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Development Diary

Forex Reserves Up

India's foreign currency reserves rose by $177 million to $43,355 million for the week ending June 29. The foreign currency assets (FCA) were up by $177 million at $40,635 million according to the Reserve Bank of India. Gold reserves and special drawing rights were at $2,816 million and $4 million respectively.

The foreign currency assets expressed in dollar terms include the effect of appreciation/depreciation of non-US currencies.

First Hydro Project in CIS Region

The Bharat Heavy Electricals Limited (BHEL) has successfully commissioned the first ever power project in the Central Asian region.

The 71-MW Mingechur Hydro Power plant in Azerbaijan has been completed by BHEL in a record time of 16 months.

BHEL has so far commissioned 32 hydro sets of 1364-MW outside India in various countries including Nepal, Malaysia, Thailand, New Zealand and Bhutan, besides Azerbaijan.

Aid for Yamuna Action Plan

The Centre has approved Rs. 22.18 crore for projects under Yamuna Action Plan (YAP) phase-I in Haryana.

The amount would be spent for making a provision of additional interception and diversion sewers, low cost sanitation units, sludge drying beds and pilot projects for reduction of faecal coleforms in six major towns of the state, namely Yamunanagar-Jagadhari, Karnal, Panipat, Sonepat, Gurgaon and Faridabad.

Also a pre-feasibility report regarding YAP phase-II, which is under consideration has been prepared for augmentation of sewage treatment facilities and for provisions of treated effluent channel.

A scheme for the holy city of Kurukshetra costing Rs.49.63 crore for interception and diversion sewers, sewage treatment plants, proper drainage, low cost sanitation toilets and improved wood-based crematoria had been forwarded to the Centre for approval under National River Conservation Plan.

This project would also include arrangement of water supply and drainage facilities in 52 villages within 8 km radius of the holy city.

Five SEZs for Maharashtra

The Maharashtra government will spend Rs.2000 crore to build ten new projects across the state , which include five Special Economic Zones (SEZs) in Nagpur, Aurangabad, Guhagar in Ratnagiri district, Sinnar in Nasik district and Kagal in Kolhapure. The SEZs will come up through joint venture routes.

The ten new projects include a Bio-technology Park in Hengwadi phase II, Floriculture Park in Talegaon Industrial Area, Agro bio-Tech Centre at Jalna, Pharmaceutical Bio-Tech Centre at Pune, Wine Parks (grape parks) at Sangli and Nasik and an Indian Institute of Software Engineering. All this projects will taken up in a next couple of months and when built they will accelerate the industrial recovery of the state.

Modest Export Target

The government has announced an export target of $49.7 billion, envisaging a 12 per cent growth during 2001-2002. This is considerably lower than the 19.8 per cent growth recorded last year.

The modest target has evidently been fixed in view of the economic slow down in the US and Japan, which are the major export markets for India. The recessionary conditions are gradually extending globally and low export growth recorded during April and May has made it clear that achieving double digit levels would be a considerable task this year.

Among the various sectors which are expected to show significant growth this year are chemicals and related products, ores and minerals, electronic goods, leather and leather manufactures and some agricultural and allied items.

As for the textiles sector, the target is fixed at $13.7 billion, projecting a growth of 13.4 per cent.

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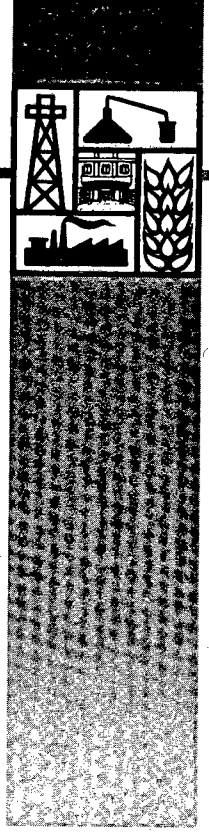

yojana

Beacon

Let noble thoughts come to us from every side.

—Rigved

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Five Decades of Planning

K.R. Debnath

Planning cannot be successful as a routine based bureaucratic exercise and it is high time that we take adequate steps to strengthen it as a people's movement in which people and popular institutions should be interested in active participation and sharing of benefits.

COMPLETING FIFTY years of a chequered career, economic planning in India is now poised for facing the challenges of new millennium. Among the various contributions, particular mention may be made of 'Planned Economy for India' prepared by M. Visveshwaraya, 'Bombay Plan' prepared by a group of prominent industrialists, 'People's Plan' prepared by M. N. Roy and the 'Gandhian Plan' prepared by Shriman Narayan. As a maiden effort the Indian National Congress constituted the National Planning Commission in 1938 with Pandit Jawaharlal Nehru as the Chairman; but it received a fatal blow from the Second World War. This was followed by the constitution of advisory Planning Board which also could not survive due to the partition of India. Finally, in 1950 the Union Planning Commission came into being to usher a in new era of planning with the prime objective of assessing the country's material, capital and human resources and formulating a "Plan for their most effective and balanced utilisation". (Report of the First Five Year Plan: Planning Commission : Govt. of India). In due course, the country's broad socio-economic goals which came to be laid down in the Constitution of India under the Directive Principles of State Policy helped a lot in deciding about the approach and objectives of planning.

Being highly impressed by the success of Soviet Five Year Plan during his entourage to Russia in 1927 Pandit Nehru was inspired by the idea of trying this experiment in his own country. It was only after independence that he could initiate steps in this regard and entrust the task of evolving a suitable model for the Second Plan to Prof. P.C. Mahalanobis, the then Statistical Advisor to the Prime Minister of India.

The learned Professor did a splendid job by evolving a two-sector Plan model closely resembling the growth model developed by Feldman in Soviet Russia. Prof. Mahalanobis emphasised the crucial role of large investment in heavy industries at the early stage of planned economic development in India. Therefore , the Second Plan was formulated to provide, inter alia, considerable stimulus to the growth of basic and heavy industries mostly in the public sector.

As the apex planning body, the Union Planning Commission, though without executive authority, was designed to wield considerable power as the advisory panel in formulating and approving the plan proposals and overseeing their implementation. It was decided that the Prime Minister should be its Chairman who would be assisted by a wholetime Deputy Chairman of high calibre as the next in command. The first Prime Minister of free India Jawaharlal Nehru became the first Chairman of Planning Commission in 1950. His search for a dynamic wholetime Deputy Chairman resulted in the selection of G.L. Mehta, a prominent public figure who combined academic accomplishment with a brilliant business career. The successors of Mehta included a galaxy of luminaries such as V.T. Krishnamachari, Ashok Mehta, D. R. Gadgil, D. T. Lakdawala, N. D. Tewari, Y. B. Chavan, Man Mohan Singh, Pranab Kumar Mukherjee and K. C. Pant.

In 1951 the First Five Year Plan was launched with the overall objective of initiating a process of development which will raise the living standard of the people and open up new opportunities for a wider and more varied life. Actually the First Plan addressed itself to the

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immediate problems of food shortage and agricultural stagnation. In 1957 Nehru himself characterised the First Plan in the following words during his speech at the National Development Council, "We had rather an easy time in the First Five Year Plan, because we had not stretched ourselves. We just took what there was and called it a Plan." (Quoted from 'Nehru :The Years of Power' by Geoffrey Tyson).

The Second Plan (1956-57 to 1960-61) sought to fulfil two broad objectives of establishing a socialistic pattern of society and laying the foundation of a strong industrial economy. This Plan provided a stimulus to large scale industrial development, economic growth, employment generation and progress of science and technology.

