control of bacterial and viral diseases of animals. Its outstanding contributions include the evolution of vaccine against Rinderpest and Ranikhet diseases. Research carried out at the IVRI recently on virus diseases resulted in the development and mass production of tissue culture vaccines for the control of Foot and Mouth disease and Rinderpest. Efforts are afoot to evolve a suitable vaccine for sheep pox. It has also taken in hand the laboratory tests to find out the nature and extent of the transmission of diseases from the pet animals like cat and dogs to men.

Mukteswar has the distinction of having a goat farm where Pashmina goats are raised. These goats have an outer coat of kempy long hair and an undercoat of fine Pashmina. A large number of Pashmina goats brought by Tibetans, when Dalai Lama came to India, were purchased by the IVRI to use them as the foundation stock and to breed them with Angora goats. It would help develop an animal with an outer coat of Mohair and an inner coat of Pashmina. Work on this project is progressing well and in time to come these goats would serve as a nucleus for an industry to be developed in the entire Himalayan belt.

The Institute attracts students and in-service trainees from various parts of the country and also from abroad; IVRI imparts advanced post-graduate training at M.V.Sc. and Ph.D. levels and national diploma courses in Bacteriology, Viriology and Preventive Medicine.

A view of the Mukteswar Institute building



Shri Bhatnagar is Assistant Information Officer, P.I.B., New Delhi.

newsletters

North-Eastern Council—A Step towards Greater Coordination

(From Our Shillong Correspondent)

THE North-Eastern Council (NEC) inaugurated by the Prime Minister on 7 November last, marks a significant step forward towards common development of the States and the Union Territories constituting the region. Formed under the North Eastern Council Act of 1971, the NEC is to function as an Advisory body in matters of common interest, particularly those relating to ecocomic and social planning, inter-State transport and communication, power, and flood control. Its main objective will be to bring about coordinated and balanced development of the North East Region and secure the willing cooperation of all concerned. The NEC will also review the measures taken by the constituent States for maintenance of security and public order and recommend to them further measures which need to be taken for the purpose.

Besides formulating a unified and coordinated regional Plan in regard to mutually agreed matters, the Council will be concerned with fixation of priorities for the projects, selection of sites for the approved ones and allocation of benefits as well as expenditure to the member units in respect of the common schemes. The common projects in their various stages will also be accordingly reviewed and coordinated and measures suggested by the Council for their efficient implementation.

Culmination of a Process

The setting up of NEC has rightly been described as the culmination of the process of giving recognition to the socio-political aspirations of diverse groups of people who sometime or other belonged at least geographically and administratively to undivided Assam. Creation of Nagaland as a full-fledged State in 1963 was the first step in the series taken to accommodate the new aspirations of the people of the north-eastern region.

Even during the exciting moments of Hills State movement there had been growing realisation among the local intelligentsia that the problems and difficulties of the entire north-east region were by and large identical in nature and that they could not be solved in isolation. All the present and future political units would have, therefore, to work in unison in different spheres of economic endeavour and to harness the vast resources of the region. The establishment of the NEC is an inescapable outcome of this realisation.

The Constituents

The five States Assam, Nagaland Tripura, Manipur and Meghalaya, and the two Union Territories Arunachal and Mizoram, which form the constituent parts of the NEC, have in all an area of 2.55 lakh sq. km and a population of 19.6 million and account for 8 per cent of the country's geographical surface and 3.6 per cent of its total population. Ethnically and linguistically heterogeneous in character the region has a glorious past and is blessed with vast nautral resources. Nevertheless, all its constituent units are economically backward—some being very backward. Apart from its geographical isolation, and new stresses and strains imposed by the partition of the country in 1947 this region has so far largely remained underdeveloped. Not to allow this situation to perpetuate further, especially after the reorganisation of the region into as much as seven separate political and administrative units, it had become inevitable to bring these units under a common forum so that the compulsions of the new geo-political realities as also the overriding unity of economic interests of the peoples of this region could be met.

With the Fifth Plan in the offing, the NEC is now busy constituting working groups which will include representatives of the Central Ministries, the Planning Commission and of the respective units. It is also contemplating the creation of an advisory cell in the Council itself under the Planning Adviser. This expert body will advise the Council as well as the individual units in matters of regional economy like floods, and development of forests, minerals, agriculture and dairy. The Council secretariat which has been functioning with Secretary as its head since August last, will also include a Security Adviser, a Finance Adviser and other essential staff.

