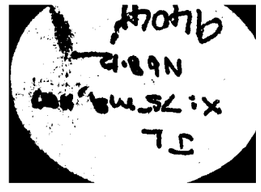

TWELFTH YEAR 7 APRIL 14, 1968

YOJANA

HARVEST OF HOPE

25 PAISE

YOJANA

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LEST WE FORGET

Some people say that we are always talking about agriculture to the neglect of industry. I attach the greatest importance to the development of industry but I doubt whether any real industrial development can take place in India till we have a firm basis for our agriculture.

Jawaharlal Nehru

Cover designed by Jivan Adalja
Photograph: T.S. Nagarajan

ACKNOWLEDGEMENT

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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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BETTER TIMES

A bumper harvest, estimated at around 95 million tonnes, has transformed the economic scene ; and this is naturally reflected in the Central Budget. Coming after two successive years of drought and an appreciable fall in food production, the all-time record harvest has done a great deal to wipe out the tragic memories of the immediate past. Undoubtedly, this happy state of affairs is due largely to an adequate and plentiful monsoon, which is vitally important for a country where three-fourths of agriculture depends on the rains and only a fifth of the crop is covered by protected irrigation. But apart from the proverbial bounty of nature, the current breakthrough in agriculture is due to the conscious efforts of our farmers in the field and scientists in the laboratories.

India is passing through an agricultural revolution. The centuries-old methods of cultivation are slowly yielding place to new technology. It is obvious to even the most casual observer that the Indian farmer, though cautious about new innovations, is showing admirable receptivity to the advances of science and technology. It is, however, an unfortunate paradox that the comparatively slow progress of agriculture is not due so much to lack of demand for essential inputs from farmers, but their short supply. Steps are being taken to develop additional capacity in the country to adequately meet their needs.

The experience of the last two years when poor rainfall seriously affected agricultural production in certain areas has heavily underlined the need to increase irrigation facilities. In this context, the development of minor irrigation projects and provision of tubewells have acquired greater urgency. It is heartening to note that this is receiving adequate attention, and a great deal has been done to make up for the neglect in the past in this vital sphere.

This year's harvest – a record though it is – can only be a step towards the ultimate goal of self-sufficiency. To attach any other significance will be a grievous mistake. It will be equally dangerous to presume, on the basis of the present good agricultural year, that conditions have been stabilised for a continuous and uninterrupted rise in production from year to year. The see-sawing in Indian agriculture which has been a pattern in the last several centuries, will continue until the country is able to offset the obvious consequences of a "monsoon-bound" agriculture.

Shift in Agriculture

India today holds the world record for the speed with which significant research findings have been applied in the field. Within two years 20 lakh acres have been brought under newly evolved varieties of wheat.

Indian agriculture is now poised for a transition from the 'natural' to an 'exploitive' stage in which cultivated plants need not depend for their survival and productivity mainly on natural factors. The land is a capital resource which should be so exploited as to bring about a continuous appreciation in its production potential.

FROM 'NATURAL' TO 'EXPLOITIVE' STAGE

M. S. SWAMINATHAN

THE favourable features of India's agricultural situation are : (a) the availability of abundant sunlight and the prevalence of favourable temperature for crop growth throughout the year in most areas, thereby making multiple cropping feasible, (b) the small size of an average farm holding and the large number of farm workers available, which render labour-intensive farming possible, and (c) the availability of large tapped and untapped water resources. Recent scientific research has aimed at exploiting these advantages through the genetic destruction of the yield barriers in the major cereals and millets and the development of the agronomic practices essential to enable the plant to reveal its yield potential. As a result, during 1964-67, the dwarf wheats Lerma Rojo and Sonora 64 introduced from Mexico, the high yielding wheat strains Kalyan Sona, Safed Lerma, Sonalike, Chhoti Lerma and Sharbati Sonora selected or developed locally, the rice strains Taichung Native 1, IR-8, Tainan 3, Taichung 65 and ADT-27, the *jowar* hybrids CSH.1 the *bajra* & HCS.2 hybrids H.B-I and H.B-2 and the maize composites Jawahar, Kissan, Sona, Ambar, Vikram and Vijay as well as several maize hybrids have been introduced into cultivation by our agricultural scientists.

Multiple cropping techniques employing a relay sequence were developed for enabling a farmer with a holding of about 2 hectares to grow 4 crops a year and earn a net annual income of over Rs. 10000/- per hectare. Special agronomic methods have been devised, such as sprinkling farm-yard manure in fields sown with wheat in January, which help in raising the soil temperature and increasing the speed of germination and growth of seedlings. Further, sowing in the north-south direction helps in cap turing as much sunlight as possible by the green leaves and thereby foster better and quicker growth. It has also been found that an important cause of lodging even in dwarf wheat varieties is the poor anchorage of plants in the soil, due to the poor soil structure arising from numerous ploughings. In light and alluvial soils, the number of ploughings should be reduced in irrigated areas and this can be safely done if weeds are controlled through proper weedicides. Simple practices of this kind make a big difference in the return a farmer gets from his investment on inputs.

When those of us who have been privileged to work in the field of agricultural research embarked on a relentless pursuit of higher yields in crop plants about six years ago, we had hoped that the high yielding varieties of wheat and other crops would help not only in increasing the yield of these crops, but would also act as catalysts in bringing about a total transformation in the outlook and agronomic methodology of the rural community. The new varieties and the new agronomy currently available both for irrigated and dry areas, have provided Extension workers with excellent opportunities for winning the confidence of the farmers quickly and for providing them with the motivation needed for change. This is in fact what has happened in several parts of our country during the last two years. Farmers with small holdings feel that a new life of hope and happiness is now open to them. What is equally significant is that the recent research findings have stimulated educated urban classes to return to the villages and take to farming. Agriculture has acquired a new status, and the sociological and psychological base necessary for building a new agriculture in our country has been truly laid.

YIELD INCREASE IN UNIRRIGATED AREAS

The rapid spread of high yielding varieties in irrigated areas has widened the gap in the income potential of irrigated and unirrigated lands. Research aiming at increasing the yield and income of farmers in unirrigated and low rainfall areas has indicated that the following practices would help in improving yields and estabilising production in such areas:

(a) Deep ploughing helps to conserve moisture and enables taking two crops in a year.

(b) Spraying with urea helps to increase yield by over 25 per cent in wheat. The scientists of the Indian Agricultural Research Institute have found that over 30 per cent concentration of urea can be safely applied to wheat by breaking down the particle size of urea in a low volume sprayer. This has rendered serial spraying of urea possible in moisture-deficit areas and this can be provided as a service by the Government.

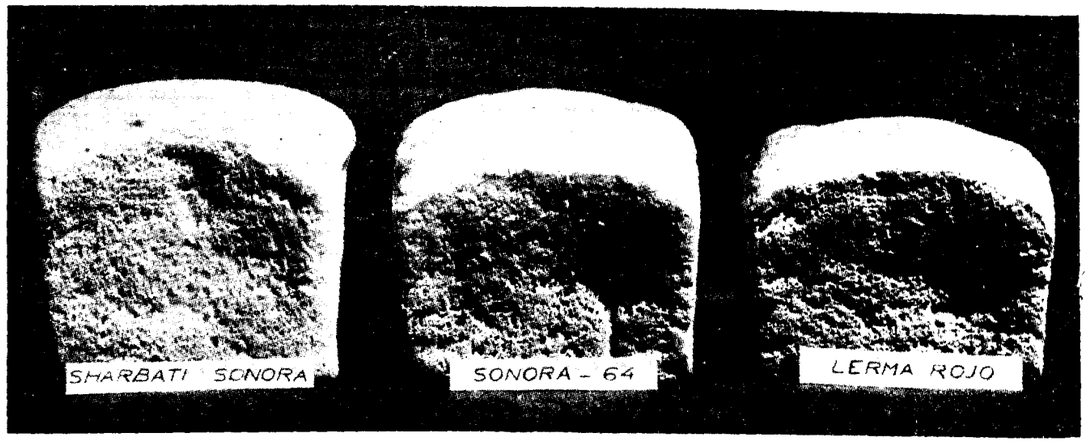
(c) Under conditions of low moisture, tillering is very much reduced in wheat and barely. Hence, the yield has to come from the main tiller. The I.A.R.I. physiologists have shown that by increasing the number of grains per ear in the main stem, it is possible to increase the yield of wheat in dry areas. Hence, a special variety of wheat with branched ears like Jowar is under development for dry areas. Also, hybrids between rye and wheat are under development which may also prove to be a boon to farmers in dry areas.

With the earlier tall varieties of wheat, about 30 to 40 quintals per hectare was the upper limit of the yield that could be easily obtained in irrigated areas. With the introduction of the dwarf varieties from Mexico by the I.A.R.I. in 1963, this upper limit was raised to 70 quintals per hectare. During 1967, Sonalika, Safed Lerma and Chhoti Lerma, selections made at the I.A.R.I. from breeding material received from Mexico as well as Kalyan Sona, a selection made jointly at I.A.R.I.; Ludhiana and Pant Nagar were released. Another variety approved for general cultivation in 1967 was Sharbati Sonora, a strain developed by treating Sonora 64 with gamma radiation. Sharbati Sonora has yielded 34 quintals per hectare at Coimbatore in Madras State in 85 days. In North India, it yields 60 to 65 quintals per hectare in 120 to 130 days. In addition to giving good yields, Sharbati Sonora has the highest protein content (16.5 per cent) among the varieties so far developed and released in India. Its protein has a high lysine (an essential amino acid) content. The release of such high lysine cereals offers hope for fighting successfully the danger of intellectual dwarfism facing our country as result of the widespread protein hunger, particularly in pre-school children. For obtaining still higher yields, the following attributes must be incorporated in a wheat variety :

(a) A shorter straw, the total height not exceeding about 50 cms so that there is no lodging even when rains and thunderstorms come in March and more nutrition is fed to the plant through the soil.

(b) A long ear with over 100 grains per ear and a large number

A triple dwarf variety of wheat is standing erect in the field, while another variety—Sharbati—has lodged (on the left side) after the heavy rains last month.



Specimens of bread made from different varieties of wheat.

of synchronously developing tillers with stiff and erect leaves capable of an efficient interception of sunlight.

(c) A high degree of built-in resistance to diseases, particularly ruts.

In addition, the variety should have an excellent grain quality both from the nutritional and chapatee-making standpoints.

The new varieties now in the assembly-line at I.A.R.I. belong to the following categories :

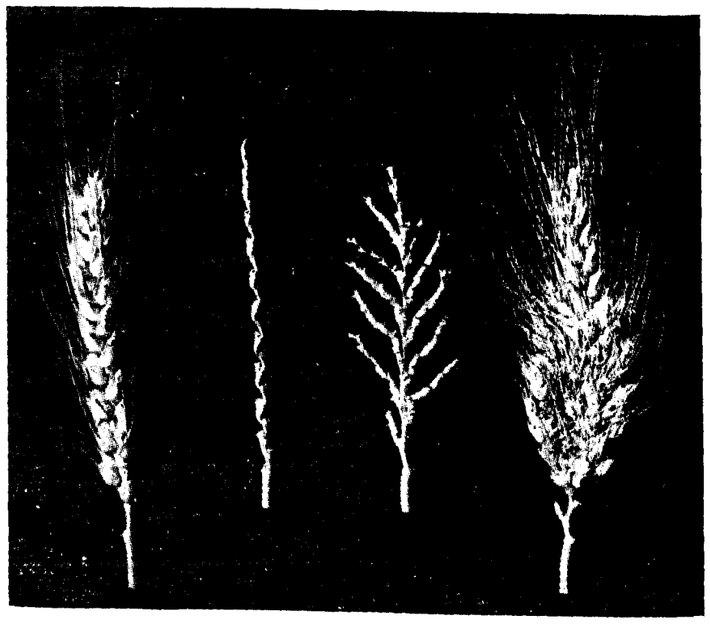
(a) *Triple Dwarfs :* These have 3 genes for dwarfing and will not lodge even under very adverse conditions. Triple dwarfs combining high yield, excellent grain quality and a high degree of resistance to rusts are now in the final stages of assessment and multiplication.

(b) *Hybrids between Rye and Wheat :* These have very long ears and may yield well both in irrigated and dry areas In addition, rye-wheat (scientifically knows as "triticale") has nearly 20 per cent protein and a high lysine content.

(c) *Hybrid wheat :* As in maize, *jowar*, and *bajra*, research aiming to exploit the phenomenon of hybrid vigour is in progress in wheat. Such research was made possible by the discovery of male sterility in some wheat strains by Japanese workers.

(d) *Branched wheat :* A mutation for branching was induced in the variety N.P. 797 by gamma ray treatment. This has made the development of branched wheat

Below : **I.A.R.I. has been experimenting on a wheat variety whose ears will branch off, like those of Jowar, to yield more grain.**



varieties possible. Such varieties will have 3 to 4 times as many grains per ear as the varieties now grown and will greatly enhance the yield of wheat both in irrigated and dry areas. Branching is not known to occur in nature in bread wheats, but occurs in one species of the wheat family identified in Egyptian mummies *(Triticum turgidum* var. *mirabile)*.

Thus, in the immediate future, the prospects are bright for developing wheats which can yield about 100 quintals per hectare.

Dwarf and high-yielding varieties have been developed in *durum* (macaroni) wheat, which is cultivated extensively in Madhya Pradesh and Mysore. In barley, the first usable form of dwarfing gene (similar to the 'Norin' dwarf-

ing gene in wheat) was discovered at the I.A.R.I. in varieties treated with chemical mutagens and this has rendered the development of dwarf and non-lodging barley varieties possible.

IMPROVEMENT IN OTHER CEREALS AND MILLETS

Until recently, plant breeding led to yield increases only in an arithmetic progression. An exception was hybrid maize whose cultivation in the United States revealed that when breeding interacts with agronomy, yields can increase in a geometric sequence. As a result of exploiting this concept of breeding plants which will respond to efficient soil and water management practices, we are now poised for a major yield explosion not only in wheat but also in rice, *jowar*, *bajra* and maize. Many varieties posessing the type of morphological architecture and developmental rhythm favourable for the efficient utilisation of sunlight, water and fertiliser are now available in these crops. Since adequate quantities of seeds of high yielding varieties will be available hereafter, it should be feasible to produce soon about 20 million tonnes of wheat and 50 million tonnes of rice, provided the requisite quantities of fertilisers are available, and the interest in these crops among farmers is sustained.

FUTURE OF WHEAT AND RICE PRODUCTION

The future of wheat and rice production would, however, depend not merely on the availability of inputs but also on how remunerative the cultivation of these crops would be. The experience of all developed nations including the USSR indicates that the edifice of scientific agriculture can be built only on the foundation of remunerative pricing and efficient marketing. This is particularly true in our country since a majority of the farmers have small holdings and poor means. Trends in sugar production in recent years indicate the impact of income on the decision-making process of our farmers and, consequently, on the area and attention paid to different crops. Violent fluctuations in price levels would create confusion in the farmers' minds and would cause undulations in the relative availability of different products from year to year. Now that the scientific base for a rapid advance in production has been firmly laid, urgent attention is needed to the question of stabilising the era of remunerative cultivation of food crops which has just begun.

This has to be done both through scientific and extension work aiming to increase the efficiency of farming and through administrative action in the field of marketing. I feel that the time is ripe for the formation of a Rice Board and a Wheat Board which are charged with the responsibility of drawing up indicative plans for the production of these crops year to year, so as to ensure to farmers the price levels regarded as desirable by the Government and the Prices Commission. Such Boards could get their plans for procurement and marketing implemented through the Food Corporation of India. The Wheat Board of Canada took many years to evolve to its present state of utility and hence the constitution of the Indian Wheat and Rice Boards need not in any way be regarded as being meant for immediate marketing, particularly export, of these grains. These Boards should only be conceived as instruments of achieving stability in production and income through helping to regulate production to local needs and possible export. Since exports can be more readily accomplished only by paying attention to quality, the Boards can study the quality requirements of grains in the importing countries. In the case of rice, India is in a unique position as regards export possibilities since being a centre of origin of rice we can grow some of the finest varieties of rice in the world and at the same time *japonica* varieties having the sticky grains preferred in countries like Japan. The development of a dwarf Basmati strain of rice at the I.A.R.I. has opened up great possibilities in increasing the production of Basmati rice.

The formation of a Wheat Board could also help in introducing greater sophistication in matching varieties to purpose. We have varieties which are specifically suited for biscuit making, bread making, *chapatee* preparation and the manufacture of macaroni and allied products. For example, Lerma Rojo gives better biscuits than any other variety, while Sharbati Sonora is excellent both for bread and *chapatee*-making. Since so far we have been depending on imports for our wheat needs, an awareness of the importance of a specific variety for a specific end-use has naturally not developed.

RESEARCH AND TRAINING

Another of our most urgent needs is the availability of an efficient information transfer system. The number of scientists and extension workers with knowledge worthy of being extended is only a few ; in contrast, the number of farmers to whom the knowledge has to be communicated is huge. Today, even progressive farmers do not realise that the efficiency of their farming is low, because of the high prices they get for seeds and grains. It is obvious that in the long run farmers should derive a good income by maximising the return from their investment on inputs and not through prices which cripple the consumer. In dwarf wheat, for example, the timing of the first irrigation can make as much as 8 quintals per hectare difference in yield given the same number of total irrigations and fertiliser dose. The depth of transplanting and water management make a similar difference in rice. Hence the sooner the qualitative aspects of input use are widely understood the better will it be both for increasing production with existing input resources as well as lowering the prices of grains.

We are now at the beginning of an era of what I have termed 'exploitive agriculture', shifting from a state of "natural agriculture" where the cultivated plants largely depend for their survival and productivity upon natural factors with minimal assistance from man. My reason for coining this term is to stress the fact that land is a capital resource which we have to exploit in such a manner that there is not only no depreciation but a continuous appreciation in its production potential.

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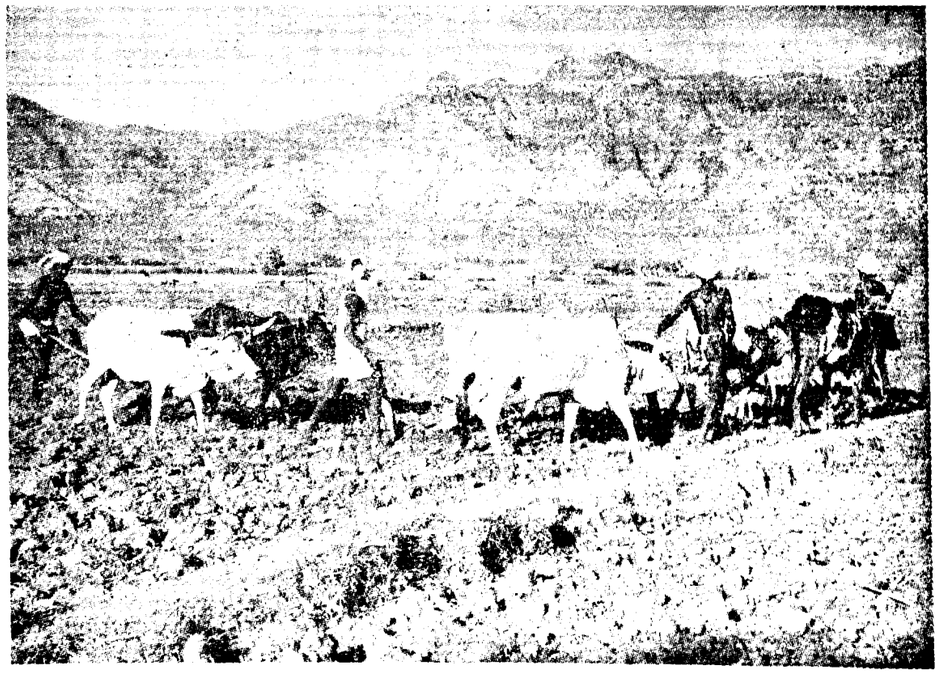

THE ABILITY TO GET THE BEST OUT OF THE LAND in terms of agricultural production is essential if the country is to meet the needs of a growing population. The traditional plough (above) is no longer able to meet the demands of the new agricultural strategy ; and it is gradually being replaced by mechanised tractors (below) which cut deeper into the soil and turn it better for increased food production.

FOOD PRODUCTION NOT THE ONLY ASPECT

FAO HELPS BUILD NEW TECHNOLOGY IN INDIA

DAVID MASON

IN India and nearly every developing country today, the growth rate of agriculture, in all its forms, largely determines the growth rate of the whole economy. In human terms, when farming prospers, the people prosper physically and economically.

That is why the United Nations Food and Agriculture Organization (FAO) is involved in all types of cultivation—from fish to forests and why so much of its work at world level is devoted to commodity problems and trade agreements. If a commodity agreement can be made to work, someone will eventually eat better and earn more.

That is why sheep and wool, forestry and farmer training are part and parcel of the United Nations effort to raise food production.

In terms of cash, FAO's aid is small, but large in terms of skills. In India now there are over 60 international staff from 18 countries advising government programmes worth over $ 200 million.

EVERY PART OF FAO's WORK IN INDIA CONTAINS A TRAINING ELEMENT. THERE ARE NOW NINE MAJOR SPECIAL FUND PROJECTS IN INDIA.

One of the rigs donated by Australia's Community Aid Abroad organisation for digging tubewells in the scarcity areas of Bihar

FAO and FAO-associated programmes are bringing technology to the dairy industry, horticulture to the villages, fishing installations to the coastal areas and advice on a hundred aspects of food and agriculture from cattle improvement to mushroom-growing.

PROJECTS REBORN

About now the oldest major FAO project in India—a highly successful project at the Central Sheep and Wool Research Institute, Jaipur, running for the last five years—is winding up. At the same time the project is being reborn in eight other States, just when a major breakthrough has been achieved in re-opening dwindling wool sales to the United States.

This programme with the Government of Rajasthan aims to revolutionise the sheep and wool industry of India. The earlier project was FAO's first in the country under the United Nations Development Programme Special Fund, initiated when FAO's annual expenditure was some $ 15 million. The Organisation is now spending nearly $ 100 million a year, and its programme of assistance in India is its largest national programme anywhere in the world.

FAO's primary contribution to this Rs 5 crore project is human beings—highly qualified experts from the world's leading industries,

mainly Australian. This fact illustrates two things: FAO's assistance at national level is mainly technical, and its work is not exclusively devoted to food production.

Every part of FAO's work in India contains a training element, and the technical assistance programme and all the major projects carry a number of fellowships to train Indian counterparts abroad.

The major, Special Fund, projects number nine at the moment. Two of them are mainly directed at training—one in fisheries and the other in forestry. To see how these long projects work, we can take a close look at one of them.

LOGGING TRAINING CENTRES

A special kind of training programme is necessary in a country like India whose timber resources also are currently underexploited, mainly because the country lacks skilled manpower, has poor transportation facilities and inadequate wood-processing plants.

Consequently, India has to import large quantities of forest products, which results in an unnecessary strain on her balance of payments. The undesirability of this situation has become clear to the Indian authorities.

They have found that the legacy, received on independence, of an efficient forest service in which emphasis was placed almost entirely on silviculture, consisting in re-afforestation work and sound conservation of the forests, could not help them to meet the needs of an expanding economy demanding greatly increased supplies of wood.

Little attention was paid to the efficiency and rationalisation of extraction and haulage methods. These aspects were left to the small local contractors who, lacking knowledge and skill themselves, as well as trained and experienced labour, capital and equipment, had to manage with primitive and comparatively inefficient methods.

The Third Five Year Plan started drawing special attention to the problem. It became increasingly evident that in this field,

IN INDIA NOW THERE ARE OVER 60 INTERNATIONAL STAFF FROM 18 COUNTRIES ADVISING GOVERNMENT PROGRAMMES WORTH OVER RS 150 CRORE.

An FAO expert demonstrating mechanical equipment for logging of timber. Four logging training centres are being set up by FAO under a project of the U.N. Special Fund.

improvement was needed, especially if the forests and forestry were to play their full part in the overall growth of the national economy.

It was stressed that silvicultural efforts to grow more timber are only one part of the operation to fulfil the timber requirement, which has to be supplemented by systematic measures to harvest and transport the timber in an economic way.

Several FAO missions were carried out in the country during the 1950s.

A training course on logging operations was held in 1958 in Kashmir under FAO auspices and with Swiss government support. This course instructed forestry personnel at the forest officer, forester and foreman levels in the handling of manual and mechanical felling, logging and extraction tools as well as in the theoretical and practical approaches to forest working techniques. The aim was to prepare the participants in the course to act as instructors themselves on return to their normal duties.

As a first and somewhat experiental step, the 1958 training course was a full success. However, the scale on which it was conducted was too small to have any significant effect on the efficiency of forestry personnel throughout the forest service, in view of the high numbers requiring training and the wide varieties of forest, topography and climate found within the country.

Considering these needs, the experience gained through this training course led quite logically to a request in 1962 for a Special Fund logging project. After careful deliberations, the Plan of Operation was signed on June 29, 1965 for a four-year project. The money was to be supplied from four sources. The Special Fund allocation was set at $ 555,500 and the Government of India counterpart countribution in kind at $ 570,852. Swedish and Finnish bilateral assistance contributions amount to $ 38,500 and $ 7,750

respectively. In addition Sweden is to provide $ 348,000 for the follow-up programme of training instructors at the four centres.

The fundamental purpose of the project is to train Indian forestry personnel in logging. Improvement and rationalisation in logging operations are important because in forestry operations these are undoubtedly the most expensive link in the chain. The improvement of logging includes several aspects: research (studies of methods, costs and equipment), training (of supervisors, instructors, workers), equipment supply (for basic logging, transporation, saw-milling in the forest).

This project deals mainly with the training of supervisors and instructors. The training of forest workers is expected to be covered under a "follow-up action programme." As to the research and equipment supply aspects, the project co-operates with the Logging Branch of the Forest Research Institute and with Indian and foreign manufacturers.

The project, besides its main courses for the training of instructors for forest workers, has also included logging training for forest officers and forest managers in its programme.

A pilot study was performed by the Institute of Work and Physiology of Stockholm in order to determine the types of basic logging tools most suitable for logging conditions in India. Various special studies were carried out on saws, axes and work techniques. The following findings illustrate the kind of knowledge that was sought. It was found that the work output with the bow saw was higher and the energy expenditure per cut was lower than with the crosscut saw in felling and cutting the smaller trees. The use of the one-man crosscut saw in felling showed that the physiological load was very high and the work output was low.

Tool maintenance had an important influence on the output of work and on the energy expended per work unit in cutting. In a test of five local saws, the work output with the same energy expenditure was only about 50 per cent of that obtained by using a well-maintained saw.

All of these studies have relevance for the training programme, which is of prime importance in this project. The instructors' training is being conducted with a view to ultimately enabling them to train the workers and it is this follow-up programme that had to be initiated on a sound basis. The training of some 200,000 to 300,000 forest workers, especially in basic logging, is an enormous and also a rather expensive activity. In this field various administrative, economic and psychological problems must be surmounted.

The present project is intended to contribute to a successful and orderly future expansion of the whole forest and wood-processing industries, including the pulp and paper industries. Proper training of staff is a first step.

A trainee learning wool grading at the wool research and improvement centre at Jaipur

STUDY OF FOREST RESOURCES

This is one example of how FAO is helping the Government establish an agricultural industry on a sound footing. Complementary to the logging project is another major scheme, a pre-investment study of India's forest resources which will show the way to a planned exploitation of the country's forests and the development of timber industries.

There are other projects and experts in other fields. There is the Freedom from Hunger Campaign, initiated by the former Director-General, Dr. B.R. Sen. Over Rs. 8-crores of projects have been developed in India, from drinking-water schemes in Maharashtra financed by the Finnish public to drilling rigs for Bihar donated by Australia.

There are programmes with the World Food Programme, the World Bank and FAO's Industry Co-operative Programme. All are aimed at speeding agricultural development and helping meet India's huge protein gap.

APPLIED NUTRITION PROGRAMME

Playing a leading part in the battle against malnutrition is the Government's Applied Nutrition Programme, now operating in every State of the Union and in most of the Territories. It is probably the largest programme that FAO is involved in anywhere in the world. The ANP can well serve as a prime example of the Organisation's work in advising.

Nutrition problems in India are of two kinds. One is qualitative;

the existing diet needs improvement since it is deficient in high quality protein. The other problem is quantitative: the demand for food of every type is increasing faster than the supply, because of the rapidly expanding population.