The major objectives of the Third Plan (1961-62 to 1965-66) included greater emphasis on agricultural and rural development, boosting of exports, expansion of employment opportunities and development of education, health and other social services. This Plan envisaged the growth of national income at the rate of 5 per cent per annum; but could achieve only 2.2 per cent per annum. Since the Third Plan period the national economy had been undergoing severe stresses and strains due to various destabilising factors like wars, crop failures and devaluation of currency. All these largely accounted for the depressing performance of the Third Plan which was followed by three Annual Plans (1966 to 1969) signifying a virtual plan holiday.

The Fourth Plan (1969-70 to 1973-74) laid stress on increasing agricultural production, reducing reliance on foreign aid and also improving the conditions of underprivileged and weaker sections of the society. With its predominant thrust on the acceleration of economic growth it tried to reach the target of 5 per cent growth of national income per annum but could achieve only 3.4 per cent per annum. In fact, both the Third and Fourth Plans represented a period of downswing in the growth rate of national income.

A revival of growth rate which touched the level of 6.4 per cent in 1999-2000 reflected some resilience of the economy. The position may be expected to improve further in view of the government's determined bid to go ahead with the second generation reforms more vigorously.

Starting in the difficult context of a runaway inflation seriously eroding the purchasing power of the people, the Fifth Plan (1974-75 to 1977-78) aimed at controlling inflation and stabilising economic situation. After covering four years of implementation this plan came to an abrupt halt, as it was decided to forego the fifth year and rather initiate a fresh plan with new priorities and programmes. By achieving an annual growth rate of 5.2 per cent this plan started on confident strides towards steady rise in the growth rates.

The major thrusts of the Sixth Plan (1980-81 to 1984-85) included poverty alleviation, development of infrastructure and expansion of investment and employment outlets. By fully achieving the target of 5.2 per cent annual growth rate this plan showed an encouraging prospect of reaching a higher growth trajectory.

The Seventh Plan (1985-86 to 1986-90) relied heavily on the policies and programmes for increasing food production, raising capacity utilisation and productivity, stimulating export promotion and effecting import-substitution, increasing employment opportunities and initiating special drives for poverty alleviation. With a massive public sector outlay of Rs. 1,80,000 crore the Seventh Plan could achieve an annual growth rate of 6 per cent, exceeding the target of 5 per cent.

The Eighth Plan (1992-93 to 1996-97) broadly utilised the growth stimulus provided by its predecessors and emphasised the following four objectives as the vitally important ones_

(i) to arrest the rapid growth of population and accelerate employment generation:

(ii) to allocate higher financial outlay for the development of social services:

(iii) to develop infrastructure with a view to providing the much needed basic facilities for the expansion of productive activities.

The total outlay envisaged by the Eighth Plan showed a substantial step-up of 141.17 per cent over the outlay provided under the Seventh Plan. With a Plan allocation of Rs. 4,34,100 crore the Eighth Plan achieved a growth rate of 6.5 per cent annum and created employment to the tune of 45 million as against the total estimated unemployment of 58

million during this plan period. Having regard to the growth performance of the Seventh and Eighth Plans the Ninth Plan target of 7 per cent annual growth rate is considered feasible with much needed investment support and adequate fiscal discipline. Encouraged by the rising growth momentum of the Seventh and Eighth Plans the Ninth Plan envisaged a growth rate of 7 per cent; but some unforeseen circumstances created impediments. In 1997-98 the growth rate plummeted to 5 per cent. Subsequently, more disturbing factors like political instability, Kargil conflict (1999) and oil price hike (2000) inhibited progress so much so that the achievement of the revised target of 6.5 per cent appeared to be very doubtful. However, a revival of growth rate which touched the level of 6.4 per cent in 1999-2000 reflected some resilience of the economy. The position may be expected to improve further in view of the governments determined bid to go ahead with the second generation reforms more vigorously.

The revised public investment target of Rs. 270400 crore fixed for the last two years of the Ninth Plan (aiming at the growth target of 7 percent) looks a bit ambitious (vide Midterm Appraisal of Ninth Five Year Plan 1997-2002, Planning Commission); but all the same it may be well within reach by exploiting successfully the yield-potential of taxation, borrowing and IEBR (internal and extra budgetary resources). Moreover, among the promising new thrust-areas of the Ninth Plan particular mention may be made of wider application of the fruits of breakthrough in production and information technologies, improvement of computer penetration, strengthening of R & D and manpower base and boosting of hardware and software exports in a big way.

Lessons

This hurried review of the Five Year Plans coming in panoramic succession is intended to serve as a tribute rather than serving as a critical appraisal. The under lying truth deserving serious attention is that the failures of planning are as significant as its success; because success gives us the confidence to forge ahead while failures of planning provide useful lessons. Among the many lessons which make us careful enough to avoid repeating the past mistakes in future the following stand out most prominently:

(i) Planning cannot be successful as a routine based bureaucratic exercise and it is high time that we take adequate steps to strengthen it as a people's movement in which people and popular institutions should be interested in active participation and sharing of benefits. The benefits of planning should trickle down to the weaker sections of the society.

(ii) Checking the rapid growth of population as well as inflationary rise in prices should be accorded very high priority.

(iii) Mere growth of national income may be a necessary but not a sufficient indicator of economic development in a developing country suffering from poverty and inequalitites of income and wealth. Even when the annual growth rate goes up to 7 per cent we can hardly feel complacent: because we are still to go miles in eradicating rampant illiteracy and mass poverty. Meeting the basic needs of the people and providing gainful employment to the millions of unemployed.

(iv) The pattern of investment should be considered to be as important as the volume of investment. Keeping this in view the sectorial priorities should be rearranged in an unorthodox but realistic manner.

(v) With a view to ensuring sound environmental management laying special stress on pollution control, disposal of waste materials and restoration of fragile eco-systems the eco-development programmes should be implemented more seriously on a much bigger scale. ❐

Urban Population Up

The urban population in the country grew by 2.1 per cent in the past decade, with Tamil Nadu and Maharashtra leading the states in urbanisation and Delhi and Chandigarh recording maximum urban population at 93 and 89 per cent, respectively. The total Indian population stood at 1027 million, of which 742 million lived in rural areas and 285 million in urban areas.

Anatomy of Rural Indebtedness : A Case Study

Gautam Purkayastha

The strategy for creating a 'poverty-led indebtedness-free' society in rural areas has to be multi-pronged. To achieve this holistic goal the mahila samitis, youth societies, Panchayat members, teachers and students organisations need to work together to mould public opinion against all pervasive corruption at the implementation level of the developmental schemes.

THE STUDY of incidence of indebtedness, its nature and size assumed special significance in modern times. Indebtedness is no longer looked as the sign of economic weakness of the borrower, especially after the tremendous growth of the institutional sources of credit. In the present day economy, rise or a decline in the incidence of indebtedness is viewed neither with alarm nor with complacency without relating it to the end use, source and few other strategic variables.

The UGC sponsored present study includes 256 households drawn from 12 villages under the jurisdiction of Tinsukia district in Assam. To ensure spatial coverage of the district, 6 villages were selected from the remote areas while the rest located nearby urban centres. In this report, an indebted household is defined as a household which has taken a loan (cash or kind) during the current year or prior to that from any source for any purpose and the entire amount or a part thereof remained unpaid on the date of survey.