Cautious Optimism

To the idea of the NEC as was originally spelled out the press and the public, particularly in Assam, were quite critical. It envisaged some executive power to the Council, and a common Governor with some special powers, common Public Service Commission, and single cadre of All-India Services. The original scheme was opposed on the ground that it would make inroads into the States' autonomy and practically reduce their status to that of Centrally administered territories. While the doubts and fears which were being expressed at the initial stage of its conception, have been effictively dispelled by the declaration of the Prime Minister that the NEC would only be a recommendatory body and never be a "super government", there are still a number of public organisations as well as some section of the press entertaining misgivings about the usefulness of the scheme. The Assamese language press which spearheaded the opposition both before and after the Council's inauguration, continue to entertain doubts if the advisory powers of the Council in respect of security and public order would not finally impair the fundamental rights of the component units. Many of them do not relish the idea of the Governor becoming the chairman of the common forum where the elected public representavies are the members. The Assam Express, an English daily, asked why of all the States of the country, the north-eastern region alone has been chosen

as the guinea pig of Centre's political experimentations.

The Assam Tribune, however, is in favour of giving the NEC scheme a fair trial. Sounding a note of optimism it said that if the NEC is allowed to grow in the spirit it was conceived, the scheme might set an idea of a coordinating agency for other regions of the country to follow.

The North-Eastern Council in its first meeting held under the chairmanship of Shri B. K. Nehru, the Governor of Assam and all other States of the region, decided to locate its headquarters at Shillong, and drew up urgently useful schemes benefiting more than one States for implementation during the remaining period of the Fourth Plan. The Prime Minister, it may be mentioned here, had declared on the occasion of the inauguration of the Council that the Government of India would make available to the NEC upto Rs 50 crore for regional projects to be taken up during the Fourth Plan itself. This amount will naturally be in addition to the Fourth Plan outlay of all the individual units. The total approved Fourth Plan outlay of all the units barring Mizoram, is Rs 384.62 crore. Mizoram's Annual Plan outlay for 1972-73 is Rs 2.75 crore.

Priorities

As the major economic constraint of the region is its very undeveloped transport and communication system, the Council has decided to give highest priority to the same in its developmental programmes. After taking into account the common projects to be named and suggested by the respective member-units, the NEC will finalise the concrete schemes and hand these over to the concerned States/ Union Territories for execution. Whereas something between Rs 40 crore to Rs 42 crore, according to preliminary thinking, would be earmarked for construction and development of power, roads, and other lines of communications, the rest of the anticipated Central grant would be spent on starting common industrial projects, research, development and training centres.

The NEC was also unanimous in respect of evolving some arrangements to develop technical know-how within the region itself of which there is a great dearth, and to make the same available to the member units. The Planning Commission has agreed to provide necessary assistance and expert services to help it in the identification of Planning problems and requirements as as potentials of the region.

River Link with Assam Resumed

RIVER services between Assam and the rest of the country through Brahamputra were resumed on November 20 last when the Central Inland Water Transport Corporation's cargo vessel *Zangi* sailed out of Pandu for Calcutta via Bangladesh. Pandu—5 km upstream of Gauhati, is an ancient river port of Assam. Two other vessels *River Ganga* and *Ghotana* of the Corporation, left Calcutta port the previous day for Gauhati in Assam and Narayanganj in Bangladesh. The steamer services along the 1,533 km river route between Gauhati and Calcutta were suspended in the wake of the Indo-Pak war, 1965.