This situation leads to a high incidence of undernutrition in the population as a whole, and to a high incidence of protein malnutrition in certain segments of the population, particularly small children

Under the circumstances, there is a need to produce more food and also to increase the proportion of protein-rich foods. In order to increase the consumption of certain valuable foods, it is necessary to bring about a change in the dietary habits of people accustomed to a diet rich in cereals and starchy foods but poor in protective foods, such as eggs, fish, milk, fruit and vegetables.

Any comprehensive nutrition programme must therefore have three main components: production of protective foods, training of personnel in nutrition and nutrition education through feeding programmes.

A large pilot project of food and nutrition activities was begun in 1959 by the Government of Orissa. Its example was followed by three other States: Andhra Pradesh in 1960, Uttar Pradesh and Madras in 1962.

With equipment, supplies and stipends paid by UNICEF and experts provided by FAO, the Government carried on, in hundreds of villages, extensive programmes of applied nutrition which included the three components named above. The success of these programmes persuaded the Government of India to extend them gradually to the entire country.

The Master Plan of Operation for an Applied Nutrition Programme in India was signed in February 1963 by the Government of India and by the international agencies concerned, FAO, WHO and UNICEF.

The main financial contribution on the international side has come from UNICEF. This agency's expenditure for the programme, from 1959 to June 1967 was $6 4 million. A further commitment of $4,380,000 is requested from the UNICEF Board for the period 1967-69.

In addition to the normal programme, a Special Applied Nutrition Programme to assist those States most affected by the drought was approved in 1966 and started with an allocation of $1,213,000 contributed for this purpose to UNICEF by four organisations (Food for India Foundation, Netherlands; Raddabarnen, Sweden; MIGROS, Switzerland; and Freedom from Hunger Campaign, Australia).

The contribution of the Government of India was estimated at about 2.5 times the contribution of UNICEF, namely about $25 million during the Third Five Year Plan of the Government of India (1961-66). The total Government contribution during the Fourth Five Year Plan will be about $40 million.

FAO assisted the initial programmes by providing to the State Government of Orissa three experts for three years each, a Nutritionist, a Poultry Expert and a Horticulturist. Since the implementation of the Master Plan of Operation for all India, FAO has been assisting the Government with a team of experts covering the following fields: nutrition and home economics, horticulture, animal husbandry, poultry and fisheries.

Production of protective foods is encouraged through various channels. School, community and home gardens are established, poultry rearing and egg production are popularised through private individuals, village panchayats, women's and youth clubs; fish production is stimulated through the use of community ponds.

NUTRITION EDUCATION

To support these activities, production centres at the block and regional levels are assisted. They include the starting of vegetable seed farms, regional and district poultry centres and fish breeding farms. Food and fruit preservation units are set up to utilise the surplus produce for use in the off season. Rural dairying and marine fisheries projects are encouraged to increase the availability of milk and fish for their consumption in the project areas.

Nutrition education, associated with feeding programmes, is one of the most important aspects of the programme and is carried out at the village level by the workers properly trained in nutrition at the above-mentioned training centres.

These workers include particularly the Block Development Officers, the men and women Village-Level Workers, the local health personnel and school teachers. Proper attention is given to the utilisation of the most valuable foods, and to improved cooking practices.

Supplementary feeding programmes are carried out for mothers, pre-school and school children, utilising part of the produce from the agricultural activities.

The number of FAO experts at work on this programme is quite small compared with the needs of such a vast programme in such a big country. The team has however been able to accomplish a good advisory activity by working closely with national counterparts.

Applied nutrition programmes are long-term undertakings and it would be unrealistic to expect immediate results, particularly as it concerns the aspects of nutrition education and food habits While evaluation of the overall programme would still be premature, attempts at partial evaluation have been made. Government itself carried out an evaluation in 1964-65.

The present coverage of the Applied Nutrition Programme, in spite of its large budget, is still very limited and reaches only about a few per cent of the Indian population. It is the clear intention of the Government of India that this programme should become a regular feature of their development programme in all rural areas. Every effort will be made to extend the programme throughout the country and to stimulate the participation of the local communities in its overall planning and expansion, development and evaluation. To this effect, particular attention will be given to the strengthening of village voluntary organisations, including youth clubs. It is also planned to try a few pilot projects in urban areas, in view of the high incidence of malnutrition in large cities.

STORAGE NEEDS OF FUTURE HARVESTS

S. V. PINGALE

It is now well recognised that the new pattern of cultivation has taken deep roots in India and, if the inputs continue to be favourable, the outputs will maintain an upward trend. A review of agricultural production, particularly of foodgrains, goes to show that during the last 20 years, production has continued to increase. The increase has not, however, been enough to meet the rising demand. Storage of the produce then did not assume significance. With the expected breakthrough in production, the position has altered and this is reflected in the concern being expressed in regard to storage.

A question frequently asked is: "Have we adequate storage facilities in the country?" This depends on the different agencies involved and the facilities available with them. The agencies involved are the producers, the trade comprising commission agents, wholesalers and retailers, co-operatives, corporations. and the Government. Of these the producers of foodgrains constitute the largest agency, as about 70 per cent of the produce is held by them. The balance, along with such quantities as are imported annually are handled by the remaining agencies. In the case of commodities like oilseeds and other cash crops, the trade is the main agency involved. Also, seeds, which constitute about 5-10 per cent of the production is handled by all the agencies mentioned above.

The main agency involved in the storage of foodgrains and seeds still continues to use largely the primitive methods. A shift wherever it has occurred, is in favour of using jute bags. Agricultural commodities held in earthen or bamboo receptacles, in underground excavations or in jute bags are readily susceptible to damage by insects, rodents and birds. Also, there is considerable spoilage due to moisture. The significance of losses occurring in producers' storage is well realised; but while considering steps for improvement, stress is invariably laid on retaining the conventional pattern and not on replacing it with modern receptacles. It needs to be appreciated in this connection that technology has opened up many new relatively remunerative uses for agricultural produce and to benefit from these, the farmer will have to plan his storage and handling on modern lines. This can be illustrated by citing the handling of maize. This crop is and will continue to be grown in very large quantities in the country. So far it is used mainly as human feed and to some extent as poultry feed and raw material for starch. Many more valuable products are possible from maize and not to plan utilisation of increasing production of maize for other purposes wtll only result in a glut of the crop in the market and finally a disincentive to the producer. Other more remunerative uses will, however, be possible only if the grain is stored in modern receptacles provided with arrangements for aeration and fumigation.

CONVENTIONAL TECHNIQUES

It is also to be realised that conventional techniques are capable of taking care of small quantities of foodgrains and further need drying the grain to a very low moisture content. With intensive cultivation, storage receptacles will not only have to be suitable for any type of produce, but should also add to the value of the produce. It is needless to point out that conventional methods, with all the possible improvements, will not meet these needs. It is desirable, therefore, that replacement of storage methods should give way to modern steel or concrete bins, with facilities for aeration, fumigation, temperature detection, etc.

Assuming that the production of foodgrains is to reach the level of 120 million tonnes by 1970-71, as planned, about 84 million tonnes of this will be held by the producers. It will be a stupendous task to plan for modernisation of this storage even within the next 20 or 25 years. Possibly what can be done with advantage is to plan modern storage facilities to take care of the additional capacity needed. Even this would be of the order of 3 or 4 million tonnes every year.

In 1964, the storage capacity available to the trade to handle agricultural produce was estimated at about 20 million tonnes. No precise information is, however, available; but it is likely that there has been no addition to this capacity. Assuming that this capacity was adequate to handle the peak production of 1964-65, it will be necessary to increase this to handle the higher production of foodgrains in the coming years. However, any additional storage construction by the trade is less likely, unless there is a substantial increase in the business handled by them.

The handling and storage of agricutural inputs and outputs is being taken up by the co-operatives in increasing quantities every year. However, in view of the magnitude of the inputs and outputs that will have to be handled by 1970, a considerable spurt in their activity will be called for. At present, the storage capacity owned by the co-operatives is estimated at 2.5 million tonnes. It is planned to raise this to 3.5 million tonnes in the next two years. In view of the likelihood of fertiliser production and consumption being doubled by 1970, much of the

storage facility of the co-operatives will be utilised by inputs.

The State and Central Warehousing Corporations have been able to raise their capacity to only 1.6 million tonnes during the last few years. Though this capacity is meant for storage of all agricultural produce, more than half of it is used for handling foodgrains. The Food Corporation has taken over from the Union Food Ministry more than half of the capacity owned by the Government and now has a capacity of about 1.8 million tonnes. More capacity is being constructed under a crash programme in the States of Punjab, Haryana and Madhya Pradesh to meet increasing demand.

Only some quantities of foodgrains, either imported or procured locally, are handled by the State and Central Governments. The storage capacity required for this has been constructed only recently and is largely owned by the various governments. The entire capacity amounts to about 2.5 million tonnes. Some of the State Governments, like Punjab, Haryana and Bihar, have plans to put up additional storage capacity. The design, location and total capacity are, however, the points being discussed by them in relation to the availability of funds.

AGENCIES INVOLVED

A number of agencies, are involved in the storage of agricultural produce. Attempts to co-ordinate their activities have been made so far mainly in respect of foodgrains. Even in this case plans seem to have been made for meeting only the immediate needs. Buffer reserves of foodgrains, jute, sugar, fertilisers, pesticides and seed, as well as normal storage needs of various agricultural inputs and output, will demand much closer co-ordination in the efforts of different agencies.

The design of storage facilities is another aspect requiring serious thinking. Much of the agricultural produce as well as fertilisers continues to be handled in jute bags. Storage structures are, therefore, being raised for handling bagged commodities. Whether production of jute can meet increasing domestic needs in future, in addition to export demands, is the main question. It is equally evident that increased domestic demands will have to be met at the cost of exports. In case home needs are to be met at the cost of exports, it will be necessary to consider the bulk handling of a number of commodities and to design storage accordingly. Similarly, the needs of processing industries, which are expected to increase in the coming years, will have to be taken into account in designing new storage and handling facilities.

An important thing to be considered is whether the required knowledge and resources are available in the country for this huge programme. Experience relating to foodgrains amply shows that when a determined effort is made, the knowledge and resources are not found lacking One can, therefore, be safely optimistic in finding a solution to this complex problem if a single agency representing all interests is entrusted with the work of co-oridinating the needs and execution of plans. Side by side, it is to be appreciated that the investment made in the pre-harvest problems can be realised only with matching investment in the post-harvest problems.

SHIFT IN AGRICULTURE

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Exploitive agriculture offers great possibilities if carried out in a scientific way but poses great dangers, if carried out only with an immediate profit or production motive. Intensive cultivation of land without conservation of soil fertility and soil structure would lead ultimately to the springing up of deserts. Irrigation without arrangements for drainage would result in soils getting alkaline or saline, as has already happened in large areas in the Punjab, Haryana, Western Uttar Predesh and Andhra Pradesh. Indiscriminate use of pesticides, fungicides and herbicides could cause adverse changes in biological balance as well as lead to an increased incidence of cancer. Unscientific tapping of underground water could lead to the rapid exhaustion of this wonderful capital resource. The cultivation of one or two high-yielding strains in large continuous areas could lead to the incidence of severe epidemics similar to those which caused the Irish potato famine of 1845 and the Bengal rice famine in 1942. The relative importance of diseases and pests will also change, as is happening already in wheat where, for the first time, insect pests are assuming menacing proportions. The adoption of exploitive agriculture on a large scale, without coincidentally building up a proper scientific and training base to sustain it, may only give rise to unfulfilled expectations.

India today holds the world record for the speed with which a significant research finding has been applied in the field. During the *rabi* 1963-64 season, with the assistance of the Rockefeller Foundation, the I.A.R.I. introduced wheat varieties containing the 'Norin' dwarfing genes from Mexico on the basis of my theoretical analysis that dwarf varietles are essential for the destruction of barriers to high yields in this crop. These were thoroughly tested all over the country during 1963-64 and 1964-65 and data adequate to take the decision of importing large quantities of seeds of two varieties were presented in June, 1965. With the 250 tonnes of seeds imported in 1965 and 18,000 tonnes in 1966, we had nearly 4 lakh hectares under dwarf wheats during the last winter season and nearly 20 lakh hectares this year. There is no parallel for such rapid spread of new varieties in the world and this achievement has stimulated Turkey and Pakistan to take similar action this year. If we continue with the same dynamism in integrated planning and action, agriculture will soon become our primary industry and the source of great rural prosperity and national happiness. At this time of our record wheat harvest, it is important that we do not allow the prevailing climate of confidence to degenerate into a climate of complacency.

A major portion of foodgrains that reach markets is by bullock carts

MOVEMENT OF FOODGRAINS

INCREASING BURDENS IN THE FUTURE

P. P. LAKSHMANAN

THE population of India, which is increasing at an estimated annual rate of 2.5 per cent, means that every year an additional 12 million people will have to be fed. This means that more and more quantities of foodgrains have to be moved from farms to population centres scattered far and near. The transportation of foodgrains is not a difficult problem in terms of increasing quantity only, but also for the pressures it creates on the means that have to be employed to move it from one place to another. In this context, the Joint Technical Group for Transport Planning in the Planning Commission recently undertook a survey of the existing transport patterns for foodgrains, and the likely changes that might emerge in the patterns for the future.

On the basis of the distribution of population between rural and urban areas and the present consumption rates, the net increase in population puts up the country's annual consumption requirements of rice by about 9 lakh tonnes, of wheat by over 3 lakh tonnes, and of jowar by about 2 lakh tonnes. The consumption requirements of pulses are also estimated to increase by more than 2 lakh tonnes. In determining the logistics involved in the movement of foodgrains, it is necessary to determine the probable production centres from where foodgrains will have to be transported to distrition and consumption centres.

A break-up of the 120 million tonnes foodgrains target, envisaged in the Draft Fourth Plan of August 1966, shows that the anticipated production of rice and wheat in 1970-71 would come close to the production based on past trends, but large divergences are likely in respect of several States. The anticipated production of rice is less than the trend of production in West Bengal, Bihar, Madhya Pradesh and Mysore. Similarly the anticipated production of wheat is likely to be less in Punjab, Haryana and Madhya Pradesh. It may be necessary for the State Governments concerned to review their production targets of foodgrains, especially if provision has to be made for likely shortfalls in production. The study takes into account an import requirement of 3 million tonnes of wheat in 1970-71.

Linking Surplus and Deficit Areas

The overall transportation problem in regard to foodgrains traffic is one of linking surplus and deficit areas in the country in respect of each foodgrain. A study of the problem has shown that it is possible to effect considerable saving in transport, if it is known in advance where the surpluses are likely to be, as well as information on such things as freedom of movement, facility of

transport, etc. To a great extent these conditions do not exist in the country at present.

Farming in India is largely subsistence farming. Nevertheless, a marketable surplus of over 25 million tonnes of foodgrains are carried every year from the farms to the markets. This is made up of an estimated percentage of marketable surplus for the whole country which is 31 in the case of rice, 45 for wheat, 25 for jowar, and 50 for pulses. A major portion of this is transported by bullock-cart, which will continue to occupy an indispensable place in the rural economy. This is due to the fact that the villages are mostly linked with wholesale markets by *kachha* roads, the marketable surplus per farm household is small, and the cultivators use the carts for various agricultural uses besides as a means of transportation. Measures could be considered for the improvement of the bullock-carts such as the replacement of iron tyres with pneumatic tyres, provision of ball-bearings, etc., which would increase their speed and capacity, on the one hand, and reduce damage caused to the roads, on the other.

Rural Roads

The roads connecting the farms in the villages and the main markets are, generally speaking, in a deplorable condition, and many of these roads cannot be used for a large part of the year, particularly during the monsoon, when the rivers are in spate and the roads become impassable. On a review of rural roads in the country, the Committee on Transport Policy and Co-ordination recommended that the State Governments should earmark a proportion of the allocation for roads in their plans for rural market roads. In pursuance of this recommendation the State Governments have been requested to earmark for rural roads 20 per cent of the State Plan allocation for roads. The importance of a co-ordinated programme of rural market roads being implemented by the different agencies concerned in the States, namely, the State P.W.D., the District Boards, the Panchayats, etc. need hardly be

Railways carry 12 to 14 million tonnes of foodgrains a year

emphasised. In implementing the programme, however, priority has to be given to areas producing larger quantities of foodgrains and those with larger surpluses.

Rail Transport

The originating tonnage of foodgrains on the Indian Railways has been around 12-14 million tonnes per year in recent years, with an average leads fluctuating around 800 kms. The relatively large lead of foodgrains as a whole covers shorter leads of foodgrains like Jowar, Bajra and Ragi which are mostly 'locally' consumed and longer leads for imported wheat which originates at a few ports like Bombay, Kandla, Madras and Calcutta, and goes all over the country. The foodgrains traffic consists of about 3-4 million tonnes of rice and paddy, about 1-2 million tonnes of Jowar and other indigenous cereals, about 2-3 million tonnes of pulses, and an unsteady volume of wheat, most of which is imported.

Inter-State rail movements of these four varieties of foodgrains in 1963-64 on 216 sections of different Zonal Railways, showed that rice moved on 157 sections, pulses on 155, wheat on 148 and Jowar on 85. The highest density of traffic on account of all foodgrains in inter-State movements were on six sections of the Central Railway (from Jhansi and Nagpur to Bombay) and one section of the Southern Railway (Vijayawada to Gudur). On all these sections, the density was of over 1 million tonnes. All the foodgrains, in varying quantities, moving from north to south, and east to west, as well as imported wheat from Bombay, seem to converge and swell the total foodgrains traffic on the six sections of the Central Railway mentioned above, which are also the 'catchment areas' for considerable market surplus in rice and wheat as well as jowar and pulses. The high density on the Vijayawada—Gudur section of the Southern Railway is indicative of the large southward flow of rice from Andhra Pradesh. This section also carries traffic in pulses, but the movement of wheat and jowar is only nominal.

Road traffic in India is believed to be increasing in the country, both absolutely and proportionately. Substantial movements of foodgrains take place by road, both in intra-State and inter-State movements has reached proportions beyond the stage of being ignored as negligible. The estimates of per capita consumption of foodgrains in different States on the basis of outflow/inflow by rail only would be unrealistic and misleading, and it is, therefore, necessary to take into account the inter-State movement of foodgrains by road.

The aggregate traffic in foodgrains by rail and road, is expected to rise from 27.7 million tonnes in 1963-64 to 32.1 million tonnes in 1970-71. The increases will be mainly in wheat and Jowar, which will compensate for the apparent decrease in traffic in rice and pulses. The expected changes in the volume of traffic of different foodgrains will be due to the geographical distribution of production potential and the consumption patterns of the foodgrains concerned. Rail traffic is expected to increase from 12.9 million tonnes to 15.6 million tonnes, and road traffic from 14.8 million tonnes to 16.5 million tonnes. Most of the increase in rail traffic may take place in regard to rice; whereas most of the increase in road traffic is likely to be in wheat and jowar. Rice will move in bulk and over long distances, for which rail transport is more suitable, whereas wheat (which in 1970-71 will include smaller quantities of imported wheat) will move in smaller quantities. Consumption of Jowar is mostly localised, and inter-State movements between adjacent States give rise to short lead movements for which road transport would be availed of.

Some of the points to be noted in inter-State movements envisaged in 1970-71 may be mentioned. Inter-State rail traffic in foodgrains may be confined to 237 rail sections; but in view of the lower volume of imports (about 3.0 million tonnes of wheat) and the rationalisation of movement, only a few of these sections would have an aggregate traffic of over 1 million tonnes in 1970-71. These would include the Vijayawada-Gudur section of Southern Railway (1.05 million tonnes of rice and pulses); the Bhadrak-Kharagpur section of South Eastern Railway (1.14 million tonnes of rice and pulses); and the Adra-Asansol section of South-Eastern railway (1.27 million tonnes of rice, wheat and pulses). These sections would be carrying surplus foodgrains from Andhra Pradesh to Madras and Kerala, and from Orissa to West Bengal, Assam and Bihar. None of the Central Railway sections carrying over 1 million tonns of foodgrains in 1963-64, referred to earlier, are likely to have such large traffic in 1970-71.

The volume of rice despatches to Assam anticipated in 1970-71 (7 lakh tonnes per year) will be unprecedented. The Farakka Barrage, when completed, may facilitate movement on this scale, but this will only be up to Bongaigaon or Jogighopa. The Central Road Transport Corporation may, therefore, have to play a more impor- that role in the distribution of rice and other foodgrains in Assam, NEFA, Nagaland, Manipur and Tripura. It may also be necessary to move a substantial part of the rice received at Jogighopa by water transport to Pandu and beyond.

As regards movements from Andhra Pradesh, it may be noted that rice supplies to Kerala are sometimes impeded by non-availability of railway wagons. A suggestion has been made that rail transport should be supplemented by coastal transport from ports in Andhra Pradesh to ports in Kerala, but it is felt that coastal transport would be more expensive than rail transport.

Wheat Movements

As compared to rice traffic, wheat movements are expected to be smaller in both inter-State and intra-State movements in 1970-71. The most important changes in wheat movements, however, would be in regard to imported wheat which is expected to be comparatively smaller in volume. The relative shares of different ports in the reduced imports would change radically. Kandla and Haldia would not only receive the major part of the imports intended for consumption by deficit States, but also the whole of the imports required for bufferstock. If developments take place as anticipated, the new port of Haldia with new rail and road connections will be in a better position to handle wheat imports amounting to 1.7 million tonnes. Kandla port, too, will be able to handle larger quantities with its new broad gauge rail connection. The proposals that are being made now for clearing foodgrains at the congested ports of Calcutta and Bombay and their despatch by road through the metropolitan cities concerned, would need to be reviewed if the receipt and disposal of wheat imports in 1970-71 are likely to materialise.

Bufferstock

It would be difficult to indicate the sources and quantities of different foodgrains that would constitute the bufferstock and even more difficult to foresee the likely despatches from the bufferstock which would depend on future scarcities in different areas. On the basis of the study, it is seen that a surplus about 8.5 million tonnes of foodgrains might be available for bufferstock in 1960-71, of which the break-up, grainwise, would be: rice 1.4 million tonnes, wheat (imported) 1.3 million tonnes, jowar 0.7 million tonnes, and pulses 0.1 million tonnes. Practical considerations relating to procurement, storage and speedy despatches at short notice may necessitate a well-conceived strategy in the location of bufferstock. It may be noted that the bufferstock created has to be rotated periodically, as prolonged storage would lead to deterioration of foodgrains. This would mean a regular inflow and outflow of foodgrains at intervals in respect of the godowns included in the bufferstock programme.

The programme for the construction of godowns for storing bufferstock should receive high priority. The programme has, however, been slowed down since 1966-67 owing to financial stringency and also for the reason that the storage capacity already created has not been utilised to the full extent. The construction of additional godowns is very necessary if a bufferstock of the order of 3.5 million tonnes is to be managed by 1970-71. A large-sized godown of about 1 lakh tonnes capacity would take about 2-3 years to complete which has to be taken into account in drawing up the programme Storage and transport are interlinked with seasonal surplus and shortage, and an apparent transport problem can frequently be solved through an increase in storage capacity.

MORE FERTILISERS FOR BETTER CROPS

V. R. DAMLE

THE forecast for the total foodgrains production during 1967-68 is 95 million tonnes or more. After two bad years of production this is a very good recovery ; and the expectation of a good harvest has changed the depressed outlook of the nation into hope.

During the last 15 or 16 years the food production in India has almost doubled. In 1950-51 the total production was about 55 million tonnes and in 1967-68 it is expected to be over 95 million tonnes. The increase is the cumulative effect of several factors.

However it is now generally accepted that fertilisers play a major part in the increased food production.

We still lag behind in the use of fertilisers. In 1964-65 India used about 4.4 kg. of fertilisers per hectare of arable land. The corresponding figures for some other countries were : Netherlands 556 8 kg., Belgium 500.50 kg., West Germany 328. kg. Japan 304.4 kg. U. A. R. 110.2 kg., Israel 93.3 kg., U. S. A. 54.5 kg. and U. S. S. R. 19.4 kg. In U. S. A. and U. S. S. R. the density of population is low, the cultivation in the past had not been so intensive to deplete the soil of nutrients so extensively and all the arable land was not cultivated. Hence, these two vast agricultural areas could do with relatively low input of fertilisers per hectare of arable land.

Production Capacity

The target for consumption of nitrogenous fertilisers at the end of the Third Plan was one million tonnes of nitrogen. All this quantity was expected to have been manufactured within India by the end of that Plan. However, expectations could not be realised and the progress in the manufacture of fertilisers remained slow as compared to the rise in its demand. At present the consumption of nitrogenous fertilisers is over 1 million tonnes of nitrogen per year, but the indigenous production is only about one-third of this. Rest is still imported.

The present capacity for the production of nitrogenous fertilisers is over 8 lakh tonnes (N). Most of this is in the public sector. However, the production in 1967-68 may be a little less than 4 lakh tonnes (N) only. There is still a big gap to be covered between the indigenous supply and demand. There is always some lag between setting up a fertiliser plant and achievement of stabilised production. Setting up of capacity, however, ensures production within a short period. The present installed capacity for phosphatic fertilisers ($P_2 O_5$) is over 4 lakh tonnes per year.

Growing Consumption

The raw materials for the production of nitrogenous fertilisers are at present indigenous. They are nitrogen from air and hydrogen obtained from water by using electrical energy or from controlled combustion of petroleum naphtha, coal, coke or lignite. The raw materials for the production of phosphatic fertilisers have to be imported. At least some saving on account of processing is possible. In the case of potassic fertilisers, all the fertiliser is imported.

In the last three or four years the use of fertilisers has gone up very rapidly, especially since the introduction of high-yielding varieties. The Indian farmer, although rooted in tradition, has, it appears, now awakened. It is said that within the next two or three years the consumption of nitrogenous fertilisers would exceed 2 million tonne mark. The strategy aims at this. The use of phosphatic and potassic fertilisers is also catching up though not so rapidly.

To keep up this tempo of consumption, very high priority for the development of production of fertilisers within our own country is essential. Otherwise a large chunk of our resources will be spent in importing the requirements of fertilisers. The fertiliser imports in 1960-61 were of the order of $25 million and in 1967-68 may be $265 million. Apart from this the food import bill also runs into several crores of rupees.

The production of chemical fertilisers is a highly technical and capital intensive industry. Large investments are required. Experienced and trained technical personnel are necessary. Supply of raw materials has to be assured. Facilities have to be given to the consumers to lift fertilisers in adequate quantities. Continuous education of the farmer regarding use of fertilisers is necessary. Arrangements for storage and timely supply of fertilisers to the cultivator are called for. The drive to promote fertiliser use will have to be intensified.

Raw Materials

At present most of the production of nitrogenous fertilisers is from the public sector units. However, now interest has also been shown by the private sector. Yet the efforts need to be still more. According to present thinking, all the requirements of nitrogenous fertilisers, which would also increase by that time to about 4 million tonnes of N, may be met within next 6-7 years. New units have been planned both in public and private sectors. Foreign investors are being attracted for collaboration and participation. New processes and new raw materials are being thought of in connection with this planned increase.

So long as we are not able to find out good exploitable mineral sources for phosphorus, we will have to depend on the import of either the raw materials or the final product of phosphatic fertilisers.

The total requirment of $P_2 O_5$ is approximately half that of nitrogen. The quantity of potassium ($K_2 O$) input, in terms of total requirement of the country, is presumed to be about one-third of nitrogen requirement.

The sea is a source from which potassium can be recovered. Yet this has not been economically feasible so far. Efforts are at present being made to achieve a proved commercially attractive process to extract potassium from the sea. Let us hope this is possible soon.

FARMING CLUBS For Boys And Girls

AN EXPERIMENT IN NAINITAL DISTRICT

J. RADHAKRISHNAN

FROM all appearances, Rajeshwar Nath is a happy-go-lucky ten-year old urchin. He reads in fifth class in Deoria village in Nainital district of Uttar Pradesh. After putting in a full day's attendance in school, he rushes home not to play but to put in one hour's solid work on a kitchen garden growing cabbages.

Hira Visth is a shy, slip of a girl. She is an eighth class student in Keshar Junior High school in Kurpia village, also in Nainital District. Her proud achievement is growing cauliflower and radish on a small plot of land which was lying fallow not long ago.