On overall basis, two-fifths of the sample households were indebted at the time of interrogation (January-December, 1999). One-third (33.98%) of the sample households obtained loan in cash. The incidence of borrowing was higher by more than 10 percentage points among the 'other' households compared to the SC and ST households. The event of borrowing in kind was found highest (8.77%) among the 'other' households, 8.0 percent among the SC people, while a mere 1.49 per cent ST households incurred debt in kind.

It would be of interest to note that the incidence of indebtedness among the households belonging to interior villages was found considerably lower than the locationally advantageous village group. In the interior villages, 30.70 per cent households had borrowed in cash while 'cash + kind' borrowings constituted 35.96 per cent of all households. The corresponding figures among the respondents of villages located in nearby towns stood at 36.62 and 44.37 per cent.

The size of debt per household and per indebted household were found to be Rs. 2079 and Rs. 5117 respectively. The average amount of borrowings per landless household was Rs. 1446 as against Rs. 1591 reported by marginal farmer, Rs. 3601 small farmer and Rs. 1562 semi-medium farmer. As expected, the average size of debt among the rural households placed in the remote localities was found significantly lower (1657) than that of the households of the villages close by urban centres (2418). It deserves mentioning here that in the 1990s the average size of debt increased manifold in rural Assam as compared to the earlier estimates of '60s, '70s or '80s conducted by the RBI/NSSO. The recent increase in the volume of indebtedness in Assam is at least partially resulted by steep rise in general price level and wider coverage of the institutional credit agencies.

It is important to note that in the southern states of Andhra Pradesh (1222%), Kerala (1596%) and Tamil Nadu (974%), as against the national increase of 667%, the

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amount of borrowings rose significantly between 1971-72 and 1991-92. The percentage increase of the average amount of cash borrowings in 1991-92 over 1971-72 for Eastern States (with low base year average debt) like Assam (761%), Bihar (492%), Orissa (508%) and West Bengal (615%) was not very significant. Consequently, the mean size of debt per household in rural Assam in 1991-92 was only Rs. 236, Bihar Rs.305, Orissa Rs.269, West Bengal Rs.615 as against high profile states like Punjab Rs. 2868, Haryana Rs. 2430, Andhra Pradesh Rs. 1894, Tamil Nadu Rs. 1870 and all-India-Rs. 1160.

In rural India about three-fourths of the debt outstanding over the three decades ending 1991 had been contracted for a relatively short duration of three years or less. In the sample a mere 7-8 per cent of all borrowings were made of short duration of less than 12 months. The failure of a sizeable number of (loanee) respondents to repay the loan amount within the stipulated time period had been responsible for regular conversion of short term and medium term loans into medium term and long term loans (more than three years) respectively. Altogether 38 loans of small amounts mostly for consumption purposes were raised for less than one year time period, medium term loans constituted above 53 per cent of the total borrowings. As many as 39 productive purpose loans were also reported in this category. The unproductive loans (24) mainly comprised repairing of house buildings, health care and marriage while the productive loans were raised mainly for self employment activities (IRDP/SGSY). In the long term loan category the lowest number of households (22) were recorded. Quite a few defaulter households with a relatively large size of borrowings had been reported in this category. About 39 per cent of the aggregate borrowings fall in the long term category mainly raised for medical purposes, while the marriage and household consumption constituted much smaller proportion.

Significance

As many as 76 households borrowed interest free loans (This group included 6 households who had to mortgage some amount of land i.e. interest paid in kind). The significance of the study of the pattern of interest is that usurious interest retards development and accentuates the burden of the loanees even if such loans are taken for productive purposes.

On overall basis, 53 per cent of the outstanding debt had been raised free of interest. As high as 42 per cent of the total borrowings were outstanding in the 1-19 per cent interest slab. A heavier proportion of these loans belonged to the institutional sources mostly carrying rate of interest between 11-12.5 per cent. Only a single household reported borrowing at a concessional rate of interest of below 10 per cent. In the successively higher interest slabs, 20-49 and '50+' per cent, the percentages of outstanding debt were found very low at 3.3 and 1.9 respectively.

Contrary to general beliefs, the households belonging to the interior villages enjoyed much higher amount of interest free loans (65,7%) than the households represented by village nearby town group (45.9%). About 28 per cent of the respective outstanding debt were contracted by the remote households group at the rate of interest of 1-19 per cent which is almost half of what was recorded by the households of villages close by urban centres. In the higher interest category of above 20 per cent, in terms of percentage to total debt, the outstanding debt to former (6.0) and later household (4.8) groups were found more or less same. It is quite interesting to note that in the interior villages not a single household did report borrowings at 50+ interest rate.

Another equally encouraging finding was that not a single labour household had received any usurious loan. Marginal farmers received exceptionally high amount, i.e. 83 per cent of the initial borrowings, at the 'nil' rate of interest as against 65, 58 and 51 per cent for semi-medium farmers, landless households and small farmers respectively. Although 'not negligible' amount of repayment was recorded both against the interest free and 'with interest' loans, but due mainly to delay in repayments and interest burden, all the four household categories faced swelling outstanding debt for the loan bearing moderate to high interest on it.

The different rounds of All-India Debt and Investment Survey revealed that at the national level two-fifths of the total borrowings were made at the rate of interest between 10-15 percent , while in Assam the corresponding share was considerably low i.e, one quarter of the total cash dues outstanding. The weaker role of the institutional agencies in boosting rural economic activities in Assam might have been responsible for lower importance of the above interest slab in the state. At the all India level 22 per

cent of all borrowings were recorded at the highest interest rate of 20+ in 1981, and it went up to 25 per cent in 1991. In Assam, above 20 per cent interest was charged on less than 5 per cent of the total cash dues outstanding. The percentage share of the amount of cash debt carrying 'nil' rate of interest to total cash debt was around four times higher in Assam than the national percentage.

In the sample 63 households constituting 52 per cent of all loan-incidence had taken loans against 'personal and surety' security. Nearly one-fifth of the total debt were drawn against the mortgage of land. Cultivator households were seen borrowing one quarter of the total loan against mortgage of land compared to 6 per cent reported by the non-cultivator households. Amount received against mortgage of land was found very high (22%) among the 'other' households compared to the SC (17%) and ST households (15%).

In the sample, health care loan was found to be the most important single reason for rural indeptedness both in terms of incidence (27 households)as well as extent (28%). The incidence of consumption loan (26) was close second although per unit consumption loan was found considerably low. The consumption loan constituted a modest 5.2 per cent in the total outstanding debt. In contrast, fewer loans were taken for the purposes like livestock (19), agricultural tools and equipment (14) and trade and services (12), but their shares in the total debt accounted for 21.0, 13.8, 17.7 per cent respectively. The relatively high per unit loan of these categories attaches importance to them in the rural credit market. The only other important purpose of borrowing happened to be the marriage and other ceremonial loans. As many as 15 households borrowed on this account which constituted a little more than 9 per cent of the total debt. The purposes like construction of house building and repairing, fishery, purchase of land, education and other were found to be far less frequent among the sample households.

Encouraging

It is quite encouraging to note that no money was taken for repayment of old debt (which is considered to be a sign of rural debt-trap originating from abject poverty and exorbitantly high interest often associates with the informal lending). In the early 1980s the share of loans raised for liquidating old debt constituted almost 13 per cent in the total rural debt in Assam. In subsequent periods it has diminished remarkably. The reason might be the overall improvement in rural infrastructure and more particularly the bigger role played by the institutional credit agencies in terms of better spatial coverage and size of loans, etc. over the last two decades.