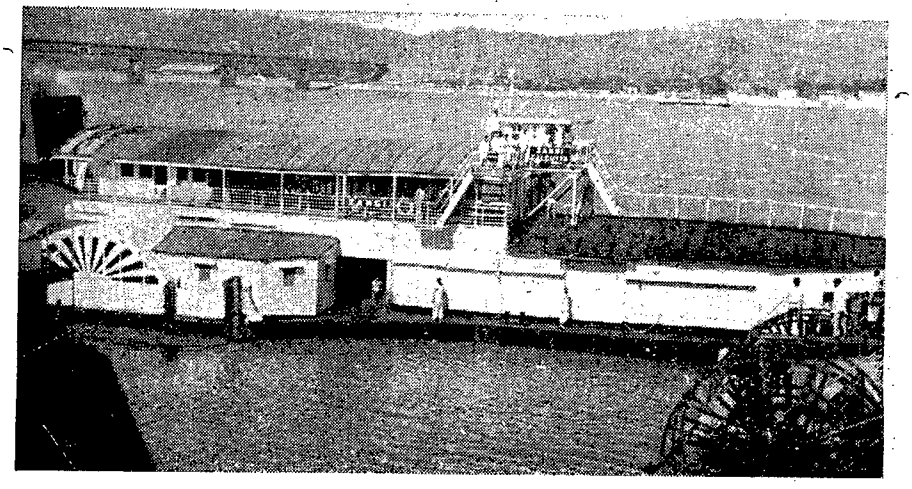
Assam had been dependent on this river route, it being the only link with the rest of the country till the roads and the railway lines were laid. Even after Independence, over 90 per cent of Assam's tea and jute exports used to be carried by the steamers. The State's economy naturally suffered a great setback with the snapping of this vital river link. The construction of the only bridge over Brahmaputra and some other improvements in road and rail communications including extension of the broad-gauge rail line to Jogighopa, also proved inadequate.

The resumption of the steamer service augurs well not only for export of Assam's traditional commodities, like tea, jute, coal, timber, lac, oil seeds, and other forest produce, but also for the navigation within the State itself.

FLOODS SHOW THE WAY

VERY few parts of the world perhaps have had the misfortune of being so hardly hit by floods in their awful fury and rapidity as Assam. The great earthquake of 1950 brought about such a radical change in topography of the State that all its rivers including the mighty Brahamputra have become shallow. Not only have they collected heavy siltage, they have also become more and more unpredictable and errant. The State has since then been suffering an average annual loss of about Rs 8 crore.

Cargo vessel ZANGI ready to sail out of Pandu river-port for Calcutta, marking the resumption of river link with Assam which was snapped over seven years ago.



During the last summer, Assam was hit twice by floods involving a loss of over 100 human lives. In the course of three summer months over 32 lakh of people were affected, crops over an area of 9.34 lakh acres were completely damaged, nearly 37,000 houses were washed away and 2,000 heads of cattle were reported killed.

The State has so far been dependent entirely on foodgrains grown during the four months from June to September, the period when the vagaries of floods are at full play. As a result agriculture in Assam is still a gamble of the monsoons. This chronically uncertain situation, which has of late showed signs of further aggravation, set the State administration thinking in terms of bringing about a radical change in the cropping pattern itself. A massive drive has been initiated since October 2 last to bring home to the people the urgency of taking to autumn, winter and spring cultivation, and switching over the emphasis from *kharif* to *rabi* sowing, and thus reducing the dependence on summertime cultivation. Accordingly the State Government is taking up schemes for providing the cultivators with irrigation facilities The crash programme for *rabi* cultivation, which has already been inauguarated in all the districts of the State, has received enthusiastic response from the agriculturists all over the areas selected for the purpose.

FREE STUDENTSHIPS

Assam, with a total population of 13.44 lakh belonging to Scheduled Tribes in the plains districts as distinct from the hill tribes of Mikir and North Cachar Hills, has since the beginning of the First Five Year Plan spent Rs 2.55 crore exclusively on education among this section of its people. This expenditure was in addition to other General Schemes the benefit of which is also made equally available to the tribals from the plains.

At present about 50,000 Scheduled Tribe students in the plains of Assam are enjoying free studentships in the secondary level, and another 3,000 are receiving special scholarships. Ten years ago the number of these tribal students enjoying free studentships was only 10,600.

Aduthurai Evolves Hybrid Banana for Export

(From Our Madras Correspondent)

THE ICAR's Central Banana Research Station at Aduthurai in Tamil Nadu has evolved some sophisticated and hybrid varieties of the fruit which has increased its export prospects to countries like Japan and USSR. A cooking vareity of banana, known as *chakkia*, ideally suited for kitchen gardens, is among the many high-yielding varieties developed at the Centre. With compact and heavy bunches weighting 30 kgs and with 150 medium-sized fruits in ten hands this variety is claimed to be much superior to others of this type.