Durga Joshi is a mother of three girls and a boy. The daily household chores keep her busy all day. But she manages to find time and takes pleasure in guiding the neighbourhood boys and girls in vegetable growing, sewing and knitting.

Rajeswar Nath, Hira Visth and Durga Joshi fall into different age groups. But they share one common interest—membership of the newly started rural youth clubs in their village.

First of their kind started in India, the clubs are appropriately named: Bal Mangal Dal and Balika Mangal Dal. Initiative in forming the Mangal Dals was taken by the U.P. Agricultural University (UPAU) in Pant Nagar, Nainital district. This is as it should be. UPAU is India's pioneer farm university which is playing a significant role in developing high-yielding seeds and in spreading scientific techniques of farming to help accelerate India's foodgrains production.

The brain behind organising the Bal Mangal Dal is Rishikumar Shukla, Assistant Professor of Extension Education at UPAU, with inspiration provided by a veteran rural youth club organiser, Professor T. Joe Faggetti of the University of Illinois (who is Extension Service Adviser at UPAU)

Says Prof. Shukla, "Quite a number of villagers around Pant Nagar have become prosperous farmers taking full advantage of the new hybrid seeds and new techniniques of farming developed at UPAU in recent years. Their new wealth has infused new enthusiasm to educate the children. But no effort has been made by the farmers to educate their children to develop a love for land and farming."

This struck Prof. Shukla as a serious gap. Rural youth who number about 66.3 million as compared to 14.6 million urban youth, are the future farmers of the country. If they are not exposed to improved science and technology, they will remain as much resistant to improved practices as their parents.

ENTHUSIASTIC RESPONSE

After a detailed study of the school and spare time activities of the youth in the Pant Nagar region, Prof. Shukla chalked out a plan to get the young boys and girls to participate in constructive group projects such as vegetable growing, calf rearing, poultry farming and community service.

Two villages were selected to try out the experiment—Kanakpur, 6 kilometers from UPAU campus, and Deoria, 16 kilometers away.

At first a slide show was arranged at Kanakpur depicting millions of rural youths in America learning and earning by engaging themselves in varied farm projects during their spare time on the 4-H Movement. The 4-H Movement came into being in the United States at the turn of this century. The clubs for both boys and girls are devoted to the "equal training of the Head, Heart, Hands and Health" – hence the name 4-H club. After the show, a discussion was held on forming clubs on the 4-H model.

At a later date, Prof. Shukla and Prof. Faggetti went back to the village to organise a club for boys. The response from the youth was so enthusiastic that a girls' wing was also organised.

Though the two clubs have been functioning for the past six months only, the Bal Mangal Dal has already a membership of 73, while the Balika Mangal Dal has 44 members. Membership is restricted to the age group 9-17.

Under the rules, each member of the club is required to select and carry out a project of his liking. As of now, the projects are mostly related to growing vegetables. Girl members, in addition, receive training in sewing and knitting.

INITIATIVE AND LEADERSHIP

Seeds for the vegetable projects are supplied by UPAU. Seeds worth nearly Rs. 150 were purchased by the Dal members of one village, and Rs. 100 in the other.

While most of the members chose a small plot in the backyard of their homes for carrying out the project, many had taken land in front of the school—about three acres in all in both the villages.

To help club members, manuals on vegetable growing are supplied and instruction given on calf rearing and poultry farming. Club members also maintain a project book, recording particulars of operation.

Professors Shukla and Fagetti make periodic visits to the villages to study progress made and problems faced by the youngsters.

The main intention of the clubs is the development of leadership and initiative among the young people. This is achieved by providing them an opportunity to work in groups in an organised fashion. And in the process, the club members get acquainted with the scientific techniques of better farming.

"Recently a vegetable exhibition was held for the club members. More than 90 per cent of the members participated. Many visitors who came to scoff went away amazed at the ability of young boys and girls to raise a bumper harvest of potatoes, cauliflowers, cabbages, radishes and may others. The participants had a roaring sale. This has inspired the members to double the project area.

The message of earning while learning has got through in the neighbouring villages. Requests are pouring in from several schools and village leaders for starting youth clubs.

After a visit to UPAU, faculty members of agricultural universities in Orissa and Madhya Pradesh have planned starting youth clubs in their respective States.

EVOLVING IMPROVED STRAINS OF PULSES

WORK OF INDO-AMERICAN PROJECT

PULSES form a fourth of our daily food. Especially in the rural areas, where on account of general poverty, people cannot afford a rich and varied diet, pulse recipes complement the dry wheat or jowar bread. Apart from taste, they add to the nutritive value of the diet and are supplementary to the intake of cereals. Pulses are indeed an important part of our food and India is unique in having a rich variety of pulses such as gram, tur, urad, mung, kulthi, pea, lobia, moth and masur.

Besides reducing the consumption of cereals in our daily food, it is noteworthy that, unlike other foodgrains, India has been self-sufficient in pulses. While huge quantities of cereals are imported every year, pulses are exported earning some foreign exchange (Rs. 2.9 crore in 1966 by exporting 78000 tonnes of pulses). About a fifth of our total cultivated area is under pulses and the annual production of pulses is about a seventh of the total production of foodgrains. The production of pulses was about 120 lakh tonnes in 1964-65 and 89 lakh tonnes in 1966-67.

However, the availability of pulses has been going down for the past twenty years. The production appears to be increasing as more land is being put under pulses every year. During the sixteen years, 1949 to 1965, the pulses production went up by 1.86 per cent, mainly due to an increase of 2.12 per cent in the acreage. But the yield per acre has stagnated, rather declined. As a result, the per capita availability of pulses came down to 41.8 grams in 1967 from 74.7 grams in 1959 while that of cereals increased to 412.8 grams in 1966 from 324.6 grams in 1952.

On the whole the per acre yield, of pulses is not very satisfactory, just about 200 kilogrammes. In view of the high nutritive value of pulses and their supplementary role in our food, it is necessary that efforts are made to improve the production of pulses when there is a serious effort in the country to increase the production of foodgrains.

The Indian Agricultural Research Institute, Delhi, has recently undertaken, in co-ordination with the United States of America, a project to improve the production of pulses. The Indo-American Co-ordinated Pulse Project has given a new impetus and dimension to the pulse research. In this project specialists in various disciplines, such as breeding, agronomy, nutrition and plant protection, are tackling the problems of the various pulse crops.

The nucleus of this project is at IARI (with USA counterpart offices nearby) to tackle the fundamental and inter-regional problems of major pulses as a whole, while the regional problems will be taken care of at the two regional centres at Jabalpur and Hyderabad, and at the three sub-centres at Ludhiana, Varanasi and Coimbatore. Promising varieties of different pulses and newer techniques and management practices for growing them as revealed through research will also be tested at the various testing centres planned throughout the country.

The U.S. (AID) team (headed by the Chief Project Co-ordinator Dr. Peter H. van Schaik), is providing the motive force and dynamism to the project. It has brought in a wealth of germ plasma from Iran, where it successfully accomplished a similar mission. About 17000 varieties of pulses have been collected from all over the world on exchange basis for selection and tests in Indian conditions. These collections, along with improved varieties already evolved under earlier Indian schemes, are now screened in the regional centres and sub-centres to assess their qualities, such as maturity, yield, protein content and pest and disease resistance. These studies and revaluations have discovered short duration varieties (3 to 4 months) of Tur (which ordinarily take 8 to 10 months) and also dwarf types of plants of less than a metre height and prolific yield (while their general height is above two metres) at the Regional Centre at Hyderabad. Varieties of gram resistant to wilt and blight have also been identified. Varieties resistant or tolerant to their various insect enemies are also being identified.

Along with studies to find out pulse varieties with better protein content, investigations are already afoot to isolate *khesari* varieties with lesser neurotoxin (which cause lathyrism) content or none at all. Possibilities of growing summer crops of pulses are looked into and even some of the gram types got from Iran are in the trial list.

Other highlights of the achievements of this project include the development of the 2½ month Baisakhi mung at IARI for growing between the short intervals of *rabi* and *kharif* and yielding over a tonne of grain per hectare. How the new management technique could push up the yield of even low yielders was shown in the recent *kharif* 1967 experiments. A two-month crop of Jalagaon—781 mung which hitherto yielded only half a tonne, gave a fourfold increase in the sandy loam soils of Hissar when grown under a heavy dose of NPK fertiliser at the rate of 100 lb. each. Similarly, in the Terai areas the Tur variety T.21 of 5½ months duration yielded over 5 tonnes per hectare under fertilisation with 90, 120 and 60 lb. respectively each of NPK (the normal yield is 1.2 tonnes per hectare).

IRRIGATION IS THE LIFE-BLOOD OF AGRICULTURE. In India, the old Persian wheel (above) continues to be an important source of water for field and farmer. But more modern methods of irrigation are gradually taking the place of the old. Numerous canals (below) built during the three Plan periods, carry water to the parchad fields and give new life to the land.

IT HAS BEEN SAID, "AS YOU SOW, SO YOU REAP." This is not true about agricultural crops ; because it is one thing to plant the seed and help it grow, and quite another to take home a plentiful harvest. Different crops thrive on different types of fertilisers, which the farmer has to sprinkle (above), to make the plants grow strong and yield more. Among the farmer's chief enemies are insects and pests, which feed on standing crops, and play havoc with the harvest. It is against these destructive elements that the farmer has to battle, which he does by spraying pesticides (below). Yet, this is not enough ; the need to nourish the soil and the crop with fertilisers is equally important.

PANCHAYATI RAJ

for Better Farming

I. D. N. SAHI

THE basic objective of Panchayati Raj was and remains recognition of the organic inter-connection between rural development effort and popular support. Investment of time, effort and money on local development plans cannot yield the expected results unless the people primarily affected are fully involved, through their representative institutions, in formulating and implementing plans for their welfare.

In one word, Panchayati Raj was conceived as the process of democratic decentralisation. According to the Balwantray Mehta Committee's Report, out of which the whole concept took shape, "it is very necessary that there should be devolution of power and decentralisation of machinery and that such power should be exercised and such machinery controlled and directed by popular representatives of the local area". It is in this context that the interlinked three-tier structure—Gram Sabhas and Panchayats at the village level, Panchayat Samitis at the Block level and Zila Parishads at the district level—was brought into being. A beginning was made with Rajasthan and Andhra Pradesh in 1959, followed by Assam, Madras and Mysore in 1960, Maharashtra in 1962, and Gujarat and West Bengal in 1963 and 1964 respectively. Bihar and Madhya Pradesh enacted the relevant legislation in 1962, but are yet to give full effect to it.

No rigid institutional pattern has been laid for the Panchayati Raj set up. Every State is free to work out the details of its own pattern, in the light of local conditions and requirements, subject to certain fundamentals.

These are :

(i) a three-tier structure of local self-governing bodies from the village to the district, the bodies being organically linked up ;

(ii) genuine transfer of power and responsibility to them ;

(iii) adequate resources should be transferred to these bodies to discharge the responsibilities devolving on them ; and

(iv) the system evolved should be such as will facilitate further devolution and dispersal of power and responsibility in the future.

PLENITUDE OF AUTHORITY

The powers and responsibilites of Panchayati Raj bodies are derived not only from the relevant State legislations, but also from the procedures, administrative and financial, laid down by the State Governments to give effect in practice to the statutory provisions. The crux of the problem really is the plenitude of authority and resources at the disposal of these bodies in actual working. A review recently undertaken in the States indicated that "while adequate functions relating to agricultural production had been assigned to the Panchayati Raj institutions and that, by and large, these bodies and their committees had been involved in planning and implementation of these programmes, there was scope for fuller involvement through greater delegation of powers and responsibilities and devolution of commensurate financial resources by the State Governments, to enable these bodies to render more effective service in furtherance of food and agricultural programmes".

The position in regard to devolution of resources varies from State to State. This is taken up, of course, with the resources, in turn, of the State Governments themselves. It also depends on the basic commitment to Panchayati Raj in the policies of the State authorities. Naturally, devolution of resources can be made only consistently with the competence and capacity of the Panchayati Raj institutions. But all the available evidence goes to show that such competence and capacity actually improves in the measure in which they are pressed into service. It is not without significance that States like Maharashtra and Gujarat, where Panchayati Raj has struck strong roots, are also amongst the States which have entrusted them with programme responsibilities under the State Plans for a wide and growing range of activities.

UPWARD TREND

The overall position, in the country taken as a whole, shows an upward trend. It may not be as fast as the proponents of Panchayati Raj themselves might have wished ; but the very fact of an increasing trend in the volume of funds devolved is, perhaps, an indication that Panchayati Raj is gaining momentum as time advances. The available data, which is still incomplete, go to show that channelisation of departmental programmes with relevant resources

to Panchayat Samitis, all the States taken together, had risen from Rs. 137.94 crore in 1963-64 to Rs. 205.92 crore in 1966-67.

Another yardstick of what the Panchayati Raj institutions are able to do, could be the measure of their own tax effort. The total of taxes collected by these bodies in the reporting States amounted to Rs. 10 crore in 1961-62 ; the annual collection had more than doubled by 1965-66. As a matter of fact, over the five year period ending with 1965-66, Panchayati Raj institutions, even on the basis of incomplete data so far available, had collected as much as Rs. 85 crore. The contribution in terms of their own development effort is thus, by no means, insignificant. They must, no doubt, do even better ; but this again is more and more a question of strengthening the system rather than condemning it as a failure.

REVIEW TO STRENGTHEN

Review of the working of Panchayati Raj institutions, in order to strengthen them at the various levels, has been a continuous process. Study Teams sponsored by the Centre and some State Governments have made recommendations from time to time, on different aspects of the Panchayati Raj system, such as the method of elections, finances, audit, incentives and safeguards. Similarly, academic and voluntary organisations of standing have carried out a variety of studies. In general, the common theme of all such reviews and studies has been not that the Panchayati Raj system has failed, but that it could be made more effective. Weaknesses have been identified ; but the remedies, never far to seek, have been indicated as well.

The working of Panchayati Raj has been reviewed regularly over the years by the States and the Centre together at successive annual conferences on Community Development and Panchayati Raj. The last such Conference, held in October, 1966, again laid stress on the need to strengthen the Panchayati Raj structure, particularly at the district level, as an instrument for imparting greater effectiveness to the development effort.

To answer the question heard quite often nowadays whether Panchayati Raj has succeeded or not, it is important to have a sense of perspective. Its achievements are usually considered inadequate, not so much in absolute terms as in comparison with expectations. It is overlooked, however, that rural communities have to be energised and stimulated to identify and tackle their problems, through their representative institutions, in the context of what is, after all, the backlog of centuries. Upsurge of expectations is implicit in the process. Aspirations ahead of achievements, or the capacity to achieve, are common wherever development is in train.

It may also be mentioned that Panchayati Raj has had a total life of a little over eight years in the States where it was ushered in first, while others have had it for shorter periods and yet others have still to have it. Taken together, it would not be unreasonable even to treat the process as still in its formative stages.

It may indeed be pertinent to recall some of the salient findings of the all-India survey carried out by the National Institute of Community Development on "Awareness of Community Development in Village India". The study, covering all the States, obtained first-hand information, through scientifically structured random sample survey of some 7,226 respondents in 365 villages throughout the country. The definite majority view was that the system of decentralised democracy had fostered the emergence of new leadership in the rural areas and that the elected representatives were generally better than the old traditional leaders. Social welfare and increased agricultural production were considered as the most important purposes served by Panchayati Raj.

FACTIONAL SQUABBLES

It is sometimes suggested that local factional squabbles, which tend to find their way into the Panchayati Raj bodies, lead to the dilution of the development objectives ; also that wider national perspectives tend to get blurred through parochialisation of the effort. It is usually forgotten that factions and cliques have been in existence in the villages for a long time. Elections to Panchayati Raj bodies have in many cases resulted in realignment of the existing factions. Conflicts which were personal in character have been changed into group dissensions based on more impersonal issues. This is a concomitant of political development and a corollary of the situation where politics and village society meet. The issue is not to seek alternatives to the people and their institutions ; it is to encourage and enable them to do better. It is also not uncommon to come across the suggestion that shortfalls in performance at the field level, particularly in the sphere of agricultural production, ought to be blamed on the Panchayati Raj institutions. It is contended that agricultural production should be kept outside the purview of these bodies and made the sole concern of the departmental hierarchy with its unilinear command.

The view ignores the lessons of the previous Grow More Food Campaign. It overlooks, among others, two basic considerations.

Firstly, agricultural production is a complex of several inter-related operations : farm production proper ; co-operation, including agricultural credit, marketing and processing ; irrigation, particularly minor irrigation at the local level and rural engineering and animal husbandry. No single departmental hierarchy is designed to take charge of all these interlinked functions ; yet if agricultural production has to make the desired headway, all these allied processes have of necessity to be stepped up in a completely co-ordinated and integrated manner.

Secondly, agricultural production is not simply a matter of command, unilinear or otherwise. Popular backing is fundamental. While the actual producers may be vast numbers of individuals and families, agriculture cannot flourish without a community support and a climate of positive popular opinion. Actually, experience shows that in States where there has been some genuine attempt to clothe the Panchayati Raj institutions with the necessary authority, development programmes, including the food production programme, have, by and large, fared better.

Promotion of agricultural development, it has been recognised in practically all the State enactments, is among the chief functions of the Panchayati Raj institutions. Effectiveness in practice must necessarily depend upon the responsibilities assigned to these bodies and the backing given in the shape of actual programme content and the resources entrusted to their care. In general, the Panchayati Raj institutions have to create the necessary climate and fervour for intensifying agricultural production.

These institutions are involved in programme planning, in supply and distribution of inputs. Many of them maintain sets of farm equipment, such as tractors, power dusters, sprayers, pump sets and the like, which are hired out to individual farmers on request.

The task of organising kharif and rabi campaigns, which spearhead the food production drive every season, devolves on these institutions at their respective levels. The Block Extension agency being squarely under them, the responsibility for effective implementation of the Extension aspect of the production programmes vests with these institutions. In the process of ensuring that the different functionaries in the Extension network attend to their allotted tasks properly, they generally carry out a variety of functions. Mention may be made, for instance, of (a) provision, even from their own resources, of subsidies on seeds and pesticides, specially where new varieties are being instroduced; (b) encouragement of improved agricultural practices through demonstrations, supported financially by the Panchayati Raj institutions; (c) organisation of crop competitions; and (d) organisation of farmers' training programmes. Ultimately, it is the measure in which the Panchayati Raj institutions are able to motivate and mobilise the farmers for greater production, whether in the intensive areas or otherwise, that must provide the test of their performance, as also of their leadership.

According to the Third Report (1965-66 and 1966-67) of the Expert Committee on Assessment and Evaluation of the IAOP, the Stage II programme of working through the village leadership and developing the whole village as a unit, already shows promise, particularly where adequate attention is paid to the development of proper village leadership.

Within the resources made available to the Panchayati Raj bodies, and what they themselves could muster, the elected leaders have contributed their mite to the effort in the sphere of agricultural production, establishment of schools and primary health centres, construction of roads, drinking water wells etc.

Another major responsibility of the Panchayati Raj institutions is in the field of minor irrigation; within the resources available to them, the construction and maintenance of tanks, 'bandharas', small embankments and other minor irrigation works are invariably among their main functions. They have in the more recent past also tended to undertake small lift irrigation works where feasible. It is estimated that minor irrigation works carried out in the Panchayat Samiti areas provided additional irrigation to 1·28 million hectares in 1966-67, as against 1·10 million hectares in 1965-66.

RICE: Research and Records

COIMBATORE'S CONTRIBUTION

M.G. KAMATH

WHEN Madras State took up the large-scale growing of ADT 27, a high-yielding paddy variety, to boost its rice production, instead of Taichung or Tainan, it was indeed paying a well-deserved compliment to agricultural research.

And, when you talk about agricultural research in Madras State, you always think of Coimbatore, the 'Mecca' of agricultural research of the South. Its tradition is old and respected.

While Coimbatore's agricultural research is on many crops and many problems, taking its rice research alone, it has been a boon to the State's farmers, who grow this staple food crop on 2.6 million hectares, 47 per cent of the total area under all food crops in the State, on different types of soil and in the different seasons.

For five decades, rice research has been going on in Coimbatore's Paddy Breeding Station, and in its five other supplementary rice research centres-Aduthurai, Ambasamudram, Tirukuppaam, Talainayar and Peravuri. The first rice experiment was carried out in 1913.

One important aspect of rice research has been the breeding of new strains of the crop. So far 84 improved strains of rice have been evolved. But a good deal of trial and observations go on before any new strain is recommended to farmers. Hence about 30 of them have so far gone into farmlands, which now cover almost 70 per cent of the total area under rice in the State.

With 70 per cent of the rice area covered with improved strains from the Coimbatore Station and its sub-centres, and the adoption of better practices, no wonder Madras boasts the highest per acre yield of rice in the country. The average yield for the State is 2,220 kg. per hectare, as against the all-India average of 1,495 kg. of paddy (1,090 kg. of rice) per hectare.

FARMER should pay more FOR IRRIGATION

A Study in Water Rates

J.P. NAEGAMVALA
N.K. DIKSHIT

The income from irrigated lands has been increasing while the water rates have remained unchanged for long. The common tax-payer has to pay for creating the irrigation facilities which, at the prevailing rates, do not fetch commensurate revenue. There is scope for enhancing the water rate to 12 per cent.

IRRIGATION facilities are available to the people in the areas commanded by irrigation systems. It is, therefore, proper that the people who avail themselves of this facility should pay for it and not make the community pay. While prices of agricultural produce have been steadily increasing and cultivators of the irrigated lands have been deriving increased benefits there has not been a commensurate increase in the water rates. In the recent years the resources of the States for planned development have been dwindling for various reasons, such as increased commitments on the part of the State Governments towards the increased dearness allowances to its employees and abolition of land revenue in certain States. In this context, the need for mobilising adequate resources for the Plan by way of enhancement of water rates has assumed great importance.

Water rates should ordinarily cover working expenses and debt charges, and outside scarcity areas irrigation schemes should not involve loss to general revenue. The irrigation systems are at present working at a loss in all the States partly because of the more difficult and more expensive means of water supply, such as high dams, and partly on account of the increased cost of maintenance and operation of old and new projects. The table below shows the magnitude of the losses in financial returns from irrigation works (commercial) during the period 1965-66 to 1967-68.

	(Rs lakh)
1965-66	38.75
1966-67	41.53
1967-68(anticipated)	46.25

UNEARNED INCOME

In order to recover a part of the capital outlay invested on irrigation projects it was proposed to charge betterment levy which was meant to tap the unearned increase in the land values consequent upon the advent of irrigation. Although legislation for recovery of betterment levy exists in most of the States, recovery of the levy has not been satisfactory for one reason or another. The Maharashtra Irrigation Commission in its report (1962) recommended that a consolidated betterment *cum*-depreciation charge equivalent to 20 per cent of the water rates should be levied on all the lands benefited by an irrigation work. The Commission also recommended that water rates including the betterment-*cum*-depreciation charge would be about 12 per cent of the gross income. The possiblility of introducing the betterment-cum-depreciation charge as a surcharge on water rates might be explored by the States for augmenting their resources for the Plan.

The structure of water rates prevailing in the various States was looked into by the Nijalingappa Committee which was set up in April 1964 to suggest ways and means of improving financial returns from irrigation projects. The Committee recommended:

"Water rates should be on the basis of a suitable percentage of the additional net benefit to the farmer from an irrigated crop where, with the available data, this can be worked out. These rates may be fixed at 25 to 40 per cent of the additional net benefit keeping in view factors like rainfall, water requirement, yield and value of crop, etc. Where it is not feasible to work out the additional net benefit, water rates may be fixed, to start with, as suitable percentage of gross income to the farmer from the irrigated crop. Rates in this case may be 5 to 12 per cent of the gross income and should be worked up to.

"Water rates should be reviewed every five years. Required data regarding additional net benefit should be continuously collected for this purpose".

The recommendations of the Committee were available to the States early in 1965. Although some States might have taken steps to implement the recommendations, there seems to be a large scope for increasing water rates in the States with a view to mustering adequate resources for the Plan.

An attempt was made to estimate the revenue that might be expected from enhancement of water rates up to a maximum of 12 per cent of the gross income recommended by the Committee, for the principal crops, such as rice, wheat and sugarcane. These estimates have been based on the following data :

(i) The statistics of the area irrigated under the principal crops

relate to the year 1964-65 taken from the Economic Survey of Indian Agriculture.

(ii) Prevailing water rates taken for this study are based on the information available in the report of the Nijalingappa Committee and the subsequent information available from some States.

(iii) The yield per acre and the average farm price of the crops relate to the year 1964-65 and 1963-64 respectively.

SCOPE FOR ENHANCEMENT

The results of the analysis have shown that the revenue expected from the maximum water rates prevailing for the principal crops is of the order of Rs. 75 crore, comprising Rs. 47 crore from the irrigated area under rice, Rs. 12 crore from the area under wheat, and Rs. 16 crore from the area under sugarcane. It may be noted that the present revenue of Rs. 75 crore is a very optimistic figure as this has been calculated on the basis of maximum water rates prevailing in the States and the quantum of actual revenue would depend on the magnitude of the areas for which maximum water rates are charged.

The analysis has also revealed that the revenue from the water rates for the principal crops fixed on the basis of maximum limit of 12 per cent will amount to Rs. 187 crore, comprising Rs. 95 crore for rice, Rs. 26 crore for wheat and Rs. 66 crore for sugarcane. Thus the revenue could easily be doubled by suitable enhancement of water rates as recommended by the Committee.

Another interesting fact revealed by the study is that in the States which are generally self-sufficient or surplus in foodgrains, there is a large scope for stepping up revenue from water rates as would be seen from the following table :

(Rs. Lakh)

State	*Present revenue*	*Expected revenue*
Andhra Pradesh	1256	4235
Punjab and Haryana	384	2195
Madhya Pradesh	226	314
Madras	886	2260
Mysore	354	875

A marginal increase in the rates for the crops which cover a large irrigated area in some States can result in a substantial additional revenue to those States. For instance, in Andhra Pradesh, Madras and West Bengal, the irrigated area under paddy is quite large while the water rates are only about 4 to 5 per cent of the gross income. Similarly in the Punjab, the irrigated area under wheat was as large as 3 million acres in 1964-65, while the water rate was only 2.6 per cent. The irrigated area under sugarcane in Uttar Pradesh is about 2 million acres, the largest in the country, but the water rate is as low as 2 per cent. This highlights the urgent need for review of water rates in these States.

These estimates of enhanced revenue are based mainly on the data available for 1963-64 and 1964-65. In view of the general rise in the level of prices between 1963-65 and now, the percentage of water rate to the gross income worked out in this study will be reduced further which would mean that the need for enhancement of water rates is all the more important to-day. According to the recommendations of the Nijalingappa Committee, the rates were to be reviewed every five years. It is now more than five years that the rates were last revised in some States. These States should give urgent attention to the problem and review the position.

SUCCESS THROUGH JOINT EFFORTS

A BUMPER CROP IN KERALA

THE farmers of Uzhinjalpadam, a small village in Kerala have shown what community action could do in raising a bumper crop. Without waiting for Government assistance 105 farmers of the village got together to pump out water from a 150-acre waterlogged area and to raise an additional crop. With the help of the local Block, they formed a committee to supervise and manage the work. They decided to share the entire expenses for this venture on the basis of the land owned by each of them. Huge pump-sets were installed to pump out the huge quantity of water.

The ploughing and plant protection operations were done jointly under the supervision of the Committee. Instead of traditional ploughs, tractors were used for ploughing the area across the bunds put up by individual farmers. Micronizers were used for control operations. The common expenses worked out to only Rs. 2 for each cent of land.

The farmers were really happy beyond their description over the bumper crop. One of them told me: "It is a problem to store all my paddy because my present yield is more than twenty five times my usual yield."

—K. Jacob Samuel

STUDENT FARMERS

THE joint efforts of the students and staff of the Government Basic Institute at Dongergaon in Madhya Pradesh has for the second time got the highest yield of corn amongst the educational institutions of the State. The yields include 640 maunds of corn, 45 maunds of linseed, 9 maunds of sesame, 5 maunds of Arhar, 4 maunds of gram and 90 maunds of Tuera.

A few years back the land was barren and none had dreamt that it would give such large crops one day. It was the sustained work of the students that changed the barren land into a fertile one.