Productive loan constituted more than half of the total borrowings of which the share of institutional credit sources comes out to 75.2 per cent. The share of productive loans in total debt was 52 per cent among the landless households. The much improved access of the landless households to the institutional sources, IRDP loans in particular, seems to be the most important cause of rising share of productive loan among the rural landless households (compared to the findings of the Rural Labour Enquiry Reports). This has, at least partially, nullified the general presumption that the landless poor, for not possessing any genuine collateral, cannot mobilise the productive loan for improving their stretched economic life.

Repayment as percentage of the initial amount of borrowings constituted slightly more than 15 per cent on the account of health care leaving the outstanding debt at 87 per cent (of the principal amount) at the time of interrogation. It is noticed that emergency loans (including consumption) were borrowed either at nil or low rate of interest or against the mortgage of assets. This probably explains why the outstanding debt burden has not gone up accumulating on the health care account when borrowers were in complete disadvantage. Quite surprisingly the repayment (23%) in the case of some strictly unproductive loans (viz. marriage and ceremonies) was found much better than the productive loan. In fact, all the productive purposes loans with the exception of fishery loan displayed a gloomy picture. As a consequence, the overdue amount as percentage of the outstanding debt constituted nearly 55 per cent at the aggregate level. The major source wise break-ups show as high as 64 per cent of the institutional loan as overdue amount as against 48 per cent reported in the case of non-institutional loan. Among the institutional credit agencies, overdues as percentage of outstanding debt were 58.0 for commercial banks, 76.0 for government and 100.0 for cooperatives. The non-institutional sources reported lower value of overdue amount mainly because of two reasons. Firstly, these loans

recorded relatively higher amount of repayment and secondly, a sizeable amount of loan was taken against the security of land mortgaged for an indefinite period. It seems that not much change has occurred in the repayment performance of the rural households over the years.

Relevant

It would be relevant to note that less than 22 per cent beneficiaries of the institutional loans expressed that the loan-assets were intact, only one household reported increase in assets value, 39 per cent suffered a partial liquidation of the assets while the rest 35 per cent beneficiaries were reported in the 'missing loan assets' category. The utilisation of these resources left much to be done. It is a matter of great concern that the value of loan-assets constituted only 25.9 per cent of the original investment. The annual yield from the intact loan assets accounted for 15 per cent. Diversion of funds, lack of understanding among the group members (which left power tillers lying damaged) or personalisation of group loan by the better-off members having both the money power as well as political link etc. were the main factors responsible for failure of the no-IRDP assets in particular.

Of the 46 loans (sanctioned over the last 20 years ending December, 1999) only 4 were repaid in full, the rest 42 were in default. In percentage terms, 8.7 per cent of the beneficiaries repaid institutional loans, almost 37 per cent returned a part of the loan (at least one instalment) while the remaining 54 per cent did not repay at all.

A close and friendly relationship between the bank/ block officials and the borrowers should be developed so as to encourage better use of loan money. More often than not, the rural borrowers consider bank as the government institution meant for distribution of grants. On the other hand, while a section of the bankers do not take rural lending seriously simply because these loans ought to be provided towards the fulfilment of the government's populist measures, there is another section who consider these loans as dole to the target groups a part of which can be shared among themselves. The latter group is not at all scared in adopting unfair means since the responsibility of recovering these loans does not solely lie with them. It seems that nothing is going right at the moment. The approach of the rural borrowers, initiatives of the banks and the commitment of the block officials towards rural development through credit were found to be completely demoralised and faulty. This has been responsible for ever deteriorating recovery ratio shown by the institutional credit agencies in this region over the years. Surprisingly, in the Swarna Jayanti Grama Swarozgar Yojana, although borrowers' attitude received at least some attention, virtually no concrete steps have been taken towards specifying the 'incentive-based' dynamic role of the bankers.

It deserves mentioning that a few households refused to borrow money under PMRY scheme after getting final selection because of much lower sanction (just half of the proposed amount). The inadequate size of loan increases the chance of failure particularly when the borrowers belonged to the poverty-stricken group. Those who took loans had to surrender the entire subsidy amount plus 10-15 per cent of the loan amount to the concerned offices even before getting the loan. The incidence of redtapism, favouritism, politicisation and tips-greediness has reached such a menacing proportion that the honest prospective beneficiaries often lose out the race to the shrewd candidates.

The defective delivery-recovery system makes a section of the beneficiaries rebellious and the others, a co-partner of the corrupt network. The role of the voluntary organisations in locating such social evils has become extremely important now a days.

Higher Demand

The demand for institutional loans has gone up considerably in the sample state in recent times. As much as one-third of the sample households had applied for loans under the different government schemes. Some important purposes were viz., fishing, tea nursery/plantation, grocery store, pumpset, dairy and weaving . Demand for relatively big loans like auto rickshaw, tea plantation, power tiller, grocery stores, etc. had been on the rise. A large number of small and marginal farmers engaged in the conversion of a part of their paddy/horticultural field into tea plantation repeatedly complained about not getting any sort of help either from the government or banks for expansion of their tiny tea fields. It is very important that the banks/ government agencies pay heed to the genuine and economically viable ventures initiated by the rural entrepreneurs. One suggestion is that bank may lend at the market rate of interest. But the interest calculations should start from the fourth year (in the case of small tea growers, for

example) of the loan sanctioned i.e, only when the gestation period is over. Subsidy if any, should look after the low/reasonable rate of interest and interest calculations of the initial years covering the gestation period. Such a measure will encourage viable loan deals in the rural sector.

As already mentioned the majority of the households could not manage loan even after a series of patient visits to the government offices. Banks were seen denying any advance to many villages--viable or unviable proposals alike-on the ground of either insecurity to loan-assets posed by the recurring floods or non-repayment of old loans obtained by the co-villagers. This is not a fair business. The latter strategy can be adopted for improving the repayment culture in the case of group loan. Moreover, when banks or block officials are not at all taking any interest in follow-up measures, not allowing second time loan to the households victimised of natural calamities so that they can at least get a chance to repay their old debts, such a stringent measure will do more harm than good to the economy of the have-nots. This, among others, was responsible for low credit-deposit ratio in the sample region which warrants special measures from the policy makers and the state government.

A couple of power tillers, diesel operated pumpsets (tiny irrigation canals) etc. provided by the government were found lying damaged due to the lack of maintenance in just two and half years time from receiving these services. This long-established practice can be arrested by entrusting either Panchayat or NGOs, or both, with the responsibility of implementation as well as maintenance of these services. The Block Development Office/DRDA/other government offices (also, NGOs) should look after the dearth of expertise in some areas, in grassroots level organisation. One unique feature of Assam is that in a large number of villages, even in the remotest corner of the state, Mahila Samitis (grassroots level women organisation) of different shapes and sizes have appeared over the years. If this ready but extensively unexploited platform is encouraged to grow as a catalytic network in the state to act as a link between the funding agencies and the ultimate beneficiaries-the performances of the government schemes like IAY, CRSP or SGSY, etc. can be improved within a time bound period. Allowing all sorts of encouragement to the Mahila Samitis by the government so that it can come up as the leading grass roots level organisation will also speed up the social development process in the state, since the mobilisation of women is the core part of it.