The Aduthurai Station, a pioneer institution of its kind in the country, devoted to the planned and systematic banana research, was established in 1949 with the aid of the Indian Council of Agricultural Research. It had been functioning as a Central institution with financial assistance on a 50 : 50 basis from the Centre and the State. Since 1963, it has been taken over by the State Government, which now meets its annual budget of Rs 80,000 to Rs 85,000.

The station has among its major achievements the codification of nomenclature of a wide variety of names by which the banana fruit is known in different parts of the country in different languages, Even in the same region the same variety is known by several names. There has been considerable confusion over it among the growers and others concerned. To codify the different varieties under broadly identifiable groups the station assembled a collection of 230 banana varieties from various parts of the country and abroad (particularly from Jamaica, Hawaii, Australia and Africa) and detailed descriptions of all those clones were recorded based on the morphological and economic characteristics. The nomenclature standardised by the station reduces the varieties to 80 clones under eight groups.

The Aduthurai Station has also isolated high yielding varieties and popularised these among banana growers. Among the hybrids evolved, one bred from *neyvannan* a popular variety of the southern districts of the State, and a wild male parent called *sanai* has been found promising, and superior to the mother in yield and quality. With this hybrid a new superior variety with similar genomic constitution has been obtained from Kingston (Jamaica), called *klue teparod.*

Banana improvement among mutants is an important branch of the station's activities. Among the many mutants and promising selections, isolated and tested, the semi-tall mutant of Dwarf Cavendish, known as *robusta* has established itself as a superior commercial clone. This is being popularised as an export vareity. The State Government has taken steps to popularise this in the district under the Banana Package Scheme with a view both to stabilising internal market and taking up exports. The Banana and Fruit Development Corporation has been set up with this twin objective. Export prospects to Japan and the USSR are under active study.

Studies on fundamental aspects of banana, such as fruit development studies, root study and studies on leaves and sucker production are part of the station's regular work. A scheme has been sponsored by the Centre to demonstrate on the growers' farms the findings of some of its studies. For instance, the station has shown that by adopting improved cultural and manurial practices the yield per acre can be stepped up from five-six tonnes to 15-20 tonnes of fruits per season. It has been demonstrated in the wetlands of Thiruvaiyaru where the production of leaves constitutes about 55 per cent of the income, 35 per cent from fruits and ten per cent from suckers, that by a balanced application of NPK fertiliser per plant per year, the yield can be increased by 7,000 kgs annually. Also an additional yield of leaves and fruits could be had accounting for an extra net return of Rs 1,600 per hectare over that obtainable under conventional methods.

BOOKS

Educational Management

Modern Management Techniques In Educational Administration : *Report of Regional Seminar organised by the Asian Institute of Educational Planning and Administration, New Delhi; Pages 542.*

AS the title indicates, the publication is a report of a Seminar organised by the Asian Institute of Educational Planning and Administration (AIEPA) on problems arising out of phenomenal expansion of education. The seminar was attended by participants from nine Asian countries who included, besides a number of observers from the world bodies and national institutions, professors of management, educational administrators, educationists and government representatives of relevant departments. The main objective of the seminar was to acquaint the educational adminstrators and planners with the general management techniques and their application in education, and to earmark the areas where such techniques could be used in the conditions obtaining in developing countries.

Some of the paper headings give an idea of the vast areas covered : Key Variables in Organisation Study; Impact of Behavioural Sciences on Administration; A Survey of Modern Management Techniques Applicable to Educational Administration; Use of Computer for Educational Administration; Use of Computers in Educational Operation Research on Educational Adminitration; O & M General Administration and Educational Administration; Application of Management Techiques in Educational Institutions, etc.

The crux of the educational problems has been described by Prof. M.V. Mathur, Director, AIEPA, thus: "While education has become a vast undertaking, administrative bodies and methods remain as they were at the beginning of the century when the volume of education was only a fraction of what it is today. The existing administration (educational), handed down from a political past, is essentially concerned with controlling. Its purpose is to make certain that everything is done in accordance with procedure. It is generally slow and hesitant, dilatory and time-consuming. If it is to be able to implement successfully the plans of educational development, the traditional administration must be radically changed." Dr K.S. Basu in his paper on application of personnel management techniques in educational institutions stresses the need for proper assessment at every stage of appointing the educational personnel, whereas Prof. M.J.K. Thakaraj proposes that planning, programming and budgeting should be done in such a slick manner that maximum results are achieved in minimum time and with reasonable budget.