In all they cultivated 80 acres of land. They first supplied superphosphate to the land. Then they used many cart-loads of farmyard manure which was prepared by the students themselves during the last session. The first dose of nitrogen was given last June. The ammonium sulphate and groundnut cake were applied. The cost incurred during the season was as follows : cultivation—Rs 2,000, manure and fertilisers—Rs 1,000, seeds—Rs 1,000, servants' pay—Rs 1,500, student's labour—Rs 2,000. The total came to Rs 7,500.

The income from the harvest is expected to be about Rs 15,000.

It is really a matter of pride for the institution.

RESULTS OF A SURVEY IN A RAJASTHAN VILLAGE

JOWAR GROWING IS CHEAPER BUT PAYS MORE

PRAKASH CHANDRA SHARMA

IN choosing the pattern of agrarian structure which is most conducive to increasing agricultural production and in chalking out sound policies for agricultural development, cost data are immensely helpful to planners. Such data make the farmers conscious of the cost and income aspects of their occupation and of the need to raise their efficiency and improve their earnings.

A cost study was undertaken by me in Galthni village in the Pali package district of Rajasthan. The main purposes of the study were to calculate the cost of cultivation at different size levels of farms, to determine the relationship between inputs and outputs, to suggest minimum prices for the farm products and to study the efficiency of farms. For this, 30 farms were selected on a random sampling basis and information was collected orally.

In studying agricultural costs, two methods are generally employed : the survey method and the route method. But the method I adopted was a combination of these two.

The concept of cost used in this study included the cost of the following items : human labour, hired temporarily or permanently and imputed cost of family labour ; owned and hired bullock labour including its maintenance ; seed, both produced and bought ; fertilisers, manures and pesticides ; implements and their depreciation ; irrigation ; implements and land revenue ; cost of farm buildings, godowns and enclosures etc.

As regards the imputation of values, an input factor is evaluated in terms of its market price or the cost at which it is produced.

Cost of Cultivation

The cost of cultivation of major crops, cultivated in the region on the different size level of farms is mentioned in the Table below.

The table indicates that the cost of cultivation varies widely with the size of holdings. It was found that of all the crops Jowar cultivation cost the least per quintal.

Size of holdings	Cost of production per quintal in rupees			
(in bighas)	Wheat	Barley	Bajra	Jowar
Below 5	—	—	26.17	—
5-10	44.87	—	26.11	29.24
10-20	41.73	21.67	21.34	19.34
20-30	52.11	28.33	24.35	16.04
30-50	38.23	33.93	26.26	18.64
50-70	—	26.48	23.52	13.70
70-100	47.20	34.92	31.64	26.50
100-150	53.18	32.03	39.07	29.17
All sizes	47.48	29.56	27.31	21.80

The per quintal cost of production of minor crops was as follows : Gram, Rs 48 31, Mustard Rs 103.15 ; Cotton, Rs. 95.47 ; Chillies, Rs. 158.39 ; Maize, Rs. 47.72 ; and Til, Rs. 82.15.

Farm Business Income

On an average the farm business income per farm in the year under study was as low as Rs. 256.42 per farm among holdings of the smallest size while it was as much as Rs. 14.669 per farm of the higher size group. Precisely the cultivators of the highest size group earn on an average as much as 57 times more than the cultivators of the lowest size group.

But the range of variation of the size of holding is not so wide as that of income, that is, the area average possessed by the cultivators of the highest size group is only 26.5 times more than that possessed by the smallest size group. This leads us to conclude that the farmer's income increases more than proportionately to an increase in the size of holdings.

Output-Input Ratio

In order to judge the efficiency of farms and to assess the relative profitability of various crops, output-input ratios are calculated for all the farm families and for all the crops. It has been observed that 37 per cent of the farmers are concentrated in the output-input ratio of 2.0 to 2.5 while most of the farms are producing with an output-input ratio of 2.0 to 3.0.

Output-input ratios of different crops are summarised in the latter Table.

The respective output-input ratio of other minor crops are as follows : Gram 1.7 ; Mustard 1.6 ; Cotton 1.5 ; Chillies 2.8 ; Gwar 1.3 ; Maize 1.7 ; Til 2.0.

It is observed that the highest output-input ratio is also that of Jowar that is, for the farmers the relative profitability of Jowar production is the most. But the Jowar crop does not claim the highest percentage of the total area under cultivation because of the ignorance of the farmers about the cost and return behaviour of the crop. Moreover the income and consumption units are intertwined with the units of farm production. The decision of farmers regarding the

OUTPUT-INPUT RATIO

Size of holdings (in bighas)	Wheat	Barley	Bajara	Jowar
Below 5	—	—	2.9	—
5-10	2.2	..	2.7	2.3
10-20	2.6	2.9	3.3	3.4
20-30	1.9	3.0	2.9	3.4
30-50	2.3	2.7	2.6	3.3
50-70	—	3.5	3.4	4.6
70-100	2.2	2.5	2.2	2.3
100-150	1.9	2.5	1.7	2.1
All size	2.2	2.8	2.7	3.1

crop combination and the level and pattern of investment are influenced by the consumption needs of the families, the kind and amount of family resources available and capacity and the willingness of the farmer to invest.

The combined study of the output input ratio and net income per bigha revealed that the size group of 50-70 (bighas) is the best and the allocation of inputs, adoption of cropping pattern and management of farms is most efficiently done by the farmers of this group.

DEVELOPMENT DIARY

March 23 to April 6, 1968

March 23

Deputy Prime Minister, Mr. Morarji Desai, inaugurates Bhutan's first air-field. The air-field has been built by the Indian Border Road Organisation at the request of the Bhutan Government.

March 24

A new meteorological rocket named 'Menaka' made at the Thumba rocket station is test fired.

March 26

The first trade agreement between India and Philippines is signed in New Delhi.

India and Japan conclude a protocol for revising the 1955 Indo-Japanese Civil Aviation Agreement. The rivision provides for increase in Air India flights to Tokyo from three to four a week. In exchange, Japanese Airlines will operate three flights to Europe *via* New Delhi and one to Calcutta from August.

March 27

The third and the fourth generators of the Sharavati hydro-electrical project in Mysore State are commissioned. Each generator has a capacity of 89 MW. The remaining six generators will be switched on progressively at the interval of 4 to 6 months.

The new 53 kilometer long broad guage line between Jhund and Dhrangadhra in Saurashtra is opened to goods traffic. This is the first link of the Jhund-Kandla broad guage project now under construction.

The second unit of the Panki thermal power station near Kanpur is commissioned. The 64 MW station, set up with Yugoslav collaboration, has now been completed.

India signs a plan of operation with Netherlands for setting up a photo-interpretation institute at Dehra Dun. The institute will impart training in aerial photo interpretation techniques to scientists for a quick assessment of natural resources in the country.

March 29

The Punjab Government signs an agreement with Yogoslavia for setting up two dry milk powder factories—one at Bhatinda and the other near Hoshiarpur—each with a capacity of 40,000 litres a day.

March 30

An agreement is signed in New Delhi between the Fertiliser Corporation of India and the Techno-export of Bulgaria for setting up a sulphuric acid plant at Sindri. The plant, having a capacity to produce 880 tonnes a day, will be ready in 30 months at a cost of Rs. 6 crore.

New telex exchanges at Baroda and Surat are commissioned.

The second Nike-Apache rocket, carrying a barium payload, is successfully launched from the Thumba equatorial base.

April 4

India and Rumania sign a trade agreement in New Delhi. Under the agreement the trade between the two countries will increase by 10 to 15 per cent a year to reach a level of Rs. 30 crore in the next five years.

April 6

Work on the Bokaro Steel is formally inaugurated by the Prime Minister. The first blast furnance will be ready by September 1970. The plant will have an annual capacity of 1.7 million tonnes of steel besides 0.9 million tonnes of pig iron.

THIS INDIA

YOJANA invites contributions to this feature from its readers all over the country. Each anecdote must be true to life, of less than two hnndred words, capturing something significant of India's rich and varied life. Each published anecdote will be paid for.

This happened at a recent inter-collegiate declamation contest held in our college. I was one of the participants. An editor of a local newspaper was among the judges. He is also known to be a poet, though I had never read any of his poems.

During my speech, I quoted a couplet on the subject under discussion. Instead of mentioning the name of the real poet, I attributed that couplet to the editor-judge.

To my great joy as well as surprise I was declared the best debater. Later on I came to know that the editor had awarded me cent per cent marks.

Tullundur City *Swindar Singh*

Some years ago, in the month of April, I was working in a small Central Government office in New Delhi. On the first of the month, we, the non-gazetted staff, were told by our Under Secretary that we would not get our pay on the first as an inadvertent mistake had crept into the pay bill. Since it was All Fools Day, we never took his words seriously. However, by the evening, it was clear that what he said was true. And guess what was the mistake? The clerk concerned, while rendering the total of the bill (Rs 1,940) in words, wrote "nineteen hundred and forty" instead of "one thousand and nine hundred and forty" and the audit office returned the bill for correction before payment!

Cochin *Vessen*

The Secretary of a Department used to write his notings always illegibly. His subordinates and assistants dared not go to him even when they found it difficult to decipher his handwriting. They would take great pains to make head or tail out of his writings.

Once a file was put up to the minister with the Secretary's remarks. With his best efforts the minister found it impracticable to read them. The minister doodled some figures and lines. When the file was returned to the Secretary, he found it difficult to make any sense out of the minister's doodlings. He went to the minister and enquired about his remarks. The minister's reply was that he (Secretary) should read his own remarks first. Then the secretary found that it was difficult even to read his own handwriting. The Secretary could then understand the minister's intention. From that day any remarks by the Secretary, was either typed or written clearly.

Bhubaneshwar *Sankar Nayak*

In our State it is not compulsory for students to answer Hindi question papers in their school examination. My neighbour is a Hindi Pandit He had a few students for private tuition. One day before the examination, he told his students.

"Even if you cannot answer the Hindi question paper, don't give a blank paper. You merely copy out the questions on the answer paper. This will get the examiner remuneration for valuing the paper."

Tirthahalli, *Havanur Sripathi*
Mysore

From a women's college in Bombay, a few students including me were in Delhi on our way to Kashmir. We went round the capital in a hired bus and saw all the tourist attractions. At the end of two days of sightseeing, the driver of our bus requested us for a *bakshish* before bidding us goodbye.

We refused to give any. After much haggling the driver said that if we would not give him any *bakshish*, he would give us some and came out with a ten rupee note. We were quite irritated at this when he smilingly explained that he was only returning the deposit which we had paid him and about which we had completely forgotten.

He got his *bakshish* of ten rupees.

Bombay *Vasanti Amin*

While in Bombay recently, I could not resist myself from buying a Swiss wrist watch, a terylene shirt-length, and a Japanese pen which worked on capillary action. I bought them at throw-away prices from one of the pedlars at a busy pavement, near Flora Fountain, who were selling smuggled goods. I repented that I could not purchase many more things for want of money.

Shortly after I was back in Delhi, the watch stopped working and a watch-repairer told me that it had only scrap value; the pen would not get filled by capillary action; and the shirt that I got stitched of the terylene cloth shrunk into a frock.

I am happy at least that my small child loves to play with both the watch and the pen, but, unfortunately, the shirt is yet too big for him.

New Delhi *C. L. Dhawan*

As a result of the efforts to boost food production, industrial crops like cotton are likely to suffer eventually. The remedy lies in making cotton a crop of shorter duration to fit it into the rotation of multiple cropping. Fertilisers and plant protection chemicals also need to be made cheaper and more easily available.

COTTON WILL SUFFER

CHIMANLAL B. PARIKH

THE severe stresses on the food front caused by the two consecutive drought seasons in 1965-66 and 1966-67 have had one redeeming feature. All energies were concentrated on boosting food production last year. As a result, in conjunction with a favourable monsoon, the food production this year is expected to be an all-time record, and one can say with some confidence that we have turned the corner on the food front.

This phenomenal success has, however, another side. Most of the breakthrough has been achieved in the case of food crops. Phenomenal yields of composite and hybrid varieties are realised within a period of 3½ to 4½ months, resulting in a net return of Rs. 900 to Rs. 1,200 per acre. Naturally, this will encourage farmers to put more and more acreage under food crops at the expense of other crops, especially cotton. If this trend gains momentum, which is very likely, then soon a situation might arise in which the production of food crops is in excess of the requirements and that of other crops far below the demand.

Any lopsided development of crops is bound to affect the economy of the country adversely. Side by side with food crops, we have also to encourage the production, of other crops, particularly those which feed our industries. In this context, cotton assumes great significance, as it sustains the country's foremost organised industry. Even at the current level of production we are obliged to import annually about 6 to 8 lakh bales of foreign cotton at a cost of about Rs. 60 to 70 crore in foreign exchange. Therefore, far from allowing any reduction, we should take steps to increase its production appreciably, which is possible if cotton, instead of being a competing crop, is made to fit in rotation with food crops by curtailing its duration as also by increasing its yield potential through adequate fertilisation and plant protection.

Barring a few types, like PRS-72 and P. 216F, all our cotton varieties are crops of long duration of 6 to 9 months. Obviously, the long duration implies larger frequency of irrigation and plant protection treatments which swell the cost of cultivation. Besides it involves a greater risk in exposure to adverse weather conditions and, above all, a longer wait for the farmer to realise his income. These disadvantages were hitherto overlooked by the farmers, as the net income from the crop compared favourably with that from other crops. However, with the introduction of high-yielding food crops, which fetch high returns to the farmers in less time and with less attention during the crop period, the situation has changed. The change has come over both the irrigated and rainfed areas.

One of the remedies is to reduce the duration of the cotton varieties to, say, about 4½ to 5 months. In addition to reducing the cost of cultivation, this would also make cotton suitable for multiple cropping, in rotation with wheat, gram, maize, jowar or paddy in different areas. If the time-lag permits, a short duration pulse crop could also be taken the same year.

Simultaneously, the yield potential of cotton should also be increased. One way of achieving this is to develop types of sympodial habit which would admit of closer planting. Most of the existing cotton varieties have a tendency to put on excessive vegetative growth without yielding more fruit. Plant types whose fruiting co-efficient is high, should be evolved.

The other two factors which are indispensable for increasing cotton production are fertilisation and plant protection. Both these should go together, as a fertilised crop invites more pests and diseases. It has been demonstrated in experimental plots time and again and corroborated by the experience of progressive farmers that by adequate fertilisation and plant protection, the yields could be at least doubled. This is true not only in the case of irrigated cotton, but of rainfed cotton as well.

These two inputs are not made available in time and their prices are prohibitive. The pinch is felt particularly in rainfed areas where the farmers, as a rule, are not as prosperous as those in the irrigated tracts, to afford big investments. It is because of the Government subsidies that plant protection chemicals are being used increasingly by the farmers but these artificial props cannot go on indefinitely. It is necessary for the manufacturers and formulators to reduce the prices of these inputs to a reasonable level, and also to organise their distribution and sale in such a manner that these are easily available to the grower. It may be noted that the prices of fertilisers in India are higher than in any other country.

Books

JAPAN'S SMALL INDUSTRIES

Small Scale Industries in Japan by Dr. Ram K. Vepa. Published by Vora and Co. Bombay. 237 pages. Rs. 16.

R.C. SAXENA

This study is based on the material collected by the author while participating in a programme sponsored by the Asian Productivity Organisation and the Government of Japan for studying the development of Japanese industry, specially the promotional measures taken to assist the small enterprises in Japan.

All through the book, specially in the chapters dealing with 'The Personnel Problems of Small Industries' and 'Some Lessons of Japanese Experience', the author is intellectually involved in the analysis of various problems of small-scale industries, specially its rationalisation and modernisation vis-a-vis industrial relations.

After giving a brief resume of Japan's geographical and historical antecedents, the author spells out various factors responsible for Japan's growth as an industrial power in the last 100 years and particularly in the 15 years beginning from 1945. He divides the development process of Japanese economy into periods of i) confusion, ii) restoration; iii) high grade development, and iv) the period of rapid growth when the Japanese economy became 'overheated'. He emphasises in detail the factors responsible for this growth, namely the promotional policies of the Government, like the financing, heavy reliance on exports, tax preferential measures, as well as the technological innovation within the industry itself. Changes in the complex of industries, specially the emergence of new ones applying sophisticated technologies and skills (e.g. the chemical and heavy industries) brought about the gradual dimunition of subsidiaries and made the small industries realise the need for their ability to innovate. This made a great difference in the quality of their final product and its marketability. Analysing the organisational aspect of the small industries both at national and perfectional level and the financing institutions set up to help the small industries, the author shows as to how the technical aggressiveness which was a feature only of large-scale industrie spassed on to small enrtepreneurs.

While making this analysis, Dr. Vepa also highlights the importance of the *sub-contracting system* in Japan which has been designed to cope with the competition in the domestic as well as international markets. There is a pyramidal layer of sub contractors in Japan spreading over four to five tiers. Dr. Vepa considers some of these contractors really *'captive'* to large enterprises.

While narrating the role of industrial estates in the strengthening of small and medium enterprises, Dr. Vepa considers that unlike India where the Industrial Estate is considered to be a power and prestige symbol, in Japan it is an emblem of organisational ability and team-work.

Dr. Vepa also enumerates various facets of management, marketing and other allied problems, namely persoonel management of the small industries in Japan, specially their wage system and the fringe benefits which according to him account for 50 per cent of the pay roll of workers as compared to 25 per cent in U.S.A. He also discusses the problems of excessive competition with large business enterprises, tight financing, obsolete equipment and poor management etc. and offers some suggestions and improvement.

The book is, no doubt, a valuable contribution to the meagre literature on small-scale industries.

CHANGES IN AGRARIAN STRUCTURE IN DEVELOPING COUNTRIES

S. P. SINHA

An unsatisfactory agrarian structure, particularly of land tenure, tends in a variety of ways to impede economic development of an underdeveloped country. The impact of an agrarian structure is by no means the same in all countries. In vast regions of Asia and the Middle East, the agrarian structures have reduced the farmer's living standard below the level which might have been attained even with the existing methods of cultivation, and have stood in the way of any long-term increase in productivity because they prevent investment by reducing both farmer's income and incentives. In the sparsely populated countries, the agrarian structure hinders better land utilisation, prevents a more intensive use of land resources and increases the risks of overcropping and soil erosion.

As development forces modify the technical and institutional structure of traditional agriculture, the pattern of share tenancy begins to restrain, rather than stimulate, growth of agricultural output. To enable the farmer to introduce new inputs such as improved seeds, fertilisers, insecticides and mechanical equipment and improved farm management sysems, the traditional tenure system has to be modified to provide market incentives, if the economy is to realise the full potential inherent in the new technology. Land reforms, as a measure of promoting economic growth has therefore to be followed by a suitable change in the entire institutional framework. Examples from Mexico, Nepal, Japan and Pakistan will illustrate how the emergence of the new forces of peasant proprietorship or the organisation of co-operative farming methods has introducd new incentives of investment and growth in agriculture.

MEXICO

The Mexican reform was not, like the recent Asian reforms, a mere transfer of the ownership of land from large estates to the tenants who cultivate those lands. It was intended primarily to be a reform of the conditions of agricultural labour. It involved distribution among farm labourers of the land previously owned and operated by large estates. It therefore necessitated a change in the scale of farm operations as well as a change in ownership. In fact the holdings intended to provide subsidiary occupation to farm labourers have tended to become independent farm units, and, as such, too small in area. A large number of 'eqido' farms have insufficient land. Shortage of credit was a major obstacle to increasing production on these holdings. The division of large estates, insofar as they were intensively cultivated and irrigated, into small units proved to be economically disadvantageous, and new forms of co-operative and collective farms had to be introduced.

The Mexican experience has shown that land reform measures can bring great social benefits to the farm population. If agrarian reform is to be successful in economic terms, it must form part of a general scheme for agricultural development involving the provision of credit facilities, organisation of production co-operatives and, under Mexican conditions, resettlement of farmers in new areas. Also, the Mexican experience is significant for over populated countries; it shows that land reform can improve the conditions and status of farmers and raise the rural standards of living, but it is not likely to provide full employment opportunities where the population is increasing at a rapid rate. The expansion of production, which results from these measures, may not be large enough to absorb additional labour. The intensification of production depends in large measures on the supply of credit and market position. In the conditions which prevail in Asia, the change from tenancy to ownership and the improvement in the farmer's standard of living will be only temporary if the land reform is not accompanied by other measures for raising living standards and productivity. If the new owner's farm is of uneconomic size, if he is unable to obtain credit on favourable terms or cannot get fertilisers and equipment at prices within his means and if he does not get a fair price for his produce, he cannot invest in his holding and inevitably again falls into debt. It is also equally true that without such fundamental reform of tenure, other efforts to increase capital investment in the land are likely to remain ineffective.

NEPAL

The success of economic development in a land-based economy like that of Nepal is substantially based on proper land reform measures. Generally speaking, the objective of land reform should be a progressive economic and social organisation that will reduce disparities in wealth and income, eliminate exploitation, provide security for tenants and farm workers and promise equality of

status and opportunity to different sectors. Until 1951, under the feudal rule of Ranas, land reform did not receive the attention it deserved. Various economic, social and political factors combined to produce an inadequate and exploitative land system which killed the initiative, hampered economic growth and led to inequitable distribution.

In 1952, rentals of agricultural lands were announced to be limited to one-fourth of the gross produce of the land. Similarly, it was announced that no tenant of land, cultivating on either crop-share or cash-rental basis, should be evicted except through the process of law. However, the Land Reforms Act, 1957, under which ceiling on rent from land has been fixed at 50 per cent of produce, stlll remains unaffected. In July 1959, the Government announced that the Birta Abolition Act would be enforced from the budget date of 1959-60. With the abolition of the Birta land, the Government has acquired proprietary rights over Birta holdings. The Finance Act of 1959 also provided a rateable scale and tax in proportion to land revenue. Theoretically, it has been a most progressive piece of legislation for land reform in the country to break up the unmanageable holdings into a number of manageable and consolidated holdings.

Land reforms policy in Nepal seems to have covered three basic aspects—ownership, management and operation of land. Regarding the ownership, the individual peasant system is preferred to other systems. The recent step to abolish the Birta system has removed the feudalistic exploitation of peasants and has provided security to the tenants. The problem of land management is to be entrusted to the village panchayats, recently set up in different parts of the country. The operational part depends upon the size of the land holdings and growing number of the landless class. All tenants cultivating land will have to be given occupancy rights.

In 1962 the Royal Land Reform Commission recommended an efficient system of land administration, recording tenancy rights and extending facilities of rural credit. The Government's intention is to divide the land among the people in a just manner by means of institutional reforms and to induce the private sector to undertake technological reforms.

The land reform measures, coupled with the economic aids, have resulted in increasing the export of surplus food from the *terai* regions to India; the exports went up from Rs. 4.5 crore in 1957-58 to Rs. 9.6 crore in 1959-60, more than doubled. The second five year plan of Nepal proposed to increase agricultural production by 16 per cent, both by introducing intensive techniques of production and by bringing more land under cultivation. Efforts are being made to strengthen the roots of peasant proprietorship, with a view to inducing farmers to invest more in inputs and progressive methods of cultivation.

PAKISTAN

Agricultural production has shown progress in Pakistan. Taking the average of 1949 50 to 1952-53 as 100, the production of all crops increased to 108 in 1958-59 to 117 in 1959-60, to 131 in 1961-62 and further to 136 in 1963-64. In 1966-67 the growth rate was 3.1 per cent which conceals a much higher increase of 5 per cent in West Pakistan, partly counterbalanced by a slower increase of only 1.5 per cent in East Pakistan on account of floods and droughts.

The population of Pakistan has been increasing at the rate of 2.6 per cent every year and to feed these increasing numbers in the face of stagnant agricultural production was a challenge which had to be met. It was realised that the defective land tenure system was the reason for the stagnation. Therefore, far-reaching and long awaited land reform measures were introduced as a prerequisite for the healthy and steady growth of agriculture. A ceiling on holdings was fixed at 1000 acres for non-irrigated lands and of 500 acres for irrigated lands. Most of the excess land surrendered under these reforms has been distributed among cultivators. These land reforms have done a great deal to change the antiquated agrarian structure and have helped to increase production and improve the living conditions of the people.

JAPAN

In Japan, apart from the adoption of the intensive methods of production on a large scale, the successful implementation of the land reform measures has been the most important factor for strengthening the base of agricultural development and producing incentives for investment. The agrarian reform legislation made by the Japanese Diet in 1945 authorised the Government to purchase land at low prices from absentee land owners and others holding excessive lands. They were paid in 24-year annuity bonds bearing are annual interest rate of 3.65 per cent. The Government then resold the lands to tenants at pre-war values payable in 30-year instalments with 3.2 per cent annual interest. Nearly a half of Japan's farm land was tenant-cultivated before 1941. But within three years of the reform, 92 per cent of the cultivating peasants became owner-cultivators.

Japan is traditionally a country of small farms. There is almost no large-scale farming or animal husbandry. The average size of a cultivated unit is two acres. The intensive methods of farming require much skilled labour and fertiliser. Mechanisation has found favour with the Japanese farmers to counteract the growing shortage of rural manpower and skills. The recent policy is rather in favour of consolidating small farms into large ones, leading to diversification of farming, capable of developing without expensive subsidies. The Agricultural Land Act of 1952 severely limited the amount of land an individual could own; but the 1962 amendments empowered elected Village Agricultural Committees to allow farmers to exceed the 1952 ceilings on land-ownership if they used the labour of family members. As a result, since 1962 the number of farmers running independent agricultural enterprises has been increasing. By mid-1964, more than 4900 instances of co-operative work have been reported.

Thus land reform in Japan has introduced a change in social status, political power and wealth, as well as land ownership. It has led to political and social democracy. Traditional class differences in the villages have been narrowed and sufficient incentive has been provided to improve productivity by additional investment and co-operative efforts.

INDIA

In India sweeping generalisations have been made with regard to agricultural growth. One of them is that agriculture has been stagnant and that nothing much has happened in the last seventeen years. Another is that if only the investment allocation for agriculture in the Five Year Plans is increased, there will be a significant increase in output. Both are incorrect.

Agricultural production in India grew at a linear rate of about 3.25 per cent a year and at a compound rate of 3 per cent between 1952-53 and 1961-62. There have also been considerable regional differences in performance. For instance, agricultural production has grown at the compound rate of about 5 per cent a year in the Punjab and 4.25 per cent in Madras, but at only about 1 per cent in Orissa and less than 1 per cent in West Bengal. The higher rate of growth in Punjab and Madras is, of course, due to greater intensification of agriculture and availability of water-supply; but it is also accounted to a great extent by the prevailing *ryotwari* system of land tenure that encourages the farmers of the two States to adopt new methods and to invest larger funds in farming.

Raising productivity of land requires not only more inputs like labour, water and fertiliser but incentives to make these inputs worthwhile. Prices and the tenure system are the two most important factors influencing incentives. Although, a great deal of land legislation has been undertaken in India in the last two decades, and in part enforced, a large production of the cultivated area is still under tenancy, and, the rents are generally much higher than the legally-stipulated ceilings. In fact the land legislation has led in many regions to driving underground some forms of tenancy and promoting informal and oppressive crop-sharing arrangements between the landlords and the tenants. The high pressure of population on land makes it possible for land owners to impose such arragements on the landless agriculturists, and both the sociology of rural areas and the balance of political forces in the countryside made it difficult for the latter to secure the rights which they are entitled by the law.

The high rents in force in these areas operate as a serious disincentive for tenant cultivators to apply inputs to the extent desired. In the irrigated and more fertile areas of the country, rents are as high as 50 to 60 per cent of the gross produce, or more. As pointed out by Wolf Ladejinsky, there are not even complete records of land holdings in many regions of the country and oral leases can, therefore, flourish, and no administrative check-up is possible.

Thus, a wholly technocratic approach is not likely to produce any substantial result in agriculture. Some of the recent farm management studies conducted in the Tanjore district of Madras have shown that, with rents as high as 60 per cent of gross produce, tenants can spend for only about a third of the package inputs considered optimal from a technical point of view. The increases in output are correspondingly lower. If, however, increased supply of the required inputs is combined with a minimum number of institutional measures to improve the responsiveness of producers, there is no reason why a higher rate of growth, say 5 per cent, should not be achieved within a short period.