The strategy for creating a 'poverty-led indebtedness-free society in rural areas has to be multi-pronged. A concerted effect has to be made for developing the village roads and its link with the organised market. All the interior villages in Assam manifest almost similar socio-economic features. They urgently need all weather roads, better educational infrastructure, primary health centre and modernisation of agriculture, etc. The local people can be involved more meaningfully in the development process if the block officials are made responsible for presenting the annual statement before the public detailing all information like programmewise and village wise distribution of development funds, name, amount and addresses of the beneficiaries, name of the contractors and government officials in charge of village roads/ minor irrigation projects, etc. To achieve this holistic goal the mahila samitis, youth societies, Panchayat members, teachers and student organisations need to work together to mould the public opinion against all pervasive corruption at the implementation level of the developmental schemes. The introduction of this system will invariably enhance the rate of capital formation in the rural area, ushering a new era of development in the 21st century. ❐

PC Sales Soar

Personal computer sales in the country jumped by 34 per cent to touch 1.8 million units in 2000-01 even as the market share of assembled PC (comprising mainly the grey market) dropped to 53 per cent. In value terms, the desktop computer market witnessed a 26 per cent growth at Rs. 6,153 crore in 2000-01 compared to Rs. 4,874 crore in the previous year, according to the annual industry survey by the Manufacturers' Association for Information Technology.

Structure of Land Tenancy In Indian Agriculture

Sushila Kaul and R. K. Pandey

Land tenancy is based on various terms and conditions which have varying impact on resource use and productivity. The knowledge of the trend of tenancy, terms of payments for leased in land and factors influencing area under tenancy are of great importance

HUMAN HISTORY has been dominated by the relationship of man to land. Ownership of land provides a sense of well being and security to people. In an agrarian economy like India, the ownership of land and pattern of its distribution have direct bearing on generation, accumulation and distribution of income and wealth. Though, Indian agriculture is predominated by small and marginal farmers, the agricultural scenario is characterised by the incidence of tenancy, landlessness, high degree of fragmentation and skewed distribution of holdings. These, in turn, face direct bearing on farm production and income of rural masses. Due to the pressure of population on land coupled with social desire for equitable distribution of land, a number of land reform legislations, including tenancy reforms have been enacted by various state governments. These legislations have affected the area and ownership of operational land holdings. Though, the area under tenancy is relatively small, it is an important method of augmenting area of operational holdings. Land tenancy is based on various terms and conditions which have varying impact on resource use and productivity. The knowledge of the trend of tenancy, terms of payments for leased in land and factors influencing area under tenancy are of great importance to policy makers, administrators, and economists and the present study is aimed at studying these. The specific objectives are:

(i) to examine the changes in the tenancy structure in various states over time,

(ii) to study the terms of payment for leased in land in various states and

(iii) to evaluate the factors influencing area under tenancy over time.

The paper deals with examination of tenancy structure in various states as well as for the country during 1970-71 to 1990-91. The terms of payment have also been dealt with, for the selected states as well as for the nation as a whole. The determinants of land under tenancy have been discussed.

The study is based on secondary data obtained from census reports issued by the Ministry of Agriculture. Data on various determinants such as agricultural G. D. P, rural population, poverty ratios, rural literacy etc. have been obtained from the published sources.

Dandekar and Khundanpur (1957) in their study observed that expenditure on durable investment like digging of irrigation wells were relatively lower on tenant operated farms. Desai (1958) reported that only 22 percent of the part tenants affected improvements on leased land in Gujarat. Kesar and Acharya (1976) were of the view that uncertainty of tenure causes the tenants not to make any permanent improvements which could increase production on the farms in the long run. Jha and Salunke (1969) on the basis of their surveys in Bihar observed that share croppers did not invest anything on bringing improvements in land. Other tenure groups had invested

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substantially in buying and reclaiming the lands. Pandey and Singh (1977) using data from the NSS 8th Round, and 16th Round as well Agricultural Census 1970-71 observed that during 1953-54 to 1970-71, the cultivated area on marginal and small holdings was increasing sharply and on the contrary the under tenancy was decreasing. Only a small portion of total cultivated land in the country was under tenancy. In other studies Pandey and Sarup (1981, 1986) observed that there was some improvement in the distribution pattern of land holding in 1976-77 as compared to 1970-71. These two studies also confirmed that small holding size and higher proportion of marginal and small holdings contributed significantly to the higher cereal productivity. Tenancy of operational holdings from 1970-71 to 1990-91. is given in Table 1. During the period of two decades, total number of holdings has increased from 70.4 million in 1970-71 to 106.6 million in 1990-91. During this period total operated area rose marginally from 162 million hectares to 165 million hectares. The wholly owned and self operated holdings dominated the land tenure system and accounted for 91.6 to 96.6 percent of the holdings as well as operated area by them. The absolute number as well as proportion of wholly leased in land has decreased over time.

Data Compared

In order to examine the changes in the distribution pattern of operational holdings according to ownership status, the agricultural census data for 1970-71, 1976-77 and 1990-91 were compared for major states. The results are presented in Table -2. It was observed that during 1970-71, the proportion of wholly leased in holdings to total holdings varied from less than 1percent to 16 percent in different states though the national average was 4 percent only. The incidence of wholly leased in holdings was observed to be more than 10 percent in the states of Assam and Haryana while it ranged between 5 to 10 percent in the states of Andhra Pradesh, Rajasthan and Kerala.

During 1976-77, the proportion of this group of holdings declined and ranged from 1 to 3 percent in different states. Almost all the states under study except Madhya Pradesh experienced a significant reduction in the proportion of wholly leased in holdings during 1976-77.

During 1990-91 census, the share of such holdings declined to 0.4 percent. The states of Andhra Pradesh, Gujarat and Kerala reported very little or no area under wholly leased in holdings. Thus, over the period, wholly owned and self operated holdings are rising .

The available evidence further

Table 1

Percent distribution of number of operational holdings and area operated in India by tenure and tenancy status

S.No	Year	No. of Holdings				Area Operated			
		Wholly owned & self operated	Wholly leased in	Wholly otherwise operated	Partly owned, partly leased in & partly otherwise operated	Wholly owned & self opearted	Wholly leased in area	Wholly otherwise operated area	Partly owned partly leased in & partly otherwise opearted
1.	1970-71	91.6	4.0	0.5	3.9	91.1	2.4	0.4	6.1
2.	1976-77	94.8	1.2	3.4	2.6	94.2	0.9	1.4	3.5
3.	1980-81	94.1	0.9	0.7	4.3	94.0	0.6	0.4	5.0
4.	1985-86	96.3	0.6	0.7	2.4	95.9	0.4	0.4	3.3
5.	1990-91	96.7	0.4	0.6	2.3	96.3	0.3	0.4	3.0

Source: Agricultural Census (1990-91), Ministry of Agriculture, New Delhi.