The appendix relating to the present position in the Asian region as regards application of modern management techniques to educational administration, is indeed most enlightening.

The 34 recommendations of the seminar (page 64-67) are indeed worth a close look as they sum up the entire educational management scene. It will but be fitting if proper use of these points is made in tackling the educational issues which are occurring day in and day out.

With imaginative editing and proper weeding out of irrelevant material like the daily programme of the seminar and summaries of the papers, the book would have got a better look. It is surely a useful publication.

—**M.R. Dua**

Foreign Profiles

Trading With The World Profiles of countries: *Published by the Indian Institute of Foreign Trade, New Delhi; Pages 722; Price Rs 40.*

THE publication was first brought out by the Indian Institute of Foreign Trade in 1968. The present edition published in 1972 is considerably more valuable, with an enlarged and informative coverage incorporating profiles of 109 countries. It is a storehouse of authentic information material on the countries giving concise yet comprehensive and significant details about their physical features, geographical and demographic characteristics, natural resources, transport and communications, energy generation, banking, trade, exchange systems, import and export policies, investment opportunities, and the economy in general. The countries have been arranged in alphabetical order, except for Bangaladesh and Pakistan which come at the end, for the obvious reason of Bangladesh having emerged as an independent country only towards the end of 1971.

This large volume which is moderately priced for the information it contains and the general get-up and presentation of facts and their production values, eminently serves the major objective of presenting in one volume quick and properly arranged reference material on the broad features of the economy and trade of the countries covered. An outline map of each country and the more important data of trade tidily tabulated are other noteworthy aspects. Altogether, the information is presented in such a manner as indicates the broad outline, the possibilities and potentialities of trade with the countries featured in the publication.

At the end of the publication is appended another interesting and informative section giving the more important details of information in capsule form on important international economic organisations such as the GATT, International Finance Corporation, UNCTAD, COMECON, Colombo Plan, EEC, the Asian and African Development Bank, among others.

The publication is yet another useful addition to the Intitute's purposeful work of this nature.

—**L.N.R.**

Snippets...

Production in the Hindustan Shipyard at Visakhapatnam is to be stepped up under an Expansion Programme involving about Rs 7.65 crore. The Shipyard has now 13 ships in its orderbook. It has so far kept the target of building six ships a year. The Government have also accepted in principle the provision of a Building Dock and a wet basin at the shipyard.

*

A 4,000 line cross bar Automatic Exchange, designed and manufactured by the Indian Telephone Industries, Bangalore, has been commissioned in Allahabad. It is the first of its type in Uttar Pradesh.

*

The Centre has finalised the programme under which Jowar is to be cultivated in about 11 lakh hectares in the rabi season. Mysore will contribute seven lakh hectares under this programme designed to augment the production of coarse grains in the country which has been affected in the kharif.

*

Work on India's biggest dry dock has commenced in Visakhapatnam. The dry dock, when completed, will provide essential repair facilities to ships on the East Coast. It is designed to take ships up to a tonnage of 80,000. The dock is estimated to cost over Rs 10 crore and its completion will take four years.

*

Under two agreements signed recently, India will get economic and technical assistance amounting to Rs 38.50 crore from Sweden. The loan for import of capital goods from Sweden is interest-free and carries only a service charge. Six crore rupees will be made available during the current year to import some commodities, machinery and equipment. Sweden will also support a number of schemes in this country, including the family planning programme.

*

The project of the Trade Development Authority for setting up export-production of electronics near Santa Cruz (Bombay) has been approved by the Union Government. A 100 per cent export-oriented project, the Santa Cruz Project, would be a fore-runner of three or four more projects, which will be set up elsewhere in the country.

*

The first exploratory well spudded on July 19, 1972 on the promising Baramura structure in Tripura for discovery of oil or gas had been drilled to a depth of 1500-metres up to the end of September, 1972. The well is projected to reach a depth of 4,500 metres.

*

The Hindustan Steel Limited has signed a contract with South Korea to supply 16,000 tonnes of steel; shipment of which will start from May 1973. The contract was signed in the face of stiff competition from other foreign companies including Japanese and Canadian.