What is necessary now is, therefore, not a further extension of land legislation on more radical lines but a precise determination of measures required to accelerate agricultural development and a determined approach for implementing them.

Local land commissions should be organised in the rural areas to administer the land reform programmes. In Japan, such commissions were organised by the legislature in such of the 11.000 villages, and were entrusted with the actual purchase and sale of land.

Land reforms are to be followed by immediate steps for the consolidation of holdings and initiation of co-operative farming. Co-operatives in general have now become largely a means for the well-to-do farmers to obtain the facilities provided by the development programmes at subsidised rates. This has got to be removed and the co-operative programme reoriented to help the weaker sections of the community. The Mexican experiment is a good guide in this respect.

PLANTS ARE HIS BABIES

SHYAM SINGH of village Netri, in Polura Block Uttarkashi, is one of the most admired farmers of his place. Last year he harvested 181 maunds of paddy per acre.

Shyam Singh nurses his plants as if they are his own babies. He does hoeing and interculture operations with his own hands and does not use implements lest they injure the young plants.

He has laid out his nursery with 4½ kg of coarse paddy V.L. 8 (R22) at a height of about 4,000 feet above sea level.

After 70 days, he transplanted these plants at a distance of 3″ to to 4″ from each other in a plot measuring a seventh of an acre.

His plot, which has clay-loam soil rich in humus, was well puddled after four ploughings.

Before puddling Shyam Singh buried 15 maunds of green leaves of 'Banjh' tree and 'Bhang' into the field as green manure. This was followed by the application of 60 maunds of compost during the second and third ploughings.

For the basal dressing of his field, he used a mixture of 50 kg rock phosphate and 50 kg U P. Fertilizer Mixture No. 2 (N:P:12:6).

After 6 weeks of transplanting, he sprayed his plants with 10 kg Calcium Ammonium Nitrate.

CONSUMER GOODS ARE TAKING BIGGER SHARE IN RESOURCES

PRADHAN HARISHANKAR PRASAD

THE need for departure from an era of *laissez-faire* arises because of the fact that the actual flow of resources in different sectors of the economy in a *laissez-faire* system is different from the desired one. The advocacy for such a departure, in the past, has usually been based explicitly or implicitly on the argument that the actual flow favoured the non-wage earners as against the wage earners. The existence of unemployment which is attributed to the flow of resources leading to under-capacity utilisation of the material means of production was another reason for this departure.

The emphasis, of late, seems to have shifted from distributive and employment aspects to growth aspect, specially in the context of underdeveloped economies. Attempts have often been made to prove that the distributive and growth objectives are, mutually contradictory, at least, in the initial stages of development.

It is needless to emphasise that one of the significant objectives before underdeveloped economies, such as ours, has been to increase the rate of growth of capital so as to achieve an increasing per capita capital and consequently an increasing per capita real income and employment in the economy. Important as the 'micro-perspective' is, quite a number of issues in planning can be discussed (at least to begin with) in abstraction from the 'micro-perspective'. The sectoral flow of resources is one of such issues. This prompts me to discuss this problem in a 'macro-perspective.'

INVESTMENT FLOW

It was Mahalanobis who, borrowing heavily from Feldman, attempted to answer the question regarding the flow of investment in different sectors of the Indian economy. He divided the economy into two sectors—the capital-good sector and the consumption-good sector. According to his formulation the rate of growth in the economy is determined by λbk, that is, the rate of growth of investment, where λ is the fraction of investment flowing to the capital-good sector and bk is the output-capital ratio in the capital-good sector. It was assumed that λ could not be greater than 1/3 in the conditions that prevailed during the Second Plan period. It was also thought feasible that investment co-efficient could be stepped up to 11 per cent by the end of the Second Plan and to 14 per cent by the end of the Third Plan. This led, since the beginning of the Second Plan, to an emphasis on heavy industries, that is, industries producing capital goods.

CERTAIN QUESTIONS

While the achievements during the Second Plan period remained below expectations, the achievements of the Third Plan have been positively depressing. The economy today is in the grip of inflation co-existing with industrial recession. All this raises certain significant questions. One such question is—can this failure be attributed also to the emphasis on heavy industries during the Second and the Third Plan periods? Should there, henceforth, be an increased emphasis on consumer-goods sector at the cost of capital-goods sector ?

I begin my analysis by accepting the Leibenstein-Wonnacott thesis about wage-productivity relationship which implies that, in underdeveloped economies, real wage per labourer (except for a minor percentage) is below the real wage which gives minimum cost per work unit. This means that any attempt to reduce the real wage below the level which gives minimum cost per work unit will eventually result in reduced rate of profit and, hence, the reduced rate of growth of capital.

If we designate the basket of goods which is consumed by the labourers (whose wage is either equal to or below the level which gives minimum cost per work unit) as wage-good, the economy, then, is divided into three sectors, namely the capital-goods sector, the wage-goods sector and the luxury (non-basic-consumption) goods sector. Thus, there are three proportions, λ, a_1, a_2 symbolising respectively the proportions of investment flowing in the capital-goods sector, the wage-goods sector and the luxury-goods sector. It is needless to emphasise that the rate of growth of capital as well as the growth of the economy is an increasing function of λ and a_1. Since, $\lambda+a_1+a_2=1$, it means that the lower the value of a_2 the higher is the rate of growth of the economy. Thus, *the strategic requirement for development and growth in an underdeveloped economies, such as ours, is the reduction in the production of luxury goods.*

A little reflection of the experiences of a decade and a half of our 'so-called' planning will show that we have neglected this aspect of the developmental planning at our own peril.

LUXURY ARTICLES

There has been a steady increase in the flow of resources in the non-basic-goods sector during all these years. We find that the increase in production of some such commodities during the Third Plan period, 1960-61 to 1965-66, has been as follows :—

Domestic refrigerators 172 per cent, radio receivers 116 per

cent, water coolers 68 per cent, cosmetics 67 per cent, plastics 400 per cent, air conditioners 16 per cent, cars, jeeps and station wagons 30 per cent, motor cycle and scooters 131 per cent and steel furniture 62 per cent.

On the other hand, during the same period, there was hardly any increase in the output of wage-goods. Imports of perfume materials and toilet goods accounted for Rs 18 lakh in 1964-65. The value of import of some such luxury products (in lakhs of rupees) has been of the following magnitude over time :

	1950-51	1964-65
1. Dairy products, eggs and honey	508	1,036
2. Fish and fish preparations	24	336
3. Fruits and vegetables	951	2,589

On the other hand the import of alcoholic beverages increased by 33 per cent, while the increase in case of silver, platinum, gems and jewellery have been 74 times in one year alone in the year 1964-65. During the half year period ending November 1966 the value of some of the imported non-basic goods, namely, photographic and cinematographic supplies, beverages, tobacco, road motor vehicles, dairy products, eggs and fruits was about Rs. 33 19 crore.

SMUGGLED GOODS

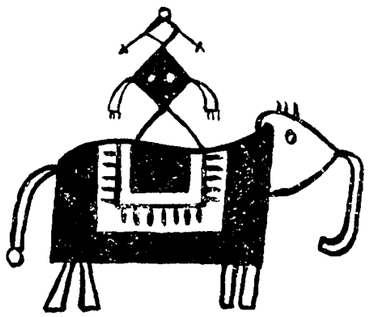
The value of non-basic products smuggled into the country annually must also be running into crores of rupees.

The increasing production and consumption of non-basic commodities can also be attributed to the government policy regarding production of services in this country. There has been, during the decade and a half, a relatively greater increase in the use of non-basic commodities in the production of services, such as airconditioning and luxurious furnishings of government buildings, expenditure on embassies and foreign delegations and television and radio stations.

IN AMERICA

As against this, I am tempted to quote from Chester Bowles—"Although visitors to developing countries are often impressed by the number of new building projects which surround many cities, a closer look would reveal that most of the buildings are for upper middle-income families while the needs of the slum dwellers are largely ignored. Yet when asked why the slum problem is not tackled more boldly, many planners answer, 'Because there isn't enough cement, bricks, and lumber'. When we faced a comparable situation in America during the war, we put first things first. If some families had to move in with their mothers-in-law, we determined that it should be those who already had the most space. Therefore, regulations were established which provided that no home could be built that cost more than $6,000; and no commercial or government building could be constructed with scarce building materials unless it could be demonstrated that it contributed to the national welfare. If developing nations were to adopt an equally egalitarian approach, it has been estimated that the existing amounts of cement, lumber and steel would provide clean, adequate new housing with running water for five or six times as many families and at the same time create additional jobs for tens of thousands of workers."

The distinction between the basic consumption and non-basic consumption has not yet been appreciated by our planners. Failure to distinguish this has cost us dear.



Looking Back

Yojana April 20, 1958

MORE than 3,000 labourers working in different factories in Jammu and Kashmir will be able to get free education within the factory premises. According to a plan finalised by the State Government, these labourers will be released for two hours daily to enable them to attend classes. The entire cost will be borne by the Government. Every child labourer attending the classes will be paid Rs. 5 as pocket money.

The State Government has already established two Labour Welfare Centres (one in Jammu and the other in Srinagar) in the State to provide recreational and other facilities to industrial labour. Many more centres are to be started during this year.

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VOTING BY BRAILLE

ABAC, an association for blind students, was founded in Sao Paulo by Mrs Lelia Vellini Achon in 1942. This association has done yeoman service to the blind by helping them to take their rightful place as members of society. Through this ingenious invention, the blind can now exercise their voting rights as correctly as any other person, and without the help of a guide.

During the 1960 elections in Sao Paulo, 5,000 special voting cards were printed in the ABAC Press, and distributed to blind citizens. Each card was in fact a template, which the blind voter fitted over his voting paper. On the right were given the names of the candidates, embossed in braille. Against each name a square hole was punched corresponding to the box on the voting paper. All that the blind voter had to do was to 'go-over' the list of candidates, and put his cross in the appropriate punched hole.

RURAL CULTURE IN POLAND

VILLAGERS in Poland, who constitute almost a half of the total population, take a keen interest in cultural and art activities. Their social life is chiefly centred round the village culture clubs which are 12,000 in number.

The television and the radio are the chief media for propagation of mass culture. At present, there are more than 580,000 television sets in the countryside, and this number is on the increase.

The number of permanent and mobile cinemas in the rural areas is about 3,000 and the number of cinema-goers about 30 million. People from more than 40 per cent villages on an average can see films screened in their locality.

A Polish villager, like his countrymen in urban areas, is highly interested in the activities of the Polish theatre.

Guest performances of theatrical companies in the countryside and mass excursions of villagers to the theatres in the towns are a regular feature in the country.

Polish villages have also a network of libraries, and book lending centres, which have about 21 million books. More than 28,50,000 readers in the villages make use of these libraries.

HANOVER FAIR

THE world-renowned Hanover Fair will begin its nine-day run on April 27 this year. More than 5,500 exhibitors from about 30 countries will take part in it. The emphasis of the display, will be on the most representative ranges of capital and consumer goods to be seen anywhere.

The Fair will be an essay on the latest technology and production techniques.

In just twenty years a purely German export show has become an international market-place and a point of contact and assembly for world trade, commerce and industry.

Some 736,000 visitors appeared at the first export Fair in Hanover in 1947, but only about 4,000 of them came from outside Germany. Last year some 46,500 tickets were sold to foreign visitors alone.

SPEAKING OF BILLIONS

IN spite of the Viet Nam war, economic recession, the Negro problem, and domestic political warfare, America never fails to produce four things : millionaires and motor cars; film stars and sky-scrapers. Indeed, everything about the United States is so big, that it often passes comprehension. Particularly baffling to the people of a poor country like India are the "millions" and "billions" of dollars in which the United States Government and the more affluent people in America calculate their spending. To add to this confusion, a "billion" means different things in different countries. For instance, it is not in Britain what it is in America. And, for the mere Indian, counting in another measure, the confusion is most disconcerting; and we very often get lost in the maze of zeros that go to make a billion look really big.

To be able to visualise how much money a "billion" U.S. dollars really amounts to, an American journal has worked out this explanation.

If a housewife goes shopping 40 hours a week, spending $1,000 an hour, it would take her 25 weeks to spend $ 1 million. If she followed the same schedule, spending a billion dollars would take her 481 years. How's that for an explanation?

Or, another way to tell the difference between a million and a billion, at the same rate of spending, it would take a housewife 158,009 years to spend the equivalent of the U.S. national debt.

On the other hand, who would want a wife that is 158,009 years old?

And now you know how much a "billion" really amounts to. So work it out for yourself when you read in the newspapers how much America and the Americans spend.

IGNORAMAN

Wants to Know

If India can afford
inputs for both
Culture and Agriculture

Regd. No. D-876

WHEN THE HARVEST RIPENS TO GOLDEN YELLOW, then comes the time to separate the grain from the chaff. The more plentiful the harvest, the bigger the job and happier the farmer. First the crop has to be carried from the fields to the farmstead (above) ; and then, to the joyous rhythm of music, the threshing begins (below).

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YOJANA

TWELFTH YEAR 8 APRIL 28, 1968

YOJANA

Fortnightly Journal published on behalf of the Planning Commission

Vol. XII No. 8

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Vaisakha 8, 1890

LEST WE FORGET

"We want to have more steel plants.....Unless one has these basic things, one cannot industrialise a country. We want to industrialise India."

Jawaharlal Nehru

Cover designed by R. Sarangan

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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STEEL FRAME OF ECONOMY

THE formal inauguration of work on the Bokaro steel project earlier this month is yet another landmark in the country's industrial development. The project, the fourth of its kind in the public sector, sharply underlines the growing strength of the steel-frame of the Indian economy. This is particularly relevant on account of the view that has been expressed in certain quarters against the launching of the Bokaro project. To set the record straight, let it be noted that Hindustan Steel Limited, which manages the steel plants in the public sector, has made a significant contribution to the country's economic development. So far, it has sold iron and steel worth 1,380 crore rupees; after deducting the cost of imported material and spares used for its production as well as the value of exports, has saved the country an estimated 983 crore rupees worth of imports. It is also true that without the steel produced in the public sector, the engineering industry could not have achieved phenomenal progress, neither could there have been an expansion of the railways nor would so many irrigation projects been executed. All these are significant gains.

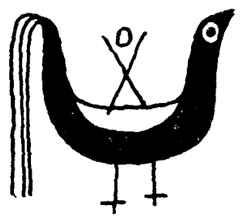
There is, nevertheless, the question whether Hindustan Steel has done all that it could or should have done in the circumstances. The cumulative loss of 120 crore rupees that Hindustan Steel has incurred is a distressing feature of its working. For an industry which accounts for 36 per cent of the total investment in the public sector, excluding the railways, it has failed to yield adequate surpluses. Recession and a cut in Governmental expenditure have no doubt been responsible for most of the troubles of the public sector steel plants. But their greatest weakness has been in the sphere of management.

Of the many ills that have afflicted the Hindustan Steel plants, the one which has caused the most damage is the lack of managerial skill almost at all levels. In the absence of professional and trained managers, and because of the inherent shortcomings of bureaucratic control, the steel plants have failed to give adequate returns. The image of the public sector has been further blurred by the enormous losses that Hindustan has incurred, together with the shortfall in production despite an addition to capacity.

One hopeful development, as far as the future of the steel industry is concerned, is that further expansion will be possible without foreign collaboration. This is because 80 per cent of the entire equipment for the steel plants can be produced at home by the Heavy Engineering Complex and Heavy Electricals. We have also the necessary skills and the requisite knowledge and experience to do the job. At any rate, there is urgent need for the expansion of the steel industry, and obviously this can only be achieved in the public sector, which alone is capable of raising the necessary resources for it.

AGRICULTURE SHOULD HAVE HIGHEST PRIORITY IN PLANNING

TILL OUR PRODUCTION REACHES HIGHER TARGETS PROCUREMENT MACHINERY HAS TO BE TONED UP TO BUILD LARGER STOCKS AS A PRELUDE TOWARDS LARGER OPEN MARKET CIRCULATION



MADRAS CHIEF MINISTER

OUTLINES HIS VIEWS

FOR YOJANA

THE story goes that Lord Buddha once paid a visit to a city which was in the grip of a severe famine. He sent for all his disciples to ascertain if any of them could undertake the task of feeding the hungry people. Among them the top businessmen merely lowered their heads without any response. A frail-looking woman stood up and appealed to Lord Buddha to give her a chance to undertake the onerous task. She said, "Lord, my granary is full. It is not in my house, but it is in all the houses of my brethren". She was emphasising a simple point—equal sharing of available grain supplies by one and all.

It is this principle of equality of sacrifice which has to be understood by one and all, both individuals and States, in a country where population is over-reaching the means of subsistence, if we are to find an immediate solution to our food problem. Of course, the long-term solution of the food shortage in the country lies in increased production—not only of cereals but also protective foods like vegetables and milk. Besides, the achievement of a satisfactory level of balanced diet for each citizen will always have to be the major plank of any country's development. The immediate problem is, however, the proper husbanding of available resources so as to ensure their equitable distribution among all sections of the population. This will perforce have to engage the attention of both the Central and State Governments in the next few years,

FOOD CONTROLS

The country passed through an era of food controls during the Second World War. These were later relaxed leading finally to complete decontrol. By 1952, a partial decontrol was attempted. For the first few years of this decade there was no restriction on the movement of foodgrains except rice. In the case of rice four zones were created in order to ensure regional self-sufficiency. Since 1965 the regional zones regarding rice have been abandoned in favour of the State zones in the South.

The measures adopted for regulating distribution of foodgrains have all been in the nature of palliatives recommended by various Commissions and Committees from time to time without any attempt to prospective planning of food control over a period of time. Perhaps, it was not possible. It is, however, true that a massive food assistance from abroad has alone kept the country away from starvation. To this must be added the forbearance and sacrifice of people in deficit pockets.

PROCUREMENT

But now there is an element of uncertainty in the quantum of import from abroad. Apart from a sentimental approach to that question, a solution can be found, in my view, only by a hard core of procurement of foodgrains in all States and Union Territories on the principle of equality of sacrifice.

Madras is just self-sufficient in rice only when the harvest is good. It will be equally true to say that it is marginally deficit. The State Government's policy is to have a commanding position over stocks of rice.

This has to be done by every State with a procurement system directly focussed on the producer, the object being to buy the major portion of the marketable surplus, exempting small landholders completely from an obligation to sell the surplus to the State. This policy is followed in Madras State now.

I would like to mention, in passing, that Madras State is surplus in rice only theoretically, that is only in a good year; and good years do not come always. It will be more correct to say that the State is just self-sufficient in rice in a good year. I am mentioning this, to root out the impression that it is normally marginally surplus in rice. It will be equally true to say it is marginally deficit in rice. We have been sparing Kerala rice in fairly large quantities in times of need, with reference to requests from the Centre, and if, at times, we have not been able to comply with such requests, it is just because we have not immediately anything to spare.

In millet, it is clearly deficit and we have, therefore, given up trying to procure it. Still some small quantities of millet are being given to adjoining deficit States.

SUPPLY AND DEMAND

Madras Government's policy is to have a commanding position over stocks of rice, because the market mechanism cannot be depended to strike a satisfactory balance between the interests of producers, traders and consumers. Realising that in a free economy, the law of supply and demand is a very powerful economic law, we are trying to procure as much as possible from the producer and distribute it to the vulnerable sections of the population. This again is the basis of the "One rupee a measure scheme" because I believe firmly that in a country like ours where the elasticity of demand for foodgrains is insignificant and cereals account for no small part in the poor man's family budget, any marginal shortage of the staple food of the region will lead to a disproportionately high rise in the prices of other foodstuffs; and our food habits die very hard.

This year's crop prospects should not hasten towards relaxation of controls because it will be placing too much trust in the conscience of the trader.

The price offered to the foodgrains will have to be remunerative enough for the producer, in that it should take into account the increasing cost of inputs, but more than increasing the price of the producer it will have to be the Government's effort to give incentives to the producers, in the form of subsidies for agricultural operations.

The procurement of foodgrains from the producer under different systems should not also, in my view, be looked upon as infringing on the producers' rights. To part with his surplus to the extent he can should be considered as his social obligation in the larger interests of the country. In the same way, procurement both in surplus and deficit areas should continue as it introduces an element of equality of sacrifice on the part of the producers. The interests of both the producer and the consumer should be kept equally in view in any scheme of procurement and distribution.

To my mind the only solution seems to be, as I said before, a competent machinery of procurement and also a gradual reduction of the commitments under public distribution system after building up some sizeable buffer stocks so that as and when food production gathers momentum it will be possible gradually for the State to undertake less and less to distribute under its public distribution system.

This year's crop prospects seem to be good but this alone should not hasten ustowards thinking in terms of complete relaxation of controls, because this will be placing too much of a trust in the social conscience of the trader. On the other hand, in this year of sizeable production of foodgrains, the system of procurement and public distribution which are already being followed, will have to be placed on a firmer footing.

I would therefore, by and large, advocate the continuance of the State Zones and the toning up of the machinery of procurement leading to larger stocks as a prelude towards larger internal open market circulation till our agricultural production reaches higher targets. More and more agricultural production has to be the keynote of the State's policy and has to get the highest priority in the State's planning, if the food problem is to be solved satisfactorily.

ANNADURAI ADVOCATES CONTINUANCE OF STATE FOOD ZONES

The producer should consider it his social obligation to the country to part with his surplus.

The interests of both the producer and the consumer should be kept equally in view in any scheme of procurement and distribution which have to be placed on a firmer footing.

India's Biggest Steel Plant

WORK BEGINS ON BOKARO PROJECT

Bokaro is not merely a replica of existing steelworks. It is a distinct addition of a new type to fulfil the urgent needs for flat products.

THE foundation of the first blast furnace of the Bokaro Steel Plant was laid by the Prime Minister, Mrs. Indira Gandhi, on April 6. With this India has taken another step towards industrial self-sufficiency.

The Bokaro steel plant will be the sixth major steel plant in India and the fourth in the public sector. In its ultimate capacity, it will be the biggest steel plant in the country.

The steel plant, will have an initial capacity of 1.7 million ingot tonnes of steel, which will be rolled into about 1.4 million tonnes of finished steel products such as plates, sheets and coils. India is at present short of these flat products and is spending valuable foreign exchange to import them. Besides these flat steel products, Bokaro will produce, in the first stage, 8,80,800 tonnes of pig iron.

Necessary built-in capacity is being provided in the different units for expansion of the plant's capacity to 4 million tonnes of steel ingots in the second stage and further expansion to 5.5 million tonnes later. The present capacity in the public sector is 2.5 million tonnes at Bhilai, 1.7 million tonnes at Rourkela and 1.6 million tonnes at Durgapur. As against a total outlay of Rs. 1050 crore on all the existing steel plants in the public sector, Bokaro will claim Rs. 670 crore (Rs. 620 crore for plant and Rs. 50 crore for off-site facilities) in the first stage and about Rs. 1100 crore when it reaches its ultimate capacity.

This plant is being built with the collaboration of the Soviet Union. The Soviet Government has extended a credit of 200 million roubles for meeting the foreign exchange cost of the first stage. Soviet organisations have prepared the detailed project report and working drawings for shops and units and are assisting Indian organisations in construction work. Indian technicians are being given specialised training in the USSR.

Already about 100 Soviet specialists and interpreters have been at the site to help the Indian engineers in the execution of the work according to strict specifications. The number of Soviet specialists at the peak of construction will go up to 450.

There will be maximum participation of Indian organisations in the designing of the works and the supply of equipment and materials. While in the construction of 1 million tonne stage of Bhilai as much as 80 per cent of equipments and materials were of foreign origin, in Bokaro only 35 per cent is foreign and 65 per cent Indian. Out of the total amount of structural steel works required, about 90 per cent will be indigenous, while in the case of refractories, our own supplies will be as high as 96 per cent.

The Bokaro Steel Limited has already placed orders for plant, equipment, structurals and precision instruments on the Heavy Engineering Corporation, Ranchi; the Mining and Allied Machinery Corporation, Durgapur; the Heavy Electricals Limited, Bhopal; the Bharat Heavy Electricals Limited, Hyderabad, Tiruchirapalli and Hardwar; and the Instrumentation Limited, Kotah. For fabrication and erection of structurals, orders have been given to the Hindustan Steelworks Construction Limited, Calcutta, which, in turn, has already awarded contracts for over 97,000 tonnes.

In the first stage, Bokaro's main units will be four coke oven batteries with 69 ovens in each battery, a sinter plant with an annual capacity of over 4 million tonnes, three blast furnaces each capable of producing over 2,500 tonnes of foundry iron per day, a steel melting shop with four oxygen-blown convertors each with a capacity of 100 tonnes, hot and cold rolling mills, and a by-products plant.

The site-levelling was launched at Maraphari, the original name of the Bokaro steel city, by the Hindustan Steelworks Construction Co. Ltd. (HSCL), a job in which at one time nearly 20,000 people, 1,000 trucks and lot of other machinery were employed.

While the site clearance work was in full swing, on May 3, 1966 contracts were signed between the Bokaro Steel Ltd. and the Tiazpromexport for the supply of working drawings, equipments and materials from the USSR for the first stage of the project. It became known at that time that out of the total of 292,000 tonnes of equipment and materials required, the USSR would supply approximately 106,000 tonnes, while the rest would be obtained indigenously. Another thing that stands out about Bokaro is the participation of Indian organisations in the designing work of its units—out of a total of 286 units they are responsible for designing 123 units.

Site-levelling work at Bokaro has almost been completed and civil engineering work has begun in most of the zones. Against the contract concluded with the Soviet Union for the supply of 1,77,166 tonnes of equipment, steel structurals, refractories and pipes, 17,626 tonnes of equipment and material had been received by the end of January 1968. Deliveries of plant and equipment are to be completed by July 1970.

CONSTRUCTION WORK

The civil engineering activities at Bokaro were started after the completion of a major part of site-levelling in October last year. Nearly 13.5 million cubic metres of earth work has been completed. The work on pouring concrete in the foundation was started in January this year. The work of foundation preparations has been going on smoothly at the blast furnaces, coke oven plant, power plant, sintering plant and auxillary shops.

About Rs. 90 crore have been spent on the project so far. According to the present schedule, the first blast furnace will be commissioned in September 1970. The entire first stage of the plant will be completed by the end of 1971 at a cost of Rs. 670 crore, including Rs. 50 crore. The first blast furnace is expected to go into production much earlier, in September 1970.

BIGGEST STEEL PROJECT

According to the present estimates the first stage of the Bokaro Plant will cost Rs 620 crore out of which the main plant and equipment worth Rs. 158 crore will be supplied by the USSR. With the addition of some more units, which have already been planned according to the Detailed Project Report, the plant could be expanded to 4 million tonnes annual capacity comparatively at a lesser cost and in a shorter time. According to present estimates, for expansion to 4 million-tonne capacity Bokaro will require an additional investment of Rs. 300 crores, and the construction time of 3 years. But the Project has been so designed that it could be further expanded to 5.5 million tonnes.

The Bokaro steel project is primarily based on the ready availability of coal from the nearby mines at Bokaro and Zaria. Washed coal from the adjoining washeries at Kargali and Dugda will be initially delivered by the railways, but provision has been made for establishing rope-ways during the second stage. Iron ore will come from Kiriburu and Megahatburu mines in the Bonai range, limestone from Bhavanathpur and Hirri. Quartzite is to be supplied from Satanpur deposit and manganese ore from the Barbil region.

The power needs for the plant are estimated at 237 MW in stage I and 323 MW in stage II. The works thermal power station is to run on blast furnance gas, and also middlings from coal washeries. It will generate 97 MW in stage I and 120 MW in stage II, and will be cheaper in cost than the power supply to be taken from the Damodar Valley Corporation's power system. Water will be supplied from the Tenughat reservoir on the Damodar river and the Garga river dam.

At present the Bokaro project has some 3,600 employees, including engineers and office workers, on its rolls. By the time it completes the first stage, the plant will be employing 13,100 persons, of whom supervisory and technical staff will be 15 per cent and workers 79 per cent. Of the total number of workers, skilled workers will be 11 per cent, semi-skilled 80 per cent, and other catagories 9 per cent. At the second stage, the requirements of man-power will amount to 19,240 of which supervisory and technical staff will account for 12 per cent and workers 83 per cent.

Arrangement are being made for meeting the needs for trained persons. Three batches of engineers are undergoing training at present. Some workers will be trained in the USSR but a large number of them will be trained at Indian steel plants. An attempt is being made by the Bokaro Steel Limited to absorb as many of displaced local persons as possible. Their children are being encouraged to take to the industrial training institutes so that they could be employed in the plant at proper time.