Table 2

Statewise percent distribution of operational holdings according to ownership status

States	Year	Wholly Owned and Self operated holdings		Partly owned and partly leased-in holdings		Wholly leased-in holdings	
		No.	Area	No.	Area	No.	Area
Andhra Pradesh	1970-71	87.76	84.21	6.7	12.16	5.66	3.63
	1976-77	94.57	93.78	1.89	3.63	0.90	0.75
	1990-91	99.60	99.60	0.20	0.40	n	n
Assam	1970-71	75.89	71.39	8.54	17.94	15.57	10.68
	1976-77	85.50	84.16	2.06	4.10	3.03	1.63
	1990-91	89.70	89.80	6.60	7.40	2.60	1.90
Bihar	1970-71	99.60	99.68	0.18	0.16	0.22	0.17
	1976-77	99.50	98.10	0.35	1.10	0.14	0.16
	1990-91	99.00	98.60	0.70	9.32	0.10	0.20
Gujarat	1970-71	96.83	96.59	1.87	0.65	1.29	0.76
	1976-77	99.41	98.40	0.19	0.28	0.17	0.14
	1990-91	99.80	99.70	N	0.10	N	0.10
Haryana	1970-71	81.42	84.16	6.64	9.68	11.94	6.17
	1976-77	95.26	96.75	2.03	1.78	2.53	1.42
	1990-91	94.10	94.80	2.50	2.70	3.00	2.20
Kerala	1970-71	88.46	82.82	3.35	7.72	8.19	9.46
	1976-88	98.46	98.01	0.31	0.82	0.49	0.22
	1990-91	99.10	98.70	0.50	0.90	n	0.10
Madhya Pradesh	1970-71	97.94	97.52	1.17	2.32	0.89	0.43
	1976-77	92.63	90.84	3.54	6.18	1.16	0.71
	1990-91	92.40	90.60	5.50	8.40	0.20	0.20
Maharashtra	1970-71	91.86	89.47	5.08	8.16	3.06	2.32
	1976-77	95.69	94.49	2.69	4.13	1.59	1.36
	1990-91	99.60	99.40	0.20	0.40	0.10	0.10
Orissa	1970-71	91.52	91.59	4.91	5.77	3.01	1.34
	1976-77	92.95	92.26	4.45	4.31	0.92	0.49
	1990-91	93.20	99.20	6.00	7.10	0.20	0.20
Rajasthan	1970-71	89.43	91.95	5.13	5.96	5.45	2.10
	1976-77	95.23	96.15	1.87	1.99	1.06	0.69
	1990-91	97.90	98.20	1.10	1.40	0.10	0.10
Tamil Nadu	1970-71	91.98	91.19	N.A.	N.A.	N.A.	n
	1976-77	94.81	94.18	2.33	3.68	1.60	1.20
	1990-91	97.90	98.20	1.10	1.40	0.10	0.10
Uttar Pradesh	1970-71	96.97	96.31	0.48	0.21	0.60	0.40
	1976-77	98.78	98.17	0.22	0.49	0.27	0.17
	1990-91	97.90	98.10	1.60	1.50	0.34	0.20
West Bengal	1970-71	85.76	84.81	12.22	9.02	2.12	1.52
	1976-77	88.88	87.30	9.15	10.74	0.98	0.79
	1990-91	89.10	86.10	8.60	10.40	1.70	1.30
All India	1970-71	91.55	91.10	3.93	6.08	4.02	2.44
	1976-77	94.80	94.20	2.60	3.50	1.20	0.90
	1990-91	96.70	96.30	2.30	3.00	0.40	0.30

N=Not Significant

NA=Not available

Source : Agricultural Census Reports, Ministry of Agriculture, New Delhi

revealed that larger proportion of marginal holdings were wholly leased-in various states. During 1976-77, about three fourths of the leased in holdings belonged to marginal holdings group in the states of Assam, Tamil Nadu and Uttar Pradesh . In Kerala, more than 95 percent of leased in holdings were in marginal category while this figure was 78 percent during 1970-71.

Distribution of holdings according to terms of tenancy has been given in Table 3. Land may be leased in for fixed money, fixed produce, share of produce usufractuary mortage etc. Data during 1976-77 to 1990-91, showed that of the total leased in area the largest share was accounted by share of produce, being 40.7to 50.2 percent during the period. The next important term of leasing was fixed money, which was followed by fixed produce.

Percentage distribution of area leased in according to different terms to tenancy for 11 states were compared for the years 1970-71,1976-77 and 1990-91. The results are presented in Table 4. An examination of these results showed a considerable variation in the pattern among various states. Fixed money was the predominent form of payment in the states of Andhra Pradesh, Kerala and Rajasthan. Share of produce was more prevalent in Bihar, Orissa, and West Bengal. Incidently these are the permanently settled states. Share of produce as a form of payment might discourage the tiller for bringing improvement in land and productivity, as in case of increased output a relatively higher output, would go to the owner of land.

Leasing -in of Land

To study the factors affecting the extent of land being leased-in rural areas, regression analysis was undertaken. The proportion of leased- in land to the total land was taken as regress and the regressors were gross domestic product in agriculture on per hectare basis, size of small and marginal holdings, percent of share of produce, level of poverty, percentage of rural literacy, percentage of rural population and percentage of gross cropped area to total cropped area. The regression equations were estimated under usual assumptions. The analysis was done for the years 1981 and 1991. Statewise data on different variables were used for the purpose of estimation. Detailed results are given in Table 5.

It is evident from the analysis that agricultural gross domestic product on per hectare basis in a state had a positive and statistically significant coefficient in both the years. This implies that higher the domestic product in a state, higher would

Table 3
Percent distribution of leased-in area by terms of leasing in major size groups

Category of holding and size group	Area leased in for: Fixed Money			Fixed Produce			Share of Produce			Unfructuary mortage			Other Terms		
	1976 -77	1980 -81	1990 -91	1976 -77	1980 -81	1990 -91	1976 -77	1980 -81	1990 -91	1976 -77	1980 -81	1990 -91	1976 -77	1980 -81	1990 -91
Marginal (> 1 ha.)	16.7	15.8	15.0	17.2	11.0	12.9	40.7	50.2	50.2	2.9	2.2	4.2	22.5	20.8	16.7
Small (1.0 to 2.0 ha)	16.9	13.7	17.3	15.7	11.0	14.3	40.5	51.0	49.6	2.0	1.8	2.6	24.9	22.5	16.2
Semi-medium (2.0 to 4.0 ha)	19.9	21.0	27.8	14.4	10.0	15.4	32.4	37.2	37.0	2.8	2.0	3.2	30.5	29.8	16.9
Medium (4.0 to 10.0 ha)	26.2	25.5	40.1	8.3	6.1	12.8	22.3	28.5	25.2	3.2	1.9	4.0	39.0	38.0	18.6
Large (10.0 ha and above)	32.9	30.1	52.9	8.1	4.9	12.2	19.3	21.9	21.3	3.3	1.8	1.9	36.4	41.3	12.2
All Categories	22.8	21.1	29.0	12.7	8.6	13.6	30.3	37.8	37.8	2.8	2.0	3.3	31.4	30.6	16.5

Source : Based on Reports Agricultural Census, Ministry of Agriculture, New Delhi.