*

The Rs 30-lakh Surauli Buzurg Pumped Canal Scheme in Uttar Pradesh has been approved by the Planning Commission for being taken up under the 'Drought Prone Area Programme'. The scheme is expected to irrigate about 2,590 hectares in drought affected areas in Hamirpur Tehsil of Hamirpur district.

*

The Planning Commission has agreed to waive, as a special case, the condition of matching contribution attached to the grant of central assistance for special employment programme to be undertaken by the Madhya Pradesh Government. This will enable the State Government to take up rural electrification schemes, estimated to cost Rs 2.75 crore during 1972-73, to provide lift irrigation facilities in the backward districts of the State and widespread employment. This decision would enable the State Government to utilise the sum of Rs 2.04 crore, mobilised as matching contribution for the special employment programme, for the programme of rural electrification (lift irrigation). The Central assistance for the Special Employment Programmes will, however, be limited to Rs 2.04 crore.

*

Under an Indo-Soviet Trade Protocol signed for 1973 a trade turnover of Rs 410 crore is envisaged between the two countries during 1973. The Protocol also envisages a 15 per cent step up in India's export to Soviet Union in 1973 over the anticipated level in 1972. The principal items of import into India from the USSR during 1973 will be plant and machinery, petroleum products and industrial raw materials besides components, spares and raw materials for Soviet-assisted projects.

*

The Planning Commission has approved the schemes for the extension of Korba and Amarkantak thermal power station in Madhya Pradesh for implementation during the Fourth Five-Year Plan. Both the extension schemes involve installation of one thermal generation set of 120 MW capacity together with the steam generator, accessories and other appurtenant facilities and are expected to be commissioned in 1976-77. Whereas the Korba Extension Scheme is estimated to cost Rs 18.36 crore, the Amarkantak Extension Scheme will cost Rs 18.61 crore.

*

An agreement for a new Canadian soft-terms development loan of Rs 1.33 crore has been signed. This loan will provide for the purchase of fertiliser bulk handling equipment for the port of Haldia. A similar loan for the port of Kandla was given in August last year. In addition to the development loan for the Haldia port, the Canadian International Development Agency has engaged the services of Howe International Ltd. as consultants for the Calcutta Port Commission in the layout, design, procurement, and installation of the various equipments to be purchased in Canada.

*

The Government of India has set up a General Insurance Corporation of India to superintend, control and carry on general insurance business in the country. A small board of three persons has been constituted and will soon be expanded.

*

The Government of India have announced the issue of the following two Loans aggregating Rs 100 crore: (i) 5 per cent Loan 1984 to be issued at Rs 99.50 per cent and repayable at par on June 1, 1984; (ii) 5 1/4 per cent Loan 1988 to be issued at Rs 99.50 per cent and repayable at par on June 1,1988.

*

Under another agreement signed recently Canada has given a grant of Rs 21 lakh for a feasibility study of the Hindustan Copper Limited's Rakha Project in Bihar. The grant will be used to engage the services of a Canadian firm of Consulting Engineers (Watts, Griffis & McQuat) to recommend development of the mine and production operations at the Rakha Project.

*

For the first time, the National Building Construction Corporation has recorded a net profit of Rs 13 lakh and a turnover of Rs 5.18 crore during 1971-72.

*

Schemes costing Rs 3.52 crore, under the Emergency Food Production Programmes, have been sanctioned by the Kerala Government. The schemes include Rs one crore for minor irrigation, Rs 1.25 crore for short term loans to cultivators, Rs 50 lakh for free distribution of pumpsets to panchayats and Rs 27.68 lakh for plant protection measures.

*

A mini-computer capable of conducting and evaluating an objective type examination, with as many as 50 questions, has been successfully designed and assembled in the mechanical engineering department of Punjab Agricultural University's College of Agricultural Engineering. With some modification, the computer can be employed in libraries for locating books. In industrial units, it can be used for quality control. Portable and easy to handle, its cost is only Rs 2,000.

*

Exports of wool and woollen goods in the seven month period, April-October 1972 at Rs 28.11 crore have gone up by Rs 7.68 crore as compared with the corresponding period of 1971.

*

The Kerala Government has drawn up schemes costing Rs 57 crore for increasing food production in the state with the object of achieving self-sufficiency by 1975-76.