Today, 3585 workers are engaged in doing the preliminary work. This figure will grow to 13,100 at the first stage and to 19,240 at the second stage of the work. At the final stage, the Steel Plant, with all its shops and mills, ancillary industries, educational institutions, hospitals and numerous other institutions, will have about 2 lakh persons in its township. This prospect is particularly welcome to a State like Bihar which has suffered greatly because of recession and famine in the last two years. Yet with a complex like an integrated steel plant, it is not only the immediate prospect of jobs for a few thousand people but almost infinite acceleration which it provides to industrial development of the region in particular and the country in general. Whatever industrial progress Bihar has achieved, it owes it in no mean measures to the fact that the first steel plant in India was started here. In a way that momentum will be picked up and given a vigorous push by Bokaro. This State now can boast of not only of the first steel plant in the country but also the largest.

In the decade ending 1967-68, the Hindustan Steel Limited would have sold about Rs. 1,380 crore worth of iron and steel products. If the Hindustan Steel had not contributed this output, the country would have had to import this steel. Even if the cost of imported materials and consumption in the process of this production as well as the value of exports are deducted, this production would have saved the country as much as Rs. 953 crore in foreign exchange. The direct and indirect contribution of HSL to the Central and State Governments revenues works out to Rs. 498 crore and 38 crores, respectively. Besides these tangible contributions, HSL has exercised a sobering and restraining influence on price increases.

As a matter of fact the per capita consumption of steel in any country is one of the indices of the progress of that country. In 1965, the per capita consumption of crude steel was 16 Kg in India as compared to 376 Kg. In Russia, 424 Kg. in U.K. and 656 Kg. in the United States. As a matter of fact, apart from Pakistan, Indonesia, Congo and Zambia, we had one of the lowest per capita consumption of steel in the world. Apart from meeting the increasing need for steel, the pattern of production at Bokaro is geared solely to flat products such as sheets and plates, the demand for which, even at the existing standards of low consumption, is far in excess of the available supplies. Even in the recession year 1966-67, India imported flat products worth Rs. 25 crore. In the previous years, the imports of these categories were much higher and it is likely that in another four to five years the bill for imports may go up to Rs. 90 crore per annum. The Bokaro plant is intended to improve this situation and to fill the crucial gap in flat products. Bokaro is not merely a replicate of the existing steelworks; it is, rather an addition of a new type to fulfil the urgent demands for flat products—a demand which is likely to grow progressively with the development of the country, and in the manufacture of more sophisticated products.

The orders placed by the Bokaro steel plant on indigenous producers and manufacturers in the engineering industries have contributed substantially to sustaining the level of demand and assisting in the process of their recovery from the present recession. There is a provision of Rs. 110 crore for Bokaro in the current Budget. This cannot be reduced, as suggested by some critics, because we cannot afford to delay in the implementation of of our programme for Bokaro. The delay of every year means a loss of Rs. 90 crore of foreign exchange which will be required for the import of flat products.

QUOTATION BOX

Scene: Lobby of the Dan Hotel, Tel-Aviv.

Cast: a throng of US tourists and one Israeli guide. "Good morning, Ladies and gentlemen," says the guide entering left. "Before we start I want you to know one thing. The Israelis is a peace-loving people. We gota piece of Egypt, a piece of Jordan, a piece of Syria. And we love it."

—From "Manchester Guardian"

For visitors to the United States who may ask, "Is there any place out there where one can eat truly excellent food, in a beautiful room, with perfect service?" You can answer, "Yes, there is one. In fact it's quite agreeable, if you can get a table, but it tends to be a bit crowded."

—From an article on the White House in "The Economist", London

Russian diplomats (in China) wanting taxis have to telephone their request through an exchange, and sometimes the exchange girl, surely out of devilment, asks: "Russian Embassy. What street is that in?" And of course the Russians simply can't bring themselves to say that it is in "Down with Revisionism Street."

—From "Far Eastern Economic Review"

I have heard the story of how Staffood Cripps, a pious and liberal man if ever there was one, took his missionary zeal to Moscow where he was posted as Ambassador. A year or so later, Churchill was visiting Moscow. At the end of a long session at the Kremlin, Churchill asked Stalin how Cripps was getting on. "He's all right", Stalin replied, "But for God's sake tell him to stop ramming Communism down my throat."

—Mr. Abu Abraham in "The Tribune"

Americans are surely the world's most passionate blame fixers.....If at breakfast the fried egg is served with the yolk broken, we do not shrug it off as a misfortune, or as God's will. we appoint an investigating committee to look into the cook's motives and competence. The grocer comes under suspicion, and the wholesale egg dealer, and the hen.

—Mr. Russel Baker in the "Internatianal Herald Tribune'

Friends writing from London tell me that perhaps the saddest moment during the marathon speech with Chancellor Mr. Roy Jenkins launched his recent Budget when he announeed another 2 s. 6 d. on the price of a bottle of whisky.

—From Ditcher's Diary in "Capital"

Everybody in Ceylon is not an Indophil, there are Indophobes as well.

—Mr. Hiren Mukherjee, M.P.

Moscow hopes for President Kennedy II.

Headline in "Manchester Guardian"

There is a Tamil saying that a barren woman, doing penance for the gift of a child, went round a sacred banyan tree and immediately began to feel for herself signs of pregnancy.

—Mr. V.B. in "Eastern Economist"

Some of the boys I've met in Delhi I find rather uncounter. It takes me a long time to get friendly and Indian girls are so inhibited. We can't initiate any work. It's just not done.....There is nothing she can do and there's nothing he can do. Actually he should. I mean what can a girl do? You can't tell him, "Look, lets do something together", and he's too frightened to ask you.

—From a report on Delhi working girls in the "Weekend Review"

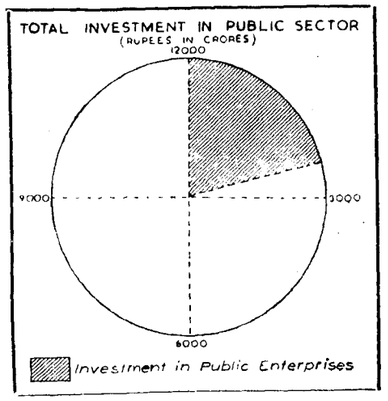
BEET SUGAR

THE production of sugar from sugar beet has begun on an experimental basis at the State-controlled Ganganagar Sugar Mills in Rajasthan. The pilot project has been undertaken in collaboration with the Government of India.

A miniature plant, with a capacity of 25 tonnes per day, has been provided by the National Sugar Institute. To supply the raw material to the plant, sugar beet has been grown on 65 acres of land in the Ganga Canal area, with seed imported from East and West Germany, Denmark, Yugoslavia and Japan. The seed was distributed free of cost to the growers and sowing operations were undertaken with technichl guidance from the National Sugar Institute and the Sugarcane Research Institute.

REFORMING PUBLIC ENTERPRISES

A. R. C. SUGGESTS REMEDIES TO CURE THEIR ILLS



A. K. NARAYANAN

THE Central Government's decision on the recommendations of the Administrative Reforms Commission on the Public Sector Undertakings is eagerly awaited by the public, who have been, of late, exercised over their performance.

The role of the public enterprises in India should be viewed against the commitments for which they were created. They are in the main three: accelerated development, security and defence, and the socialist pattern. The last among these has as its scope reduction of income disparities and prevention of economic concentration by enlarged State participation.

The State participation in the economic field has many manifestations—departmental undertakings like Posts and Telegraphs, public utility concerns like rail and transport, and purely business or commercial undertakings grouped under the label of public enterprises. The A.R.C.'s study under reference concerns the last category.

The Study Team appointed by the Commission brought out its report in June 1967. The deleterious effects of Government control have engrossed the attention of the Team. It has attempted a detailed and delicate balancing between accountability for public funds on the one hand, and autonomy, essential for commercial success, on the other, and the formulation of a more satisfactory ratio between the two.

By and large the powers in regard to these undertakings reserved at present to the Governments are: (1) Appointment of the Chairman and Members of the Governing Board; (2) Appointments, or approval of appointments, to posts carrying salaries above a certain amount; (3) Capital expenditure above a certain amount; (4) Sanction for upward variations in estimates of over 10 per cent in cases where the DPR with detailed estimates has already been approved by the Government; (5) Matters connected with borrowings, investments in securities, distribution of profits etc.; (6) Appointment of auditors, except in statutory corporations in which the Comptroller and Auditor General has been designated as the auditor; (7) Issuing such directions or instructions as may be considered necessary to ensure the conduct of business conforming to the prescribed policies; and (8) In a few cases, rules relating to the terms and conditions of service of employees.

The Study Team found that armed with these powers the Government has filled the Governing Body with Government officials. The Financial Adviser, being a nominee of the Government, acts as a kind of watchdog and his loyalties are divided. In certain undertakings, the limits for sanction of capital expenditure have been kept too low with the result that constant reference to the Government is required. In a few cases like Hindustan Aeronautics, Bharat Earth Movers and Mazagaon Docks, the articles of association provide for the delegation of powers by the President. The power of issuing directives is seldom invoked formally. Through informal directions, the Government is able to make a tool of these bodies, and leave no cognisable trace of their meddling.

The Team points out that, on the other hand, in certain essential matters, the Government has not been able to get these bodies to comply with their directions. Three specific instances have been quoted:—

(1) Despite repeated instructions from the Government, a number of undertakings have not cared to make adequate financial and accounting arrangements. The Government was content with making the suggestion.

(2) Till 1960, the Government was not able to prescribe any specific standard for the accommodation of employees of the different undertakings. Even after they were prescribed, all public undertakings have not cared to adhere to them.

(3) The Ministries have not taken any action to control the piling up of unduly large inventories by the undertakings and the resultant locking up of public funds.

The Study Team has recommended the curtailment of the area, but intensification in selected matters, of governmental control.

On the basis of the Team's findings, A.R.C. has suggested the following :—

(1) No officer of the Ministry should be made Chairman of a public undertaking; nor the Secretary of a Ministry should be included in its Board of management.

(2) Top management posts like those of the Chairman and full time members should be filled by deputationists only as the last resort. As a general rule the Government servants selected for appointment should sever connections with the Ministry.

(3) The Government officers appointed as part-time members should not be lower than a Joint Secretary in rank, and they should not be taken as representing any particular Ministry, so that even when they are transferred, they continue on the Boards.

(4) The Chairman of a Sector Corporation (another reform suggested by the Commission elsewhere for remedying multi-unit functioning) should be accorded a status commensurate with the size of the undertaking without any limitation on emoluments as exists at present. According to the existing rules their emoluments should not be more than that of a Secretary to the Government of India.

(5) All appointments below the Board level should be made by the Board itself. However, in the case of the Chief Executive of a constituent unit and its Financial Adviser, the appointment should be made in consultation with the Government.

(6) The powers vested in the management for sanctioning capital expenditure should be reviewed and enlarged in the case of larger undertakings.

(7) The Boards should have full freedom in delegating powers to its executive officers.

(8) Any suggestion from the Government to an undertaking asking it to act in a manner different from that dictated by economic considerations should be invariably in the shape of a formal directive and it should be duly brought out in the Annual Report of the undertaking.

In order to appraise correctly the impact of the Commission's recommendations it will be necessary to know first the drawbacks of these enterprises, resulting from their connection with the Government.

Firstly, the rate of their expansion is disproportionately high. In 1950-51 there were five units with an investment of Rs. 29 crore. At the beginning of the Second Plan, there were 21 units with Rs. 81 crore investment. With the Third Plan the number more than doubled to 48 with Rs. 953 crore as investment. In 1965-66 there were 74 units with Rs. 2,415 crore. As the business growth is always a co-efficient of institutional and expertise availability, this load is more than what the governmental frame can bear. Poor productivity is a consequence as well as a symptom of disease and overstrain.

(Rs. in crore)

	Total Inv.	*Capital employed*	*Gross Prof.*	*% of Gr. Pr. to Cap. emp.*	*Net profit*
Hindustan Steel	979	693	21	3	1.66
Others	900	708	31	4.3	7.95
Total	1,879	1,401	52	7.3	9.61

The financial efficiency of the forty running concerns in 1965-66 can be judged from the table above.

A closer examination of the Hindustan Steel, the prize project accounting for more than 50 per cent of the investment discloses a deplorable state of affairs. Till 1965, it was working at a loss but, of course, the loss was gradually coming down. In 1961-62 the loss was Rs. 19 5 crore ; in 1962-63 Rs. 23.9 crore ; in 1963-64 Rs. 4.8 crore ; in 1964-65 Rs. 2.1 crore. Only in 1965-66 it could make a profit of Rs. 1.7 crore. The similar return on capital in the private sector, for example TISCO, for the year 1965 is Rs. 27 crore on Rs. 39 crore, which is 69 per cent.

Sometimes the poor turnover is explained away as owing to the normal gestational lag. A comparison with the performance of TISCO for an equal span of run will show that the gestational factor is unduly exaggerated. While for a run of 15 years (1953-1965), with all the governmental monopoly, the Hindustan Steel gives a 3 per cent gross profit on the capital employed, the TISCO in 15 years after its start in 1907, with a modest Rs. 66 lakh, registered a figure of 18 per cent.

If comparison with private sector is a far cry, an instructive tally can be made with undertakings where the Government contributes money but without direct responsibility for management. There are 11 such listed in the Annual Report for 1965-66 of the Bureau of Public Enterprises, of which the Sikkim Mining Corporation is in the developmental stage. Of the remaining 10, if D.V.C. is excluded which is cent per cent Centre-and-State financed, there is a net profit of Rs. 6.5 crore on an investment of Rs. 80 crore. The conclusion is inescapable that financial efficiency varies at a steeper inverse ratio to governmental control than justifiable by infrastructural and other considerations.

THE RUSSIAN EXAMPLE

It is high time to ponder whether the poor performance of these enterprises is not traceable to slack management. The Russian experience is edifying in this context. After the nationalisation of all large enterprises in 1918, an experiment was made at management by Glavki or Divisions of the Supreme Council of National Economy, involving maximum centralisation. When this was found to be a failure, under the New Economic Policy of Lenin, State Trusts were created for conducting industrial operations which too could not deliver the goods.

With the introduction of Five Year Plans, the 'Collegium' system was replaced by a set up in which the sole responsibility for management was vested in one particular individual. While the management

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Concept of PUBLIC ADMINISTRATION

as Evolved through the Three Plans

S. C. SETH

THE First Five Year Plan, while explaining its key objectives, had observed, "The goals of social and economic policy are prescribed in the Directive Principles of the Constitution. The Five Year Plan represents the first attempt on the part of the Central Government and all States to translate those Principles into a national programme based on the assessment needs and resources. It is now the task of public administration to carry out this programme in cooperation with the people".

The planners put the principal administrative problems into two groups. The first included the problems bearing on the entire field of public administration, such as "the achievement of high levels of integrity, efficiency and economy"; the need for "structural changes to raise the level of administration in the less advanced States"; and to equip "the Government with machinery to carry out its economic functions in a manner more adequate to its present responsibilities".

The second group included problems relating to "the administration of development programmes in the districts"; the machinery of general administration ; the establishment of "an appropriate agency of development at the village level ; the co-ordination of development activities undertaken on behalf of Government"; the State agencies and, finally, questions such as "regional co-ordination and supervision of district development programmes", and 'the place of social service agencies in the reconstruction of rural life."

The planners, however, displayed a great sense of realism when they observed that even if the Government does all that lies in its power to improve the administration, "the success of planning under democratic conditions will still depend upon the measure in which the association and co-operation of the people is enlisted in formulating and implementing various programmes. In each field of activity there is a great deal of assistance which the people can render to the administration."

Suggestions were also made for the development of a sound personnel policy with regard to the need for enlisting better administrative, scientific and technical and sub-ordinate staff. The planners pointed out that at the Centre there were not enough men with the necessary experience and qualifications, (a) to undertake work in connection with the framing of economic policy and the study of economic problems and (b) to manage industrial public enterprises or to handle executive duties relating to the regulation and control of trade and Industry.

The planners felt that "in the ranks of the subordinate and clerical personnel also there are gaps, but these are associated not so much with numbers as with lack of experience, lack of training and supervision and, to some extent, with faulty methods of work and organisation." And, therefore, "As functions of Government expand, there are three directions in which it will be necessary to supplement the existing arrangements (i) for doing work which may broadly be described as economic policy and administration ; (ii) for managing industrial enterprises belonging to the Central or State Governments ; and (iii) for work connected with development, land reform and food administration".

To achieve these objectives three proposals were made. In the first place individuals with high academic qualifications or special experience in the economic field should be drawn into the administrative service. A higher age limit of 30 years, for initial recruitment, was suggested.

The second proposal was very modern in outlook. It called for the selection of a proportion of the junior officers of the administrative service at an early stage in their careers for intensive training in the economic field within the Government, with suitable business houses and, if necessary, abroad.

Thirdly, the planners called for an increasing association of individuals with special experience and knowledge from other fields, such as the universities, banking and finance and industry in responsible senior positions in the Government.

Emphasis was laid on a coordinated approach between the Public Service Commissions and the administrative authorities to achieve "reduction in temporary and *ad hoc* recruitment, and to expedite the process of recruitment which tends to take perhaps longer than might be absolutely necessary." The use of new selection techniques and adoption of better schemes of training was suggested.

SECOND PLAN

The objectives of the Second Plan were slightly different. The Plan carried forward the process initiated in the First Plan. It was designed to provide for a larger increase in production, investment and employment. Simultaneously it was expected to accelerate the institutional changes needed to make the economy more dynamic and more progressive towards social as well as economic ends.

The principal administrative tasks in the Second Plan were classified into the following broad categories :—

(1) ensuring integrity in administration ;

(2) building up administrative and technical cadres and providing incentives and opportunities for creative service ;

(3) continuously assessing requirements of personnel in relation to the tasks to be undertaken ; organising large scale training programmes in all fields ; and mobilising the available training resources, including public and private institutions, industrial and other establishments, apprenticeship and in-service training ;

(4) devising speedy, efficient and economic methods of work, providing for continuous supervision, and arranging for objective evaluation of methods and results at regular intervals ;

(5) carrying technical, financial and other aids to small producers as in agriculture, national extension and community projects and village and small industries ;

(6) building up organisation for the efficient management of public enterprises as in industrial and commercial undertakings, transport services and river valley schemes ;

(7) securing local community action and public participation so as to obtain the maximum results from public expenditure, as in agriculture and in social services ; and

(8) strengthening the co-operative sector of the economy through assistance in managerial and technical personnel and establishment of co-operative, financial, marketing and other institutions.

The Second Plan also referred to the two important administrative maladies—corruption and delays. The First Plan had stressed the need for supervision and vigilance and hoped that corruption could be curbed by ensuring efficiency and eliminating such policies and procedures which bred corruption. The Second Plan picked up the thread. It felt that the root cause of corruption was "delay in the disposal of cases or applications".

The planners were correct in associating the fact of delay with the moral attitudes of the employees. They said, "the laxity on the part of employees of Government is because the honest and good work was not sufficiently rewarded and inefficiency and dishonesty was not adequately penalised". All this should be straightened.

In the field of personnel administration, the Second Plan emphasised the need for reviewing the requirements of administrative personnel at different levels, and suggested that the recruitment for States should be supplemented by formation of more all-India services, joint development cadres and other mutual arrangements between the Centre and the participating States, as envisaged in the First Plan, and cadres or other mutual arrangements organised on a regional basis to serve the needs of groups of States. However, the Plan did not add any concrete proposals for achieving these arrangements under the existing circumstances.

The Second Plan Report reiterated the age-old administrative slogan that public money should not be misapplied. It recommended an appropriate system of cost control and internal efficiency audit.

The planners recommended the creation of a Committee on Plan Projects (COPP) to organise investigations, including field inspection of important projects, to initiate studies with the objective of evolving suitable forms of organisation.

The Second Plan makes an interesting departure from the previous Plan in that it lays emphasis on the psychological approach in mobilising the machinery of administration. To achieve this it recommended five steps : (a) exercise of maximum responsibility at each level ; (b) conscious career-development of men with ability and initiative, for positions of higher responsibility ; (c) development of an attitude of speed and urgency ; (d) personnel policies to be freed from the rigid procedures and need to tap new sources of recruitment in different fields for shorter or longer periods ; (e) a clear cut demarcation of 'policy' and 'executive' functions.

The Plan also referred to the increasing role the public enterprises would have to play. However, the planners did not seem to be clear "as to the relative advantages of different forms of organisations". The necessity for planned publicity and public co-operation and participation in the development schemes was also reiterated, but it was not accompanied by concrete suggestions as to how best it could be done.

THIRD PLAN

The Third Plan put before itself objectives bigger in scope and activity.

In respect of the administrative matters the Third Plan reiterated the same old generalised comments which characterised the previous Plans. For instance, the Plan observed, "As large burdens are thrown on the administrative structure, it grows in size ; as its size increases, it becomes slower in its functioning. Delays occur and affect operations at every stage and the expected outputs are further deferred. In these circumstances, there is need for far-reaching changes in procedures and approach and for re-examination of prevalent methods and attitudes."

The Third Plan report replaced the terms 'Public Administration' by 'development administration'. "Each area of development administration", it said, "has its own specific problems. There are, however, some common directions of reform which are applicable to all branches of administration and deserve emphasis in view of the experience gained in the Second Plan. The primary aim must be to ensure high standards of integrity, efficiency and speed in implementation." The Plan recommends an increasing use of work studies and improved systems of office administration to attain administrative efficiency.

In the context of development, the Plan added, "While changes in organisation and procedures can go some distance to remove causes of delay and to achieve greater speed, they have to be supported by giving attention to the training of personnel, to supervision and to reporting and evaluation".

The Plan struck a new note when it observed, "Within defined limits, each individual should be given full responsibility and, with it, the necessary measure of support and trust. If he fails in the discharge of his responsibility, he should be replaced."

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THIS INDIA

YOJANA invites contributions to this feature from its readers all over the country. Each anecdote must be true to life, of less than two hundred words, capturing something significant of India's rich and varied life. Each published anecdote will be paid for.

One day while I was travelling to Puri, I met a boy vending green coconuts on a small railway station. I called him and gave him one rupee note for a coconut. He took the price and gave me the balance. Suddenly the train started. The boy could not give me the coconut. I felt very sorry.

When the train reached the next station, to my utter surprise, I saw the same boy coming towards me with the coconut in his outstretched hand. I was pleased with him and offered him another rupee. But he refused and said, "No, Babu, thank you, I am only sorry that I could not give you the fruit there."

Bhubaneswar *Sankar Nayak*

My husband is a District Officer. Since we came to Dhulia he was trying to make his office a "Bachat office" under the office small saving scheme.

All the Class III employees in his office co-operated with him and opened CTD accounts. He tried hard to make the peons also invest in the scheme but in vain.

One day he told me about this. I did not say anything but forthwith stopped paying the little remuneration that I used to give to one of the class IV employees who, after office hours, used to do all kinds of small jobs in our house. I kept aside the cash for some months.

During Diwali I told my husband my plan to open a savings account in the Post Office in the names of the two peons with the money I had saved in the case of one of the peons and by contributing the first deposit in the case of the other. My husband was pleasantly surprised and readily agreed.

When peons came to know about the account in their names they were touched. Tears rolled from the eyes of the peon who was doing our personal work.

Now every month they deposit one rupee in their accounts.

Dhulia *Saw. H. Anuradha Shamrao*

On the eve of Holi, I was waiting for a bus in Lodi Road area. Just opposite the bus stop, some tiny boys were standing with water-filled balloons in their hands. Suddenly, I saw that a hawker selling oranges on the bicycle was hit on his mouth with a balloon by one of the boys. The hawker immediately left his belongings there and chased the boy. The boy crying 'Mummy' 'Mummy' entered his house. Hearing the shriek of the son, his mother came out. Paying no heed to the hawker's complaint, she started rebuking him. In the meantime, the other friends of the boy, in spite of my forebading them, took out all the oranges from the hawker's basket and ran away.

New Delhi. *Kanta Thapar*

It was the morning of Doljatra day. At about five I was roused from my sleep by the sound of stones and bricks crashing on the road. I came to the verandah and saw about five or six youngsters going away after placing blocks of stone, bricks and other hard material on the road blocking the passage of the running motor cars. One of them was saying that it would be a great fun when the running motor cars would run against the blockade and tumble down. I returned to my bed.

Half an hour later I again heard the sound of stones falling on the ground. I came to the verandah and found some boys on the road removing the blockade. I asked them why they were doing so. They told me that they would like no harm to come to running motor cars. I thought that our younger generation is not all bad.

Calcutta. *S.K. Sarkar*

We went on an excursion to the High Ranges of Kerala and chanced upon a tribal colony. The seminude tribals gathered round us equally curious. The students were delighted to see them in their original habitat.

We successfully persuaded some of their elders to sing tribal songs and we in turn danced and sang a few film hits. They were obviously pleased and the headman offered us fruits and honey.

One of us stepped forward to receive the same from him. But the headman hastily placed the stuff on the ground and stepped back asking the student to take them.

He said that we 'civilised people' were untouchables to them.

Trivandrum *Mrs Vasantha S. Nair*

HIGHER SUGAR PRICE DUE TO INDUSTRY'S INEFFICIENCY

R. N. SINHA

THE Indian consumer is entitled to ask why he is having to pay an exorbitant price for his sugar. It is a pity that a kilogram of this essential commodity costs as much as Rs 4.50 and even more while the international price is around 66 paise a kilo. Sugar would verily be an article of luxury to the majority of the people if it were not supplied at the ration shops at tolerable rates. Yet, believe it or not, the sugar industry is campaigning for complete decontrol so that even this benefit would be eventually withdrawn.

The sugar industry thinks it has all the facts in its favour. It has circulated its tale of woe in the form of advertisements in the press pleading not guilty to the charge of profiteering and blaming others for the plight in which the consumer is. If its story is translated into a memorandum of demands, the suger industry would like to enjoy absolute monopoly in cane procurement. It would want no competition from the manufacturers of gur and khandsari and no interference from Government with the market mechanism. Yet the brief period of experiment with decontrol, and that too partial, has proved that the industry cannot be trusted to safeguard the interests of the consumer.

In order to understand the behaviour of the industry its justification for the exorbitant price of sugar should be carefully examined. It argues that Government has fixed the controlled price of sugar on minimum cane price which is only notional and so in actual practice it has to pay more for the cane. The cost of production, so the argument runs, is thus higher than that assumed by Government in procuring the quota for public distribution at a fixed price. The industry claims that it supplies to Government at a loss and so the loss has to be made up in other ways. Partial decontrol, it is admitted, was intended to help the industry make up the loss. It would seem, therefore, that in effect there was a general agreement among the parties concerned on fleecing the consumer who, of course, is helpless. After having given a blank cheque to the industry about how it should dispose of 40 per cent of its production, it is futile to shed tears over the rising price of free market sugar.

When the policy of partial decontrol was announced late last year, the expectation was that the step would put the industry on a sound footing and by February the price of sugar would find a tolerable level. This expectation has been belied. Today the lobbying is for complete decontrol which, if acceded, would be tantamount to handing over the consumer to the mercy of the industry.

DECONTROL

Almost every experiment in partial or complete decontrol has turned out ultimately to the disadvantage of the consumer. Decontrol of cement is an example. Manufacturers of cement promised to behave when decontrol was announced and prices were allowed to be raised. They made a huge pile of profits. Even the quota of cement which would normally have been sold to Government at concessional rates was disposed of in the open market at the higher prices. Of course, it was not illegal but a breach of faith. The sugar industry is behaving in a similar fashion. It asked for and won what amounted to legalisation of black market prices in sugar. It would now like to have this legalisation extended to the entire production including the 60 per cent which the Government requisitions for public distribution. The industry has tasted the fruits of partial decontrol. Naturally it asks for more.

There appears to be no easy solution to the problems of the sugar industry. A clean sweep of the entire industry with the country importing sugar has been suggested as a remedy. This sounds an attractive proposition since leading economists have pointed out that if the six million acres of the country's best land now taken up by sugar cane were put to intensive cultivation of cereals, it would yield a minimum of 15 million tons of foodgrains a year. The value of this foodgrain at international prices would be of the order of 1,000 crore rupees. Importing all the sugar that we need would perhaps cost less than 300 crore–a clean saving of 700 crore a year on the import bill. Alluring though this prospect is, it is a counsel of despair.