Table 4

Distribution of area leased-in according to terms of tenancy in major states

State	Year	Percentage area leased in on Partly owned and Partly leased in holdings				Percentage areas leased in on Whooly leased in holdings			
		Fixed money	Fixed produce	Share of produce	Other terms	Fixed money	Fixed produce	Share of produce	Other terms
Andhra Pradesh	1970-71	31.19	10.37	15.69	42.85	28.76	6.78	7.62	56.84
	1976-77	49.04	23.43	22.84	4.68	55.62	18.00	17.56	8.81
	1990-91*	42.09	35.07	7.01	0.00	—	—	—	—
Assam	1970-71	1026	10.21	12.37	67.16	14.87	2.67	2.10	80.36
	1976-77	23.16	31.12	18.26	37.44	21.69	12.96	19.33	46.01
	1990-91	21.60	20.00	17.60	8.00	—	—	—	—
Bihar	1970-71	N.A	N.A	—	—	10.84	0.80	67.97	20.30
	1976-77	12.89	8.88	33.04	45.17	20.08	10.50	30.78	38.61
	1990-91	2.20	13.00	78.30	0.00	—	—	—	—
Gujarat	1970-71	N.A.	—	—	—	62.95	3.91	5.74	27.50
	1976-77	28.00	6.83	8.09	57.06	33.49	1.96	2.22	62.31
	1990-91	45.50	9.10	18.20	18.20	—	—	—	—
Haryana	1970-71	20.95	0.69	59.78	18.54	23.55	0.44	57.15	18.26
	1976-77	27..24	26.36	37.80	8.93	30.85	14.24	42.79	12.10
	1990-91	50.50	6.80	36.90	3.90	—	—	—	—
Kerala	1970-71	46.79	34.64	2.06	16.51	51.40	18.95	0.28	29.37
	1976-77	26.30	14.84	14.46	44.39	37.08	10.94	5.90	46.07
	1990-91	40.00	0.00	0.00	40.00	—	—	—	—
Madhya Pradesh	1970-71	26.14	3.16	10.46	60.24	25.83	3.23	10.95	59.99
	1976-77	20.18	7.08	23.62	49.10	18.43	3.72	17.10	60.73
	1990-91	18.90	3.30	16.70	57.80	—	—	—	—
Orissa	1970-71	17.18	11.50	66.06	5.26	26.48	19.16	44.38	9.98
	1976-77	15.40	18.16	56.96	9.45	23.47	20.86	44.65	11.01
	1990-91	9.30	9.30	68.50	9.30	—	—	—	—
Rajasthan	1970-71	19.26	2.18	16.14	62.42	26.06	1.97	13.32	58.64
	1976-77	28.54	6.50	44.33	20.62	39.69	5.04	40.19	15.07
	1990-91	54.20	10.20	25.40	8.50	—	—	—	—
Tamil Nadu	1976-77	16.24	53.02	24.30	6.42	40.03	41.34	14.87	2.72
	1990-91	20.04	51.00	16.30	10.20	—	—	—	—
West Bengal	1970-71	2.28	2.47	77.89	17.36	3.23	1.43	44.83	50.51
	1976-77	2.69	1.86	91.69	3.75	3.95	5.32	83.86	6.85
	1990-91	6.50	10.60	72.60	10.30	—	—	—	—

* The figures for the year 1990-91 are available for the entire tenancy and information on different groups shown above is not available.

Table 5
Estimated regression equations for determining tenancy status

	Constant	Ag.GDPh.	SMH	PS Pro	Poverty	Rural Literacy	Rural Population	R2
Year 1981								
1.	8.544	.00058* (00.16)	5.190 (7.464)	0.071 (0.034)	-0.0740 (0.069)	0.244** (0.079)	-0.157 (0.120)	0.87
2.	-1.487	.002** (.001)	—	—	-.063 (.067)	—	—	0.55
3.	-4.31	.0029 (.0013)	—	—	—	—	-0.067 (0.140)	0.52
4.	-4.599	.0028** (.0012)	—	—	—	—	—	0.51
5.	+6.499	—	—	—	-.081	—	—	0.26
Year 1991								
1.	-.28973	0.002** (.00048)	13.611** (2.796)	0.0146 (0.013)	0.073** (0.035)	0.001 (0.02)	0.131** (0.044)	0.91
2.	-0.78	0.0068 (0.0037)	—	—	-0.275 0.037	—	—	0.49
3.	-.747	0.00082* (0.00043)	—	—	—	—	—	0.47
4.	-1.134	0.00073 (0.00036)	—	—	—	—	—	0.46

Where Ag GDPh denotes Agriculutural Gross Domestic Product per hectare
SMH Pro denotes size of small and marginal holdings
PS Pro denotes percentage area under share of produce

be the proportion of leased-in land to total land under cultivation.

The coefficients associated with the poverty level had negative but statistically insigificant coefficient in almost all equations. Rural literacy had a positive coefficient. However, the proportion of rural population in a state had a negative influence on the leased-in land. Due to conflicting sign of the coefficients and various statistical problems associated with such analysis, nothing very definite could be said about these factors as more refined analysis was necessary which could not be undertaken in the absence of appropriate data for various states.

The study confirmed that the wholly owned and self operated holdings account for more than 90 percent of the holdings and operational areas in the country. The proportion of wholly leased-in holdings are declining over time in all the states. The available evidence further revealed that a greater proportion of marginal holdings were wholly leased-in various states. For the country as a whole, of the total leased in area, the largest share was accounted by share of produce, followed by fixed money and fixed produce. The study further revealed that agricultural G.D.P. influenced the leased-in area positively where as level of poverty had a negative impact on tenancy. ❐

Management of NPA in Public Sector Banks

B. Ramachandra Reddy, S. Vijayulu Reddy and B. Sakunthala

The RBI has to publish the names of the defaulters of big loans and advances of banks. Unless the wilful defaulters are compelled to do so with the threat of social exposure, confiscation of properties and imprisonment, the NPAs cannot be recovered.

THE PUBLIC sector banks undertake lending to different sectors of the economy and have geographical spread through its branch network. Its viability will depend on the profit generating capacities of its operations. The most critical area in the improvement of the profitability of banks continues to be the reduction of non-performing assets (NPAs). With the introduction of international norms of Income Recognition, Asset Classification and Provisioning in the banking sector, managing NPAs has emerged as one of the major challenges facing the banks. The public sector banks (PSBs) with their vast network of branches and mass-retail-business base, cannot escape the applicability of near uniform global standards if they have to become globally competitive.

A Non-performing Asset is defined as a credit facility in respect to which interest/ instalment of principal has remained due for a period of two quarters from the year ending March 31, 1995 and onwards. It needs to be recongnised that reducing the level of NPAs is a time consuming process. Apart from internal factors such as weak credit appraisal, non compliance and wilful default, there are several external factors such as preponderance of certain traditional industries in the portfolio of certain banks, natural calamities, policy and technological changes which increase the incidence of sickness, labour problems, non-availability of raw materials and other such factors which are caused to NPAs not within the control of banks.

The implementation of prudential norms in Indian banking system on the basis of the recommendations of the Narasimham Committee has constituted a significant step towards introduction of transparency in accounting practices and bringing the norms to internationally accepted standards. After the implementation of prudential norms, the gross NPAs of public sector banks increased from about Rs.18,000 crore in 1991-92 (prior to introduction of prudential norms) to Rs. 39,253 crore as at the end of March, 1993 (as a result of introduction of prudential norms) and Rs. 53,294 at the end of March 31 2000. Whereas in terms of percentage it declined from 23.2 per cent in 1993 to 14.0 per cent by the end of March 2000. In the case of net non-performing assets, in absolute terms, it increased from Rs. 17,567 crore in 1995 to Rs. 26,188 crore by the end of March 2000. The net NPAs as a percentage to net advances came down from 10.7 per cent to 7.42 per cent during the period.

From the Table-1 it is observed that the gross and net NPA levels of public sector banks have come down in percentage terms, whereas in absolute terms the amount is increasing.

Today the quality of loan assets is the most important factor for the basic viability of the banking system. The overdue advances of banks in India are mounting and in consequence the NPAs in their portfolio are on the rise, impinging on the banks viability. Avoidance of loan losses is one of the pre-occupations of management of banks. While complete elimination of such losses is not possible, bank managements aim to keep the

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losses at a low level. Infact, it is the level of NPAs which to a great extent differentiate between a good and bad bank.