New Trends in Sugarcane Cultivation

S. S. SHAH

SUDDEN transitions from an era of plenty and surplus to that of tight supply position on the sugar front are well-known. Sugarcane cultivation and industry have been subjected to wide fluctuations from season to season so that we have lived in fear of cyclic gluts and scarcities.

Pioneering Work

India was importing sugar from foreign countries till the late 'twenties in a big way. Thanks to the pioneering work done by Shri T.S. Venkataraman at the Sugarcane Breeding Institute located at Coimbatore, the position completely changed. It is well-known that sugar industry received the long felt support from the improved canes that came from this institution. From that time the sugar industry never looked back. Within a period of 50 years this country which was importing large amounts of sugar has become one of the exporting countries.

Not that sugar consumption has not been increasing in the country; consumption of sugar has increased rapidly from 26 lakh tonnes in 1968-69 to 32.6 lakh tonnes in 1969-70 and further to 40.2 lakh tonnes in 1970-71. This was a period of continued increases in production which resulted in sugar glut. From 1969-70 the position has changed and the sugar output is showing a downward trend. The estimated demand for sugar at the end of the Fourth Plan period is 52 lakh tonnes while that at the end of the Fifth Plan may touch 60 tonnes. A concerted effort is hence needed to translate the research findings that are now available in the field through a dynamic development programme.

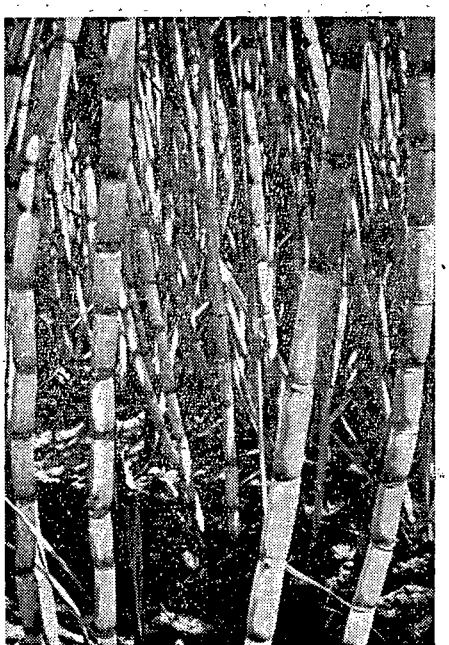
Cane Research

The contribution that research has made to the improvement of the sugarcane industry has been significant. Two major institutions one at Coimbatore and another at Lucknow have taken up the responsibility of meeting the research needs of this crop. The major improvement was on the varietal front. Yield per acre has been on the increase from 1920s till now. It rose from an average of 10 tonnes per acre to 32 tonnes per acre in the late 'sixties under sub-tropical conditions. Similar improvement was seen in tropical areas also, the average yields going up to almost 40 tonnes per acre from the original 20 tonnes per acre.

FOCUS

In addition, the increased average yields of sucrose in juice has also registered an increase under both the conditions, the increases varying from about 50 to 70 per cent. This significant achievement is mainly due to the efforts of the Sugarcane Breeding Institute, the premier institution which took up the evolution of better varieties of sugarcane in this country. This institution which has helped the sugar industry to establish itself in this country celebrated its Diamond Jubilee last month.

A close-up of an early maturing variety of sugarcane suitable for growing on commercial scale.



Varietal Composition

Almost all the States in the country grow the varieties released from this institution. Some of the improved canes grown are Co.312, Co.453, Co.419, Co.740, Co.527, Co.881 and Co.658. These varieties in addition to their increased yield potential have built-in potential for resistance to adverse conditions and to diseases or pests. Varieties like Co.1148, Co. 1007, Co. 62403, Co.62101 and Co. 6811 are resistant to red-rot. Co 527 and 449 possess resistance to the wilt disease of cane. Varieties like Co 449, Co. 421, Co. 617 and Co.775 have shown considerable resistance to the inter-node and top borers which affect sugarcane crop. Co. 1148, Co.997, Co.312 can stand drought while Co.1148 and Co.312 are resistant to frost also. The above varietal composition shows the magnitude of the problems taken up by this institute during its 50 years of existence.