For one thing, as was recently pointed out in an official press note, Kalidasa himself had gone into raptures over sugarcane fields. But even Kalidasa could not have anticipated that the sugar industry now sustains millions of people. It supports 10 million cultivators, earning for them over Rs. 350 crore annually, providing employment to over two lakh people who work in industries connected with it. The industry also earns for the exchequer Rs. 68 crore a year by way of cess and excise duties. Scrapping the industry is thus easier said than done.

Moreover, there are other aspects which are no less important. No part of sugar cane goes waste. Its top serves as very good fodder. The cane trash and cane roots are used as fuel. The juice, needless to say, is used to make gur, khandsari and sugar. The cane fibre known as bagasse is used as raw material in a number of industries. The molasses likewise come in for many industrial uses. The press mud is a good manure. Can such a versatile plant be allowed to die out ?

POOR QUALITY

There is no doubt that a solution has to be found to the many problems of the industry by certain radical thinking. The biggest bottleneck is not so much the dearth of cane but its poor quality. Even if every kilo of cane is used for sugar manufacture—that is if there is a ban on manufacture of gur and khandsari—the cane supsuplies will not suffice for the installed capacity of all the sugar mills, about 200 in all. Besides the fact that the area under sugarcane is steadily going down, the quality of the cane is poor. While the sucrose content of sugar cane grown in Cuba is about 18 per cent, here in India it varies widely. The average yield to an acre under cane is also low in India. It averages about 18 tons while in Cuba and parts of Java it is many times higher.

The first problem of the industry is to ensure ample supplies of good quality cane. It is well known that recovery of sugar is poorest from cane produced in Uttar Pradesh, West Bengal, Punjab, Delhi and the east coast of Madras. Judged by this yardstick, sugar cane cultivation should be confined to areas of Maharashtra, Gujarat, North Mysore, Andhra Pradesh and Central Madras. For some historical reasons, over a third of the sugar factories in the country are situated in Uttar Pradesh where the quality of the cane grown is very poor. We could do with some bold thinking and reallocate the location of factories in areas which would admit of the highest efficiency.

The unorganised gur and khandsari industries consume a great deal of cane. These account for as much as a third of all cane produced in the country. This is surely a wastage considering the fact that 40 to 60 per cent of the juice is lost in the process of manufacture of gur and khandsari. There is no easy solution to this problem. As long as the cost of sugar is exorbitant the vast majority of the people would go in for the cheaper sweetening agents and gur and khandsari would continue to be manufactured to meet the demand. A large quantity of gur is also diverted to illicit distillation.

POSSIBLE REMEDY

It would seem that one possible remedy is for the factories themselves to organise cultivation of cane some what like what the co-operative sugar factories in Maharashtra have done. There, each co-operatiye factory controls a prescribed number of growers. The factory has full time inspectors and supervisors who give technical advice to the the cultivator. It has a chart showing the time of harvest for each plot of land. The harvesting is done by the factory hands and the grower is paid the price of the cane on the spot. All this sounds like a khedda operation but it appears to be the only method of preventing large scale diversion of cane to uses other than making sugar.

It would seem in retrospect that both Government and industry have been addressing themselves to wrong tasks all these years. The industry was preoccupied with making profits while the Government possibly was content to let things continue as they were. The industry can be put on a firm basis not by decontrol but by persuading it to plough back the profits for a radical reorganisation. In the final analysis, the consumer's price of sugar is functionally related to the efficiency of the industry. If today the consumer has to pay as much as five rupees for a kilogram, the inefficiency of the industry is largely to blame.

Courtesy : All India Radio

PUBLIC ENTERPRISES

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was allowed unfettered freedom, a new set of 'economic crimes' was evolved under which these managers could be prosecuted and made to undergo a penalty extending up to two years' imprisonment, if it was proved that the failure of the enterprise was due to their slackness.

There are two sets of disabilities from which a bureaucratised management suffers. Business management is a different proposition. While broad outlines of policy are sufficient for an office administrator, details are of paramount importance in business. The bureaucrat finds himself, therefore, in a totally different medium where his skills are at a discount. Besides, he does not possess the necessary 'expertise' and training for running a complex business mechanism.

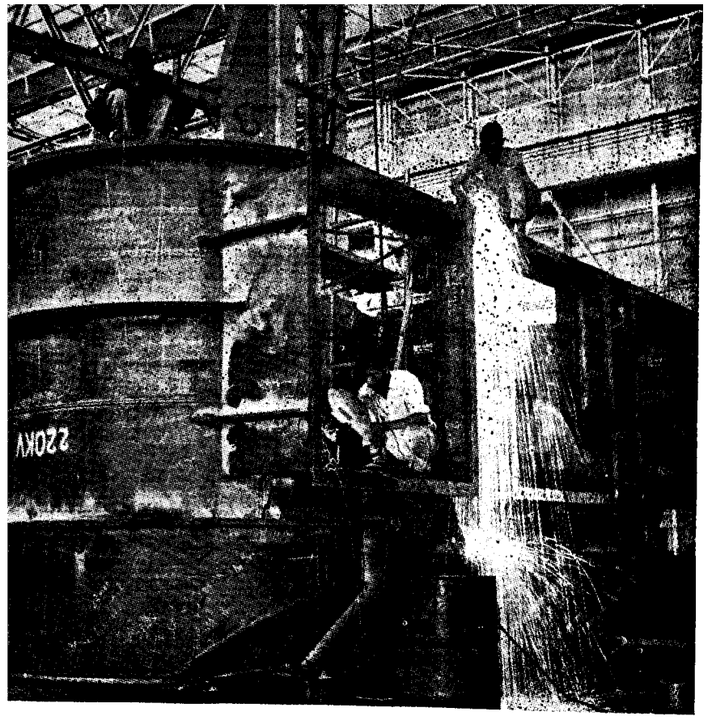
The reforms suggested by the Commission will no doubt go a long way in remedying the evils of bureaucratisation. It will also limit the play of apathy. But as the causes are more deep-seated, more positive measures are required for effective improvement of performance.

Firstly, a more workable equation has to be found between the public and private sectors, consistent with capacity.

Secondly, avenues should be found for injection of industrial expertise into the system. This can be done by association of industrialists of proven capacity in management and giving them a free hand.

Thirdly, profit should be regarded as a normal feature, and an index of operational efficiency. Heavy losses should be thoroughly investigated, and the manager of the undertaking held personally responsible.

Fourthly, it should be categorically laid down that whatever advice is tendered by the Government, it should only be as a formal directive, so that responsibility for failure of the undertaking may be fixed squarely.



The tank of a giant transformer being fabricated. BELOW : Rotor of a 30 MW turbo generator under construction.

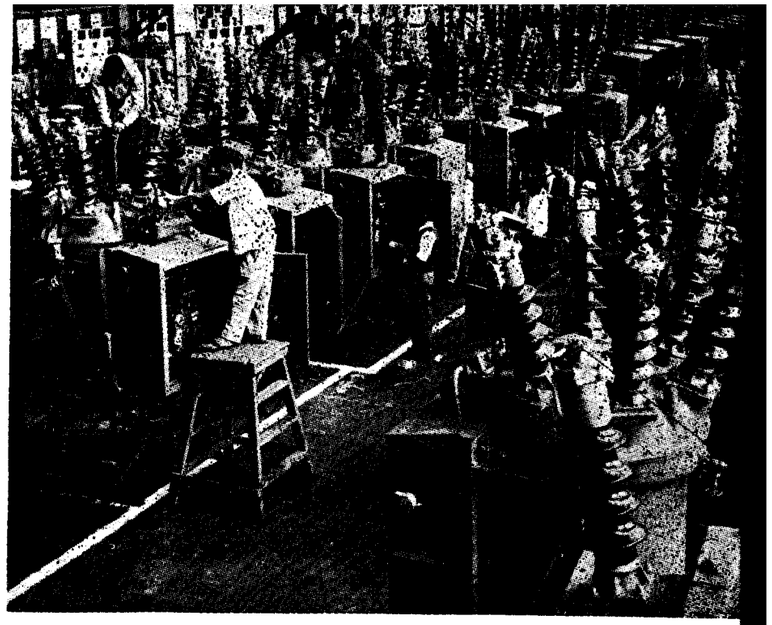
Photographs by Trilok Chand Jain

From Bhopal

INSTRUMENTS OF POWER

WATER and steam turbines, traction and industrial motors, switchgears and controlgears, transformers and capacitors—all required for supplying power to our industries and farms—are now manufactured in India by the Heavy Electricals Limited (HEL), Bhopal. The range of HEL's production of these items is very wide.

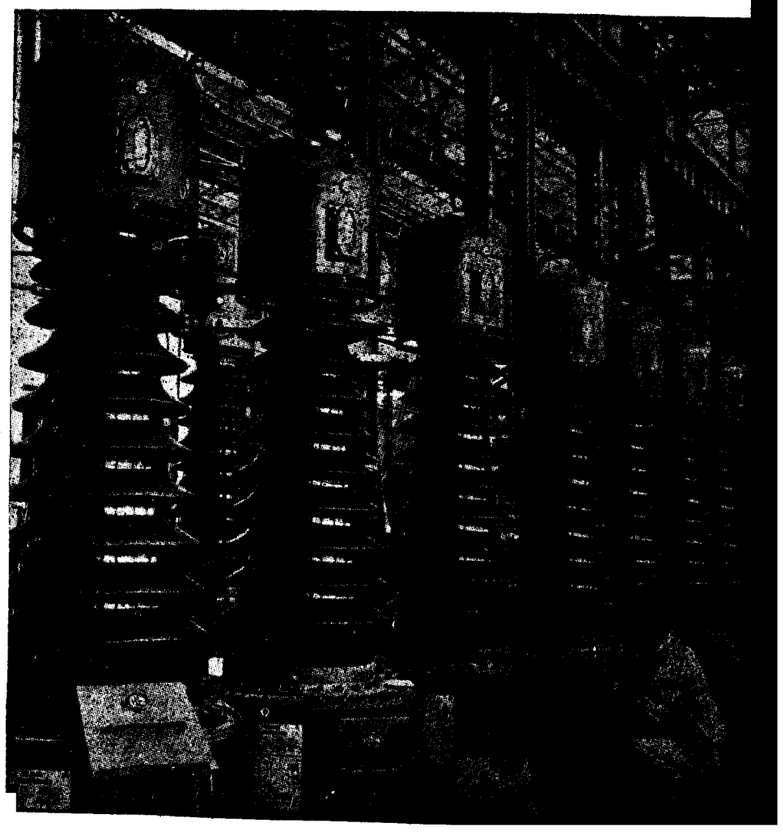
This machinery is supplied to power houses, railways and industries for equipping their power systems. So far, HEL has supplied transformers with a total capacity of 5 lakh KVA, over 6,500 units of switchgears, about 500 traction motors and associated controls and 200 large industrial motors. A 30 MW turbo generator has been made for the Basin Bridge thermal power station in Madras State. Work on the design and manufacture of water turbines and generators for 14 hydro-electric projects ranging from 15 MW to 165 MW, and steam turbines and generators ranging from 30 MW to 120 MW for four



ABOVE : High voltage outdoor circuit breakers being assembled.

LEFT : The stator frame of a 30 MW turbo generator.

BELOW : A long line of 132 KV single phase transformers manufactured at the factory.



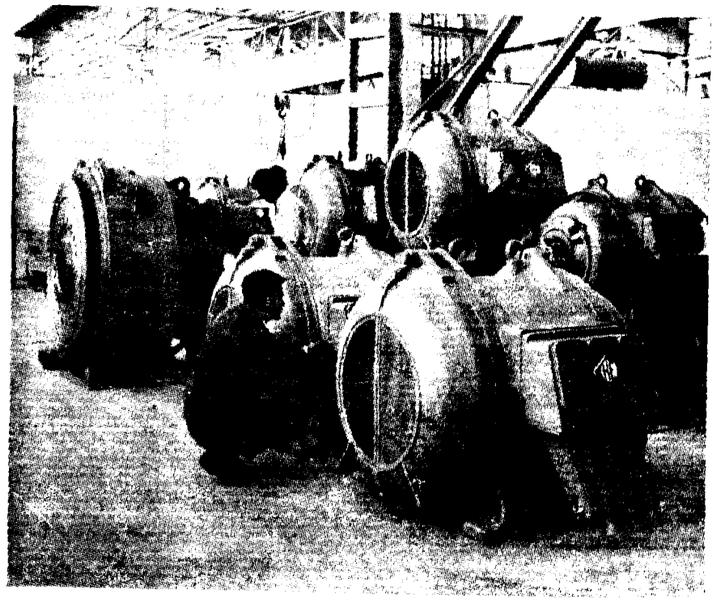
thermal power houses in the country. Some of the major components of the generating plants have already been despatched to the project sites. The main hydro-electric projects using HEL plants are : the Obra, the Chibro, the Ramganga and the Yamuna Stage II in Uttar Pradesh; the Bassi, the Upper Bari Doab Canal, the Beas and the Pong in the Punjab; the Koyna in Maharashtra, and the Ukai in Gujarat. Thermal power plants are being supplied to the Basin Bridge power house in Madras, Parli station in Maharashtra and the Santaldih power station in West Bengal. Traction equipment is supplied to the Railways; the diesel locomotives produced by the Varanasi Works are equipped with HEL products. HEL is also producing thermal and end shields for the nuclear reactors of the atomic power station being set up at Rana Pratapsagar in Rajasthan.

HEL is now working on 220,000-Volt transformers and switchgears. It aims at manufacturing 400,000-Volt transformers and switchgears. It is preparing itself to meet the entire reqirements of the country for electric traction equipment. It is also being equipped to make the largest turbines and generators the country will require in the next ten years for both hydro-electric and thermal projects. Industrial motors of 13,000 HP are being undertaken for the Durgapur steel works.

HEL manufactures the heavy electrical machinery on orders. In 1966-67, its total output was valued at Rs. 17.42 crore, as against Rs. 10.13 crore in the previous year --an increase of 74 per cent. The output in 1967-68 is estimated to be Rs. 23.76 crore. HEL has orders for hydro-electric plants covering the Fourth Plan.

HEL began production at the end of the Second Plan in 1961. Its output was only about a crore of rupees in the first year. During the past seven years, it has produced electrical goods worth Rs. 67 crore.

Before HEL came into existence, the electrical machinery was all imported at a huge cost. If India has to have her own power plants adequate for running her growing industries and modernising her agriculture, she must manufacture her own electrical machinery. HEL was set up with this purpose in the public sector, in collaboration with the U.K. In the meantime, three more factories have come up at Tiruchirapalli, Hyderabad and Hardwar, under the management of the Bharat Heavy Electricals Limited, a public enterprise, to meet the increasing needs of the country. They help to save a considerable amount to the country in foreign exchange every year. Their products are specialised and highly sophisticated.



Industrial motors and traction generators awaiting despatch

At present HEL is a complex of eight factories, each manufacturing a separate group of items. Originally its annual capacity was for products valued at Rs. 12.5 crore. Later it was decided to double it up. All the expansion schemes are not yet complete.

HEL was born to do away with imports. But since 1963, it has laid a special emphasis on import substitution. A cell has been set up in the factory with this purpose. Imported contents in the products is being increasingly replaced by indigenous material. HEL saved about Rs. 50 lakh in 1967-68 and Rs. 44 lakh in 1966-67 by way of such replacement. The percentage of imported content in the various products was about 40 in the beginning : now it is :

Item	*1965-66*	*1966-67*
Switchgears	12	11
Transformers	38	24
Capacitors	17	17
Traction motors	23	33
Industrial machines	44	27
Controlgears	19	27

HEL has encouraged small-scale ancillary industries and 18 such units have so far been in production ; 14 more are expected to be set up shortly.

HEL has facilities to train its own technicians. Up to the end of March 1967, it had trained 396 graduate apprentices and 5,115 technicians and artisans at its training school and workshop ; and 418 engineers trained in the U.K. have been absorbed in the factory.

The recent recession in the industrial field has affected HEL and some of its capacity is lying idle. HEL, therefore, proposes to take up smaller items like refrigerators, small motors, pump sets and automatic voltage regulators. It is also considering other schemes of diversified production. Like many other public enterprises, the factory is running at a loss, and the total loss is estimated to amount to Rs. 30 crore by 1970. However, the losses were expected in the detailed project report up to 1970 after which profits are expected to accrue.

VILL THE CONSUMER CO-OPERATIVES SURVIVE ?

Instead of the present four-tier structure, which is dominated by political vested interests, there should be a single federation at the national level with 300 and odd consumer co-operatives all over the country directly affiliated to it.

K.K. TAIMNI

T will be naive to expect that a countrywide chain of consumer o-operatives could hold the price ne in a state of acute inflation. ny meaningful study, however, bout their role as market leaders nd stabilisers should necessarily e preceded by a careful analysis of he size of the retail outlet and the tructural relationship between the lifferent tiers, for these factors not nly can materially alter the cost tructure of these organisations ut do also pave way for their uture growth. No amount of state ssistance or loyalty of members, r even any number of meticulous agreements with the suppliers and manufacturers, can bring the performance of these organisations up to popular expectations, if they suffer from the congenital ailments.

If it is conceded that the economic viability of the co-operative, in the last analysis, alone will be the criterion of its success, Tables I and II will reveal very interesting details.

Two points are to be noted here before any inference can be drawn; the size and turnover in a retail outlet vary directly according to the standard of living of the locality; and there is a floor limit of the turnover beyond which if sales go down, the viability of the retail outlet cannot be ensured. This is particularly true in urban areas, where various labour enactments as indeed the inadequacy and non-availability of space mostly determine the costs.

Now if this yardstick is applied to 16,000 and odd co-operative retail outlets in the country, it becomes apparent that howsoever powerful and well-meaning support the Government and the consumer may extend, the majority of the shops cannot stay and grow in a competitive setting. Their annual sales cannot exceed Rs. 1·50 lakh due to lack of space. This is certainly inadequate to meet all the costs or to generate sufficient funds to stay in the market. Decontrol of essential commodities would result in complete extinction of the entire co-operative consumer movement excepting a few co-operatives.

MODEL STORES

It is reported that Government has now under its active consideration a scheme to set up model stores with an area of 1,000 sq. ft. each and with a potential minimum annual turnover of Rs 6 lakh. The success of a few departmental stores and the none-too happy working of most of them again go to prove that it is not the Government's good intentions and support but the free market forces that determine the size, turnover and economics of a retail outlet and consequently its future. A completly new scheme based on the population of a town, provision of financial assistance and the deputation of a few managerial personnel and massively supported by Government machinery is not certainly going to fare better than its counterparts in the past. Exact location and not the total population of the town is what determines the size, the likely turnover and the ultimate viability of the enterprise.

The second vitally important factor, if Western and the limited Indian experience is any guide, is the kind of structure of the consumer movement that should be evolved to give impetus to the growth of each co-operative retail shop in the country. At present one finds a four-tier structure, with some notable exceptions (where there are three tiers), in the co-operative consumer movement. At the National level, there is the National Federation, at the District level the Wholesale Co-operative, and then the primaries/branches affiliated to this wholesale unit.

TABLE I

Distribution of retail outlets on the basis of Shop area in the Co-operative Sector.

Area	*No. of Co-op. Retail Outlets*
100 to 200 sq. ft.	16,475
500 to 1500 sq. ft.	50
4,000 to 10,000 sq. ft.	16
10,000 sq. ft. onwards.	32

(The last category is of the newly opened Departmental Stores and Super Bazars)

What are the many consequences of such an arrangement, which largely came into being on grounds of administrative efficiency and political expediency and had little or nothing to do with business aspect ? (i) Three more middle agencies have cropped up within the Movement, (ii) 350 wholesale stores generally compete within the market for those commodities, which the Federations are either unwilling to supply or are not in a position to supply with the result that they tend to increase the prices, (iii) the Federations being not always sure whether they would carry the

Wholesale Societies with them, if some bargain is struck, are chary of taking risks, (iv) the economies of bulk buying and large-scale operations are dissipated by meeting the costs of different tiers, (v) charges of indifference and inefficiency have often been levelled by one unit against the other, (vi) co-ordination of administrative work, creation and maintenance of managerial cadres, common accounting system, appointment of experts, conducting of fundamental research, all these become impossible because of decentralised control and operations.

If production is also taken up by the consumer co-operative movement, many more problems will appear. The one and perhaps the only advantage which accrues from this structure is the so-called member participation and the control that members have over their shops.

GOVERNMENT APPROACH

A recent study by the Evaluation Committees of the Planning Commission reveals that most of these co-operatives are dominated by political vested interests and possibly are the main hurdles in the rationalisation of the structure. The approach of the Government towards this vital point is also obscure, though one would like to think it favours the unitary pattern. The lone sufferer, of course, is the poor consumer, for whom the entire superstructure has presumably been built. On the other hand, if a careful study is made of the role and activities of the State Federations, one finds these acting more as post-offices than independent business houses. Most of them act as 'middlemen' between the National Federation and the affiliated wholesales.

TABLE II

(Average sales per retail outlet in co-op. sector)

Year	*No. of Co-ops. Retail Outlets*	*Average Annual Sales Rs. lakh*
1951-52	9,674	1.15
1955-56	7.359	2.01
1961-62	7,266	0.66
1965-66	16,573*	1.20

(This includes 13,061 primary stores. 1,881 branches of primary stores and 1,631 branches of centrally-sponsored wholesale co-operative consumer stores.)

What a serious student of the structural changes taking place in the co-operative consumer movement in Western Europe would probably wish is that there should be a single Federation at the National level, with 300 and odd co-operatives scattered all over the country, directly affiliated to it. The National Federation should have a Regional Office and Warehouses with complete infrastructure in each of the 15 selected centres in the country so that each may cover 20 to 25 consumer co-operatives scattered around its location.

Such an arrangement would not only make the consumer movement a well-knit organisation but also would result in considerable cost reduction and could meet the consumer requirements more effectively and adequately.

DEVELOPMENT DIARY

April 11

National Textile Corporation, a new public sector undertaking, is registered. The Corporation will run textile mills entrusted to it by the Central Government.

April 12

A Rs 70-lakh woollen mill, the biggest public sector undertaking in Rajasthan is inaugurated at Bikaner. The mill will produce nearly half a million kilos of woollen yarn per year. Half of this will be exported.

A pilot plant for manufacturing sugar from beet root is started in Ganganagar in Rajasthan by the Ganganagar Sugar Mills, a Rajasthan Government Undertaking in collaboration with the Central Government.

April 13

The Prime Minister lays the foundation-stone of a unique village for children in Ahmedabad. The first of its kind, the village, called 'Balgram', will have 15 houses. Each house will accommodate eight homeless children, looked after by a mother, trained for the purpose.

April 15

Vishwabhakti, a ship constructed at the Hindustan Shipyard, Visakhapatnam is launched. This is the 48th ship to be launched by the shipyard, and is capable of attaining a speed of 17 knots.

April 16

A protocol is signed between India and the Soviet Union regarding the range of instruments to be produced at the Instrumentation Factory, Kotah.

The protocol provides for diversification of production in order to use the spare capacity at Kotah factory.

LOOKING BACK

YOJANA May 4, 1958

The tenth meeting of the National Development Council takes place this week-end to review the progress of the Plan in all the States. An important item on its agenda is the consideration of proposals made to change the pattern of the Community Development programme.....

We do not have the personnel necessary to man all the N.E.S. and C.D. Blocks. Even the administrative staff has had to be taken over from the existing bureaucracy brought up in time-worn traditions; it has been unable to rise to the revolutionary changes that we have sought to bring about. Disappointing as this staggering of the programme will be to many, it is best to face the facts squarely. What we do, we must do thoroughly. Opening new Blocks is not simply a matter of sticking more pins on a map. It requires trained personnel and money. We are short of both.

ABSENCE OF SOCIAL PLANNING TO ACHIEVE GROWTH

HARIPAD R. SUBRAMONIA IYER

WHATEVER the form of government, whether democratic or totalitarian, presidential or parliamentary, unitary or federal, the need for social planning for solving economic and social problems cannot be over emphasised. The aftermath of the First World War, the economic depression of 1930, the industrialisation process, the goal of a Welfare State as a compromise between Capitalism and Communism, rapid economic growth and scientific and technological improvements, etc., have been responsible for resorting to social planning in underdeveloped, developing and developed countries. Social planning aims at planned social change, of which economic planning is one form. A great deal of social planning need not necessarily be economic, since the social welfare services for the socially, physically and mentally handicapped have no direct bearing on economic growth.

The aim of social planning necessarily means the welfare of the entire population. In other words, the aim is to establish a welfare society, rather than a Welfare State A Welfare State need not be democratic, as one can see in totalitarian and socialist countries. It is equally true that social planning and centralised planning cannot co-exist.

As far as India is concerned, we are aiming at a social and economic order based on democracy and the values of freedom as embodied in the Constitution and in the resolution on the Socialist Pattern of Society passed at the Avadi Session of the Indian National Congress. These are the guide-lines of our social planning. With a view to realise the social and economic objectives of the Constitution we have launched Five Year Plans. But, it must be remembered, that we cannot achieve a Socialist Pattern of Society by merely launching the Five Year Plans. There must be adequate provision for social and welfare services as well as social security measures in the Central and State budgets. In fact, the social and economic objectives must be kept in view by the planners and policy makers while preparing the Five Year Plans and the Central and State Budgets.

Welfare State

The modern State is a social Welfare State, which is mainly concerned with social and economic development, besides the maintenance of law and order. The Indian economy is a mixed one in which both the public and private sectors have an equal and important role to play for improving the socio-economic condition of the people. Of course, the Government has a dominant role to play by evolving sound planning in the fields of social services, social welfare and social security services. It must also be remembered that Government is not the only employer and there are lakhs of employees working in industrial, commercial and business establishments and it is the duty of employers to provide social and welfare services and also social security measures to them. There is need to clearly define the role of public, private and voluntary social welfare agencies to deal with social problems, thereby making them partners in social and economic development. It is a pity that there is no social policy with regard to agricultural labourers who form 70 per cent of the population.

Social Policy

Everyone will endorse the view that there must be integration of social policy with economic policy. But no strenuous efforts have been made so far to translate it into action. Social policy must be concerned as part of general economic policy. Social planning and administration are two facets of the social administrative process; and the success of social administration solely depends upon sound social planning. Both the formulation and implementation of social policies and programmes at the Union, State and local levels have to be integrated with administration at all levels. In this connection the role of Panchayati Raj institutions, urban local self-governing institutions, voluntary social welfare organisations and co-operatives in formulating and implementing policies and programmes of social development cannot be overstressed.

A democratic Welfare State and a Socialist Pattern of Society, without social planning—both social policy and programme planning—is like a body without a soul. It is a truism that we are not able to eradicate the five social evils of illiteracy, ill-health, idleness, poverty and squalor in spite of three Five Year Plans. For example the percentage of illiteracy in India is 76 per cent and democracy and illiteracy cannot co-exist.

The need to evolve a cogent and progressive social policy for India and transforming it into social action for social and economic change cannot be over emphasised. It is a stark truth that the twin objectives of Indian planning are social and economic growth by means of rapid industrialisation through Five Year Plans and Community Development Projects.

Economic Development

There is a school of thought which believes that economic development will lead to social development. It is true that economic development preceded social development in Great Britain. But experience in the western countries has shown that greater emphasis on economic development has resulted in the creation of social problems

and everywhere there is a balanced, integrated approach to fight illiteracy, idleness, ill-health, squalor and poverty. India is committed to balanced social and economic development by means of planned development, and yet, our planners and policy makers have still to realise that social and economic development must go hand in hand.

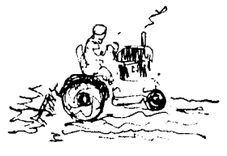
It is an axiomatic truth that social development and economic development are inter-related and inter-dependent and social development supports economic development. The decline in the percentage of allocation of funds for social and welfare services in the three Five Year Plans and, the top priority given to agricultural production in community development programmes is clear proof that emphasis is predominantly upon economic development. The main reason for this state of affairs is the lack of a clear-cut policy in the fields of social services, social welfare and social security.