In addition, it has some of the Co. varieties like 6804, 6806, 6807 which have registered almost about 40 per cent increase in sucrose in juice after 10 months of planting. Those early maturing, high sucrose varieties are likely to extend the crushing season of the sugar industry and thereby decrease the cost of production. Though the varietal position has been very satisfactory, there are other serious problems which afflict the sugar industry. One of them is the deterioration seen in some of the outstanding varieties which are cropped over large areas. The practice of monoculture which is so widespread in sugarcane is posing a peculiar problem. The crushing season is limited and because of the existing

Dr Shah is Director, Sugarcane Breeding Institute, Coimbatore.

policy of mills to pay on weight basis there is no initiative to grow high sucrose varieties. The problem of pests and diseases also needs to be tackled.

Crushing & Cropping Pattern

The use of early maturing varieties and ratoons for crushing is a well-known practice for achieving higher recovery of sugar. But in practical terms this is not done due to the existing cane purchase policy. A number of high sucrose varieties for early crushing are available. But unfortunately they are shy yielders when compared to the late maturing varieties. An ideal system would be to start crushing ratoons which mature earlier than the earliest canes and then take up the mid late and late varieties in sequence to increased recovery.

The range of varieties with early, medium and late maturing habits now available need to be taken up for cultivation in a sequence to keep the sugar recovery at a high level.

Fertilisers are the key to bring out the full potential of the high yielding varieties. It has been noted that late application and excessive doses particularly affect the juice increase adversely. The correct methods and doses have been formulated. Proper and full utilisation of the cultivated area is very important, specially for small holders.

Inter-cropping is one way of achieving this. This area of research has been extensively explored. The wheat-sugarcane or paddy-sugarcane inter-cropping has been found to be possible. The former gave nearly Rs 400 extra when wheat was sown in between sugarcane in two to four rows. In the Northern belt the use of wheat in rotation with early harvested sugarcane looks quite promising.

Weed Control

Presence of weeds in sugarcane fields has always been a difficult problem. The use of chemical weed control has become very important in view of the considerable increse in labour wages. Research on this problem shows that some chemicals like simazene at the rate of 3.7 kg in 700 to 900 litres of water when applied two to three times after planting sugarcane is safe and efficient.

Ratooning of sugarcane is a general practice and has become widespread ever since the introduction of the Coimbatore canes and now as much as 30 to 40 per cent of crop area is under ratoons. At present ratoon crops are not provided with proper culture, manurial and plant protection practices. This has resulted in low yields from ratoons and is very often affected by a number of pests and diseases which serve as a source of infection. Hence efforts are being made to work out a package of practices both for the main and ratoon crops in the different regions so that the full yield potential of new canes could be realised.

Research investigations carried out on degeneration or reduction in yields met with improved varieties have established beyond doubt that this is brought about by the gradual accumulation in the seed canes of the virus diseases called ratoon-stunt and grassy shoot. The virus diseases are passed through the seed pieces. A programme of heat therapy coupled with the sound seed selection programme for one or two generations can thwart the seed infection. Experiments conducted show that the varieties that have degenerated due to the virus diseases can be revived by heating seed canes in specially designed units and the additional increased yield can be up to 30 to 40 per cent.

Seed Programme

The average farmer, however, has not been able to derive the benefits largely because the whole process of treatment, selection and certification is extremely technical. A need was therefore felt for evolving a programme of production of certified and disease-free seeds to help the farmers. Keeping this in view, the ICAR has formulated a Coordinated Foundation Seed Programme on an all-India basis. This programme when fully implemented will lead to the availability of disease-free material and significant increase in production and the farmer will have so much less worry with the disease problem.

With the already available high sucrose varieties and proper agro and plant protection techniques evolved at the various centres of sugarcane research both in the States and the All India Coordinated Sugarcane Improvement Project it can be anticipated that the yield in sugarcane as well as yield of sucrose per acre may go up in the coming years. The package of practices implemented with the disease-free seed and certification programme would be the king-pin for such an increase in sugar production in the country.

One can reasonably feel optimistic about the outcome of the research efforts of the Sugarcane Breeding Institute, Coimbatore, which as an eminent institution has played no mean part in sugarcane development even in advanced countries like Australia, USA, and South Africa. The Coimbatore canes evolved during the period of Shri T.S. Venkataraman were used as basic genetic material for building important varieties of canes that are now grown on a large scale in those countries.

Aerial spraying of insecticides at a sugarcane farm in Merrut.