It must be remembered that the budget is not only an estimate of anticipated revenue and expenditure, but also the proposed social and economic programme of the Government with a view to achieving social and economic justice. Not only should there be adequate provision for social and welfare services in the Five Year Plans, but also in the Union and State budgets. The role of public expenditure and taxation policy to reduce economic and social inequality cannot be overemphasised. Economic and social justice demands that the Central and State Governments should provide social and welfare services and also social security measures to the middle and low-income groups and also give them tax relief; instead of increasing the cost of essential services and adopting a policy of progressive taxation. The expenditure on social and welfare services as well as on social security services must form a significant part of the national income. The existing economic and social inequality among the people can be reduced by increasing income at the lowest and reducing income at the highest level.

Budget Proposals

The Central budget proposals, especially the increase in postal rates and railway fares, show that the social objectives enunciated in the Constitution have been relegated to the background, by giving concessions to the rich and not giving relief to the middle and low-income groups. The pattern of expenditure in the three Five Year Plans as well as the Union and State budgets since Independence has resulted in the rich becoming richer and the poor becoming poorer. It would appear that the constitutional obligation to secure social and economic order and the goal of a Socialist Pattern of Society have not been kept in view while preparing the Five Year Plans and the Union and State budgets. The reason is that there has been an imbalance between social and economic objectives in the Five Year Plans and the Union and State budgets. In other words, there has been an absence of balanced, integrated social and economic planning to achieve social and economic growth.

The recent report to the U.N. Economic and Social Council is an eye-opener for those who are interested in social development of Asia, especially India. The goal of a Socialist Pattern of Society and a democratic Welfare State can be achieved only if the existing economic and social inequality is removed by means of taxing the rich more heavily and giving relief to the middle and low-income groups thereby improving their general standards of living. A balanced and integrated Five Year Plan and Union and State budgets, taking into consideration the social and economic objectives of the Constitution, are the need of the hour. It is a pity that we have not laid down our social policies in clear-cut terms as a norm for social and welfare services to the needy sections of society. Social planning is a continuous process directed towards achieving social and economic justice. It is also a means to an end, the end being a planned society.



Public Administration

from Page 10

The Plan also favoured minimum inter-agency consultation, particularly in financial matters. It said "In the present functioning of the administration, consultation with other authorities is not always confined to broader matters ; instead, it is too frequent and too concerned with details and, therefore, impedes effective action. Exercise of financial control is one important aspect of this problem."

The Plan felt that the industrial undertakings would not succeed without the introduction of incentive schemes which were dovetailed to achieving reduction in construction costs, reduction in foreign exchange, improvement in methods of maintenance, use of substitutes and by-products, and simplification of work procedures.

While referring to the projects in the public sector, it was a refreshing change to see the element of 'profit' being emphasised, as a criterion, against which the success or the failure of a particular undertaking ought to be measured. This was a step in the right direction.

Documentary evidence of the official response to Planning Commission's recommendations on administrative reforms is not adequate. The Plan Reports do not say how well the suggestions made in the previous Plans were received by the Government. Qualitatively speaking, the discussion of administrative matters in these reports remains feeble and platitudinous.

In retrospect, one could say that whereas the First and the Second Plans looked at administrative problems in a clinical manner, the remedies they suggested touched a few modern ideas on administration. But by and large, these reports lacked a professional touch. It was only in the Third Plan that references were made to modern ideas for achieving administrative reform, although here, too, the influence of the nineteenth century bureaucratic traditions seemed to lie heavy on the thinking and the prescriptions.

ECONOMIC PLANNING IN FRANCE—

Lessons for India

The French ideas of economic liberty, no less than English mechanical inventions, brought about the Industrial Revolution in Europe. But, economic planning, as we know it in India, began only in 1947. Despite wide disparities of population, prosperity and other factors, conditions in India bear considerable similarity with those in France before planning was introduced.

N.C. JOHN

ANY fruitful discussion of the present French economic situation will have to take into account the role that France has played in world economic history. While her contribution to political thought and action is well known, perhaps not so well known is the key role that France has played in the economic sphere. The fact remains, however, that the *primum mobile* of the Industrial Revolution, which ushered in the present era of all-round prosperity for the world, was originally supplied no less by French ideas of economic liberty than by English mechanical inventions.

All modern States have before them virtually the same economic goals, though their other goals may differ materially. The economic goals revolve around raising the per capita income, at any rate in the long run. Every country in the world undertakes some sort of planning in the modern context. Even in the USA there is 'tentative planning' associated with the Council of Economic Advisers to the President. At the other extreme, in the birth-place of modern planning, the USSR, it is, of course, "a system of highly detailed and obligatory economic planning". However, the current series of economic reforms, incorporating many aspects of the Western free enterprise system, have not affected the basic tenor of Soviet economic planning. The French planning process is possibly the only example in the world in which the virtues of both private enterprise and command economy are combined in the most harmonious manner. That situation, however, should not blind one to the fact that the French system still retains all the basic ingredients of what has been called 'Western macro-economic planning'. Economic planning, in the French context, has been defined as follows : "*The Plan is a way of providing permanent arrangements for a collective and systematic reflection on the problems and prospects of the economy with a view to action*".

Every available evidence suggests that in the present context of India's economic development, we can learn more from the French system of planning than from that of any other country. It is obvious that many aspects of the two economies do not have common ground. The size of France is only about one-sixth of India's and her population less than one-tenth. According to a recent United Nations study, the per capita income in France was $ 1,493 in 1963, which gave her 12th position among 70 non-Communist countries ; while in India the per capita income was a mere $ 74 giving her the 67th place.

Yet, not many years ago, certain significant aspects of French economic life exhibited some of the characteristics which are present in India today. Behind today's dynamism, France had had generations of technical and organisational stagnation. It has been said that one of the main reasons why France lagged behind Britain in economic growth in the 19th century was the rigid French social system. Although serfdom was abolished in France in 1789, long before it was done in other European countries, French agriculture was untouched by progress for quite some time, because of immobility resulting from equal property inheritance, as opposed to primogeniture in England, and *Morcellement* which is the French counterpart of the Indian 'subdivision and fragmentation of holdings'. And, the first take-off came in Britain and not in France because the French were "caught up not merely in a class society but in a caste society". Of course, the French people have now moved far ahead from their position a century and a half ago.

PLANNING BEGINS

The era of economic planning in France was inaugurated in January 1947, mainly due to the efforts of Jean Monnet, after whom the First Five Year Plan was named. The Plan, which has been called "one of the most realistic and successful programmes of economic reconstruction ever achieved in French history", helped to implant in the French economy both the institutional structure and

procedures of planning. The Second Plan, 1954-57, and the Third Plan, 1958-61, continued with greater vigour the programmes initiated earlier.

By far the greatest breakthrough in economic planning in France was brought about with the inauguration of the Fourth Plan in 1962, which completed its course in 1965. Apart from further pushing up the earlier programmes, the Fourth Plan crystallised the scattered efforts made in the previous Plans to widen the base of national participation in regard to the formulation and the implementation of development programmes. At the same time, Parliament as well as number of consultative bodies, representing government and a wide variety of private interests, were effectively drawn into the mighty current of planning for the first time. It represented the boldest and most ambitious attempt at economic planning ever undertaken by any country within the framework of a democratic set-up. And, the experiment has proved immensely successful and has produced an economic 'miracle'. The Fifth Plan, 1966-70, aims at giving further momentum to those programmes.

There are many lessons which India may well draw from the French scene. In the first place, the French Plans are not rigidly forced into the artificial strait-jacket of the popular five-year period. The First Plan was originally scheduled as a four-year plan but was later extended by two more years and thus actually became a six-year plan. There was a plan holiday for the next year, namely, 1953. The Second, Third and Fourth Plans were all four year plans. The current Fifth Plan, however, is a five year plan. In France the Plans start with the calendar year which, incidentally, is also the budget year for the country.

INSTITUTIONAL FRAMEWORK

The institutional framework of planning in France is also of great relevance to India. The top planning office, the General Planning Commissariat, can be said to function by means of 'power through persuasion' and its work "calls for the skills of the diplomat, as well as the knowledge of the economist". The Commissariat is, what may be called, an economic pillar of strength in the shifting sands of French politics. While France has so far had 23 Finance Ministers in almost as many years since planning was introduced, there have been only three "Commissaires General du Plan," which roughly corresponds to the post of Deputy Chairman of the Planning Commission in India.

The French General Planning Commissariat has only some 150 persons on its staff, a few of whom are deputed from other government departments. In striking contrast, Planning Commission in India employs a little over 1,800 persons. The Administrative Reforms Commission, in its final report, has drawn attention to this and has suggested a drastic reduction in the staff of the Commission. The French experience cannot, however, serve as a model for India ; at any rate, in the present context.

The wide national participation in the formulation and implementation of planning programmes is "the principal innovation in French planning". Here France offers an important lesson for India. The structure of the French planning machinery, especially at the middle and lower levels, consists of employers, workers and civil servants. In fact, various forms of functional representation to industry and trade unions in the developmental effort are prevalent in other European countries too, notable among them being UK., Sweden, Norway and the Netherlands. But, the French effort in this regard, especially since 1962, has no parallel in any other country. The Administrative Reforms Commission in India has also suggested that private sector participation in planning should be increased. Another notable feature of the French planning technique, which India can ill afford to neglect, is the dominant role assigned to experts.

A significant related point is the place of the bureaucrat in the scheme of planning. In France, the bureaucrat is a very helpful agent in the smooth working of the planning mechanism and he co-operates adequately with the entrepreneur in the various programmes of development. But, in India, the bureaucrat still belongs to a 'superior' class and hence he cannot co-operate but can only dictate.

REGIONAL PLANNING

Perhaps the greatest lesson that India can learn from the French scene is in the field of regional planning. Traditionally there has been a marked difference in development between the north and north-east of France, on the one hand, and the west and south on the other. A massive effort is now afoot to correct the imbalance. Other Western countries also, like Italy, which face similar problems, have awakened to the need for effective solution of a similar situation. However, among all countries of the West, perhaps the most systematic effort in this direction has been made in France. The French Fourth Plan marked a new departure by specially providing for manpower and industrial development of the backward regions; and the Fifth Plan has been carrying the effort a step further. For example, the programme for 1967 included the stepping up of regional grants for new plants set up in such areas. And, the General planning Commissariat's 'prospective' study now envisages necessary guide-lines for a more comprehensive regional development policy for 1985.

In India, on the other hand, regional planning has possibly been the most neglected aspect of planning. As a result, some regions of the country have so far remained economically backward. Unless the Fourth Plan, which is to begin in 1969, takes up the matter as a significant plank in its programme of development, Indian planning will not only not achieve its "ultimate goal" of a "good life" for every citizen, but will probably endanger the very political stability which it seeks to promote.

(turn to PAGE 24)

IMPACT OF FOREIGN AID on Indian Economic Development

L. K. MITRA

FOREIGN aid is considered as a *sine qua non* of India's developmental planning which places an equal emphasis on defence. But the *raison d'être* of a foreign aid programme is a matter for public accountability because of its impact on the country as a borrower.

To be precise, according to the U.N. publications, foreign economic aid is outright grants and net long-term lending for non-military purposes by Governments and international institutions and "refers to those parts of capital inflow which normal market incentives do not provide". It thus includes, under this discussion, foreign loans—hard and soft, tied and untied—technical assistance, grants and official donations, foreign participation in equity capital and assistance in the form of consumer goods.

The principal purposes for which India availed herself of foreign aid were, first to make up the leeway in her factor-proportions, specially in her capital input and technical know-how ; secondly, to project economic and social overheads as a supplement to an in-built growth structure and, thirdly, to fill a consumption goods gap. From the point of view of aid-givers, foreign aid stems from a sense of duty on the part of the richer nations, "of enlightened self-interest combined with basic impulses of religion, ethics and humanity to help the less advanced peoples".

The mechanism of foreign aid to India has followed more or less the pattern of such aid from the developed to other underdeveloped or developing countries, but hardly the pattern of aid from one developed country to another in the post-war period. In the case of India, as of other developing countries, aid to the public sector predominates, the proportion of hard loans is high and of tied loans the highest. Foreign participation in the share capital and institutional loans are less than even during the pre-independence days. Grants in the form of technical assistance and consumer goods are received mainly on governmental and United Nations accounts. Aid from international financial institutions is received for balancing our unfavourable balance of payments, and financing capital imports. The P.L. 480 assistance is a class by itself, as it now stands for a mixture of partly hard and partly soft loan, and partly a loan and partly a grant, with its varied impact on our economy.

NORMS

Let us now see whether India is able to follow some of the norms for an aid-receiving country, which are, *inter alia*, as follows :

(a) Aid from outside a country can only be helpful to its development to the extent that the Government and the people of the country organise their own resources. Foreign aid can at best be *marginally* helpful to a developing country. Can we say that India is *effectively* committed to the development process and *effectively* mobilising her human and material resources so that the "marginal" impact of foreign aid is felt on her economic growth ? The percentage of foreign aid to gross investment is increasing during Plan periods, but the marginal rate of increase in the percentage of gross investment to gross national product is decreasing.

(b) The aid-receiving country must organise the in-built structure by laying out the fundamental social overheads which can be financed without inflation, mostly through the initiative of the Government. The position of India in this regard has been, to some extent, haphazard and measures adopted are rigged with long fruition-lag.

(c) The question of repaying capacity is no less important than that of absorptive capacity. Apart from the "transfer problem" which foreign loans give rise to, India is frightfully on the brink of international bankruptcy in spite of a heavy dose of devaluation in order to resusciate her repaying capacity through higher exports and the painful policy of inducting fresh import of capital at a considerably higher cost.

SOME ASPECTS

Some aspects of the effects of foreign aid on Indian development may be set forth for immediate consideration :

Capitalisation of loan interest—foreign loans of India are estimated to bear servicing charges of Rs 2,284 crore at post-devaluation rates over the Fourth Plan. No fund has yet been created for the payment of this amount; on the contrary, the amount seems to be capitalised by taking fresh foreign loans. From the accounting point of view, it may be adjustable, but from the financial viewpoint, this is rather unacceptable. The burden

GRAM SABHAS HAVE YET TO EMERGE

Readings on Panchayati Raj. Edited by George Jacob. Published by the National Institute of Community Development, Hyderabad. Pages 169. Price Rs. 12

M. K. Dharma Raja

AN admirable study which provides interesting reading in the context of Government's latest report on the working of Panchayati Raj institutions in the various States. It must, however, be stated that the chinks in the collection are the rather discursive analyses on Madras and Rajasthan; one feels that this is conceded, though vaguely; but is partly made up by an incisive general assessment.

This volume includes studies of certain aspects of the working of Panchayati Raj institutions in six States—Gujarat, Maharashtra, Andhra Pradesh, Rajasthan, Madras and Mysore. All except the one on Mysore were sponsored by the National Institute of Community Development. Four were undertaken by Universities—on Andhra Pradesh by Andhra University, Gujarat by Baroda, Maharashtra by Poona and the Rajasthan study by the Rajasthan University. The All India Panchayat Parishad contributed the Chapter on Madras State. "Panchayats in Mysore" is based on a doctoral thesis by K. S. Bhat submitted to Bombay University.

We go through a wide-ranging spectrum from State to State, where the size and population of village Panchayats vary widely and often within the State itself. The executive of the village Panchayat consists of five to 31 members elected by the residents of the area on the basis of adult franchise. In all the six States, except in Rajasthan, the Panchas elect the Sarpanch from among themselves. In Rajasthan, the Sarpanch is directly elected—almost an exercise in fashioning a village republic.

Perhaps an experiment worth the trial, and more than that as Panchayati Raj, has now been accepted as the institutional framework for rural development administration.

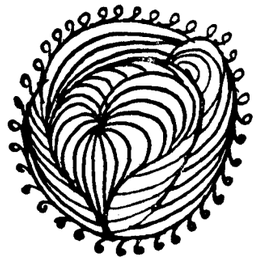
In most of the States, the Panchayat Samiti is at the Block level. Three States—Andhra Pradesh, Madras and Rajasthan—conform to this pattern; while in the other three—Gujarat, Maharashtra and Mysore—the Panchayat Samiti is at the Taluk level. The Samitis are indirectly constituted in Andhra Pradesh, Madras, Gujarat and Rajasthan. In Mysore, the Taluk is divided into constituencies and, from each—two or three members are directly elected to the Taluk Development Board which corresponds—to the Panchayat Samiti. The Samitis are enstrusted with development functions in all the six States.

Variations in the functions and powers of Zila Parishads furnish material for our planners of self-government institutions in the districts which are seen to be bases of development from grassroots. In Madras and Mysore, the district development council, which corresponds to the Zila Parishad, elsewhere is a coordinating and advisory body; in Andhra Pradesh and Gujarat the Parishad has specific executive and administrative functions; and in Maharashtra it is the strongest of the Panchayat bodies vested with executive functions.

Of the six chapters, those relating to Gujarat and Maharashtra deal only with village Panchayats. The Andhra study confines itself to Panchayat Samitis. The Mysore review deals with both village Panchayats and Taluk Boards, but examines only one aspect—the emerging patterns of leadership in these bodies. The studies conducted in Madras and Rajasthan cover the entire gam t of Panchayati Raj, but generally fall short of the standard maintained in the other chapters.

The most valuable section is the general and comparative assessment by the editor of the conclusions arrived at in the six studies appearing in the volume. The part played by caste and kinship in the composition as well as in the functioning of Panchayti Raj institutions, the new ground broken and awareness created in the community for social service and economic programmes, willingness to enforce taxation, the role of political parties in influencing the echelons of the Panchayati Raj, the nexus of official—non-official relationship—these are among the questions comparatively examined by George Jacob.

Votaries of an immediate switch-over to decentralisation will not be much enthused over the functioning of the Gram Sabha or the Nyaya Panchayat in our new setting. The three-tier structure of the Panchayati Raj is meant to be rooted in the Gram Sabha—the meeting of all adult members of the village constituting a Panchayat. The studies compiled show that the Gram Sabhas have not as yet come into their own. While the Gram Sabha is yet to emerge as an effective forum, one fails to see practically any aspect of satisfactory disposal of proceedings by the Nyaya Panchayat. But on the positive side is the observation that the responsibility to build up the Panchayat or Samiti or Zila Parishad fosters a new attitude of self-confidence and effort as against that of helplessness and of looking up always for aid and guidance.



BENEFITS OF REGULATED MARKETS

AMBA PRAKASH MATHUR

MERELY increasing production does not increase the returns to the farmers. The farmer should also be given a reasonable price for his produce. In ensuring fair price to the farmer, the regulated markets play a vital role. In a regulated market the farmer enjoys the following benefits :

1. Farmers are represented in the management of the market.
2. Sale is conducted by open bid system.
3. Market practices are standardised.
4. Market charges are fixed at a fair level ; unauthorised addition to charges is prohibited.
5. Market intelligence is correct and up-to-date.
6. Weighment is done with authorised weights and scales.
7. Delivery is immediate.
8. Payment is full and prompt.
9. Sellers are protected from exploitation and cheating.
10. Essential amenities and facilities are provided for the farmer and his cattle.

> Regulated markets ensure fair price to the producer and protect him from exploitation by middlemen.

Out of the 3,300 wholesale markets in the country, 1,590 have so far been declared as Regulated Markets under the marketing legislation in the different States.

In most of the regulated markets, the sale is conducted by the method of open auction. Agricultural produce is exhibited in heaps and all the prospective buyers, who are licence holders of the market committee, offer their bids. The highest bid is accepted after obtaining the consent of the farmer. Full particulars, such as the names of the seller, the commission agent and the buyer, the quantity of produce sold, the highest price offered, are entered in the auction register by the official of the market committee ; and each entry is signed by the commission agent and the buyer to avoid any dispute of claims. In a few regulated markets, particularly those in Mysore and Madras States, the produce is sold by 'tender system' : the highest tender is accepted. No other system of sale is allowed in a well-regulated market. Thus a farmer gets the maximum price for his produce under the direct supervision of the market committee.

Weighment of the produce is done immediately after the sale in the presence of the farmer in the market yard either by a licensed weighman or by officials of the market committee. The weighmen are sent in turns by the Market Secretary. The beam scales and weights are checked regularly by the staff of the market committee. The practice of taking more than 40 seers to a maund has been abolished.

The practice of taking arbitrary quality deductions, charity allowances and many other illegal charges has now disappeared. Handling charges incurred subsequent to sale and borne formerly by the farmer are totally eliminated with the system of delivery.

Payment to the seller is made immediately after the sale. In an unregulated market, the seller hardly gets the payment on the spot ; and if he insists on immediate payment, sometimes he has to forego a considerable portion of his dues by way of interest at a high rate for 15 to 30 days.

The actual benefits to the farmers in monetary terms are thus considerable. For instance at the Gondal market in Gujarat, prior to regulation, sellers had to pay Rs. 1.56 to Rs. 3.12 per one hundred rupees as commission. The charges after regulation are fixed as follows :—

Commission—one per cent.

Weighing charges—16 paise per candy (20 maunds)

Coolie charges—3 paise per maund (now 40 kg.)

Market fee—16 paise per Rs. 100

The weighing and coolie charges are shared by both the seller and the buyer.

Before regulation, 41 seers were taken to a maund in addition to the samples of 1 to 2 seers by the buyer. Besides, the farmer was expected to hand over handfuls of the commodity as extra after each maund.

The irregularities in accounts are now eradicated by the practice of triplicate bills. One copy of the bill is given to the farmer, another is sent to the market committee and the third is kept by the commission agent.

At Gondal market, a savings of more than one lakh rupees accrued to the farmer-sellers during a period of 18 months. A break-up of the savings is given below :

Commission ...	Rs.	31,000
Charity charges ...	Rs.	7,720
Savings through correct weighment...	Rs.	56,000
Savings through the abolition of the practice of giving one paisa per maund on sale proceeds ...	Rs.	13,440
Total :	Rs.	1,08,160

PLANNING FORUMS

FOUR CLASSES IN ONE ROOM

WITH ONLY ONE TEACHER

SEVEN MYSORE VILLAGES SURVEYED

THE Planning Forum of the Government College, Tumkur, Mysore undertook a survey on the "Study of the Compulsory Education and its Problems" in seven villages in Mysore.

Five primary schools with 16 teachers were catering for these seven villages. There was a big gap between the number of admission and the number of attendance at the classes. About 115 students were absent for long duration.

The chief hindrance to the success of the compulsory education scheme was extreme poverty of the people. These people could not afford to send children to schools as they were a great help in tending the livestock and domestic work, while the parents were at work.

Many parents did not feel the need to educate their children. There was the usual prejudice against female education.

The survey revealed that almost all the schools were short of accommodation. Many school buildings were in dilapidated condition. In some cases a single room was being used for holding all the four classes. In some schools there was only one teacher for all the four classes. At times the over-burdened and ill-paid teacher had to act as a cook too. For example, under the "CARE" organisation of U.S.A. ill-fed children in schools are supplied with vitamin-rich food, and the work of distribution of such food and, in some cases, even the cooking of it, fell to the lot of the teacher.

In many instances, the appointment of a teacher was done in his own village. According to the opinion of a large number of parents, primary school teachers acted more like politicians than teachers. Majority of the teachers were engaged in various other activities including cultivation of their own lands. To them teaching was only a part-time job.

It was also found that the Attendance Inspectors had no powers to compel the parents to send their children to schools.

The study team selected 706 families for this purpose, and found that there were 1,775 literates in these families. Of these, 1,258 were males and 517 females. The average literacy per family was 2.5 (male—1.76 and female—0.7). Among the selected villages Kadaba topped the list with 1,197 literates. Togarighatt with only 5 literates was at the bottom of the list.

There were 811 children in the age group 5 to 11 years in the selected families. Out of these, only 74.8 per cent attended any school. From those attending schools, 68.3 per cent were boys and 31.7 per cent girls.

The composition of the families was heterogeneous. Agriculture was the main occupation of 60 per cent of the families. The rest were engaged in small retail business, Government jobs and other professions. The average income of a family was less than Rs 200 a month.

STUDENTS BUILD HOUSES

—A FORUM WITH A DIFFERENCE

IT is rarely that one comes across a Planning Forum with a difference, which goes off the beaten track of socio-economic surveys, seminars and excursions. The Planning Forum of Vidyasagar College, Calcutta, has set an example and a precedent in social work. In the 'housing starved' city, the Forum has organised a housing co-operative and built two blocks of flats which have been given over to 40 families who now own and occupy them. Having all the modern amenities of life, these flats are a sharp contrast to the original site where unhealthy cattle-sheds abounded. In the area have been built a community hall, servants' quarters and a tubewell for more filtered water.

Even in calcutta with its acute housing problem, the Planning Forum had an uphill task in seeing its 'own your flat' scheme to fruition.

People did not like the idea of joining a scheme which did not give them exclusive rights over the land on which the building would stand. Finally in 1961 the Forum persuaded 36 persons to join the scheme. The Vidyasagar Co-operative Colony Society was registered and began functioning the next year.

The success of this scheme has had its beneficial influence. Two other colleges in the city, the City College of Commerce and the Surendranath College, have built similar houses. In some respects they are better. The Government of West Bengal has followed suit by introducing 56 flats on these lines in Manicktala area in East Calcutta.

Inspired by its own success, the Vidyasagar Planning Forum has sponsored a much biggar co-operative housing scheme at the Salt Lake City Extension area, at a cost of Rs. 60 lakh.

CHHELE KAMANO DIDIMONI

LONG before India embarked on a massive programme to halt the "population explosion," a modest pioneering effort was launched at the Dunlop Rubber Factory at Sahagunj in West Bengal. The scheme had a rather casual beginning when Mrs Jackson, the wife of the Works Manager, discovered to her horror that the wife of a machine shop worker living in the workers' colony had delivered her 13th child And, this was not all. She found that many other workers had equally large families, and were faced with similar problems. The answer, she was convinced, lay in modern methods of family planning. Thanks to her efforts a family planning unit was set up at the factory hospital in May 1955. Dunlop came forward

Mrs Banerjee on her rounds

with a handsome grant and a lady doctor of the Indian Red Cross agreed to visit the unit once a month to train women in family planning methods and to motivate workers' wives to use modern aids for limiting the size of their families.

Once the idea had been planted in the minds and thoughts of the workers it began to germinate, until the unit has come to be regarded as one of the most successful in the country. In two years, more than 600 vasectomy operations were performed, representing ten per cent of the workers. And, what is more significant, the motivation was provided by a hard, even if small, core of social workers among factory employees.

For the women, the moving spirit is the social worker of the hospital in the factory estate. She is the smiling, buxom Mrs. J. Banerjee, who moves from house to house on her bicycle. Everybody knows her—the workers, their wives and children, who have a special name for her. In Bengali they call her *Chhele Kamano Didimoni*, which means "the elder sister who helps to reduce the number of children." Not a very elegant name, to be sure, but how appropriate! It is Mrs Banerjee's job to train women in the use of family planning devices and to advice mothers on baby care. Conventional family planning devices are given free to the women, who come to her with their problems as to an elder sister; and there is always a word of cheer, of advice and, of course, an understanding smile from the "elder sister".

MINISKIRT HAZARDS

THE "Miniskirt", which, it seems has now come to stay, no longer attracts the wide-eyed stare of the mere male or causes traffic jams in the busy rush hour. It has been there far too *long* to be "interesting" any more. Whether in the college campus or in the crowded cities, it is an accepted aberration of the female propensity for using her dress (or lack of it) to give an extra heart-beat to the opposite sex.

IGNORAMAN

Wants to Know

If National
Crimes will be
defined
during the National
Crime Prevention Week

But, there are other hazards of wearing skirts which are climbing higher and higher above the knee. These come from the weather, especially during the winter months when the cold, biting wind makes discomfort more pronounced. Asked about this, an American school girl said that this was "just the price you have to pay for beauty." As far as she was concerned this was the end of the matter. But there are other girls who prefer to protect themselves against the cold. In America, some wear tights and long stockings. There are still others who prefer to hang up their miniskirts in the winter and wear them only when it is warm. Another girl likes to wear a hose which keeps her warm. Among the most common equipment girls use to offset the cold weather are textured stockings, knee or calf length boots and tights. But, even Father Christmas cannot make them change their sartorial preference.

REGD. NO. D-876

NEW LIFE STIRS IN VILLAGES

India lives in her villages and the development plans aim at improving the life in these villages.

These two quiet village —one in Kerala (above) and the other in Mysore (right)—have their share in this common effort; the former is engaged in eradicating malaria, and the latter is taking to new methods of agriculture.

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