Table-2 indicated that majority of PSBs improved their net NPAs percentage in recent years. Indian Bank, along with UCO Bank and United Bank of India have been identified as weak banks in view of their massive losses and high level of NPAs. Corporation Bank, Syndicate Bank, Andhra Bank and Oriental Bank of Commerce have recorded an outstanding performance with a low net NPA percentage if 1.92, 3.17, 3.47 and 3.80 respectively by the year end 2000 among PSBs. Almost all the PSBs improved their net NPA levels during the period. Still most of them are lagging behind the international standard of below 5 per cent by the end of March, 2000.

Classification of Advances

Advances under Health Code system 1 to 3 i.e regular, irregular, sick-viable are performing assets the rest from 4 to 8 i.e. sick non viable recalled debts, suit filed debts, decreed debts and doubtful debts are non-performing assets. In the light of the Narasimham Committee recommendations, the RBI has redefined the NPAs and advised the banks to classify their advances into four broad groups i.e, (i) Standard (ii) Sub-standard (iii) Doubtful and (iv) Loss assets by compressing the then existing eight health codes. Standard assets are treated as performing assets and the remaining three categories are treated as non-performing assets.

Table -3 reveals that the percentage of standard assets to total advances of PSBs went up from 767.8 per cent in 1993 to 86.0 per cent by the end of March 2000. In the case of sub-standard assets, its share in the total advances declined from 7.4 per cent in 1993 to 4.3 per cent in 2000. Doubtful assets came down from 11.9 per cent to 8.0 per cent and loss assets reduced from 2.3 per cent to 1.7 per cent during the period. The improvement in standard assets is a result of great threat on public sector banks.

The problem of NPAs is of course a very key problem for Indian banking sector and there is certainly, apart from a reform in the legal system, a need for reforming out Debt Recovery Tribunals. Due to the inadequacy of the recovery mechanism and the alarming position of overdues in the banking industry, the Government of India considered the recommendations of the Narasimham Committee and promulgated an ordinance called "Recovery of Debts due to Banks and Financial institutions" on 24th June, 1993. The Act envisages establishment of Recovery Tribunals for expeditious adjudication of recovery of debts due to banks and financial Institutions. Under the Act, 22 Tribunals

Table 1

Gross and net NPAs of public sector banks

Year	Gross NPAs (Rs.)	Percentage of Gross NPAs to Gross Advances	Net NPAs (Rs.) to Net Advances	Percentage of Net NPAs
1993	39,253	23.2	N.A.	N.A.
1994	41,041	24.8	N.A.	N.A.
1995	38,385	19.5	17,567	10.7
1996	41,661	18.0	18,297	8.9
1997	43,577	17.84	20,285	9.18
1999	51,710	15.89	24,211	8.13
2000	53,294	14.0	26,188	7.42

Note : *N.A - Not available*

Source : *1. Reserve Bank of India Bulletin, July 199,p.931.*

2. Report on Trend and Progress of banking in India, RBI, 1999-2000.

Table 2

NPAs of public sector banks in percentages

(end of 31st March)
(in per cent)

Sl.No.	Name of the Bank	Gross NPAs/Gross Advances					Net NPAs/Net Advances				
		1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Nationalised Banks											
1	Allahabad bank	23.98	23.93	23.18	20.09	19.07	16.0	14.84	15.09	12.54	12.24
2	Andhra Bank	11.61	11.81	9.86	9.42	7.83	3.29	4.10	2.92	4.46	3.47
3	Bank of Baroda	16.16	17.15	14.63	16.03	14.73	8.15	8.94	6.60	7.70	6.95
4	Bank of India	14.49	11.78	11.55	11.87	12.9	7.0	6.52	7.13	7.29	8.61
5	Bank of Maharastra	21.87	20.67	17.39	15.97	12.65	9.39	9.66	8.59	8.72	6.97
6	Canara Bank	17.93	20.26	18.69	18.32	10.42	7.45	9.32	7.52	7.09	5.28
7	Central Bank of India	23.91	25	20.47	17.41	16.63	13.49	14.40	12.21	9.79	9.84
8	Corporation Bank	9.67	9.92	7.6	5.66	5.39	2.26	3.63	2.93	1.98	1.92
9	Dena Bank	14.7	15.1	13.73	12.37	18.15	7.30	9.40	8.28	7.67	13.47
10	Indian Bank	34.15	39.12	38.96	38.7	32.77	23.87	25.24	26.01	21.67	16.18
11	Indian Overseas Bank	22.59	15.8	13.38	13.32	13.18	8.57	7.64	6.26	7.39	6.65
12	Oriental Bank of Commerce	5.68	7.36	6.16	6.3	5.54	3.60	5.64	4.84	4.50	3.80
13	Punjab and Sind Bank	27.7	30.71	26.79	23.01	15.27	10.34	12.04	10.84	10.48	9.39
14	Punjab National Bank	18.74	16.31	14.5	14.12	13.19	12.70	10.38	9.60	8.96	8.52
15	Syndicate Bank	20.97	19.32	15.31	10.72	7.74	8.39	7.53	5.78	3.93	3.17
16	UCO Bank	24.54	28.35	24.04	22.55	18.79	11.43	13.73	11.14	10.83	8.75
17	Union Bank of India	10.38	10.38	11.18	12.41	12.27	5.94	6.98	7.66	8.70	7.97
18	United Bank of India	38	36.2	33.5	32.38	27.6	23.28	18.70	14.10	15.96	12.70
19	Vijaya Bank	20.36	18.73	15.21	13.65	11.52	11.90	9.56	7.50	6.72	6.65
SB Group											
20	State Bank of India	15.96	16.02	14.14	15.56	14.25	6.61	7.30	6.07	7.18	6.41
21	State Bank of Bikaner & Jaipur	12.45	13.83	11.73	16.11	16.15	6.11	7.96	7.13	10.45	10.14
22	State Bank of Hyderabad	17.89	19.19	18.96	15.94	14.18	9.94	11.42	10.88	8.78	7.30
23	State Bank of Indore	14.20	15.81	15.05	14.68	10.8	9.62	11.29	10.96	10.10	7.55
24	State Bank of Mysore	14.54	16.92	17.47	16.96	13.89	8.59	10.96	10.75	10.55	8.12
25	State Bank of Patiala	11.49	11.32	11.88	13.98	10.99	6.60	5.88	7.04	8.23	6.09
26	State Bank of Saurastra	13.5	14.79	14.83	15.43	13.71	5.70	6.07	6.57	7.70	7.87
27	State Bank of Travancore	11.74	14.49	20.06	18.46	14.43	7.38	8.82	12.21	10.80	8.58
	Public Sector Banks	18.0	17.84	16.02	15.89	14.02	8.9	9.18	8.15	8.13	7.42

Source :1. Report on Trend and Progress of Banking in India, 1997-98 and 1999-2000.

were set up all over the country. There are five Appellate Tribunals for preferring appeals against the decision of the Tribunals. It has been announced in the Union Budget for 2001-02 that the government has decided to set up 7 more DRTs during 2001-02. The pecuniary jurisdiction of the Tribunals is for the adjudication of claims of Rs. 10 lakh and above. The Tribunals have to decide the claims within six months. The appeal too is required to be decided within six months. As on 31st March 1999, 5674 cases involving an amount of Rs. 4,959 crore have been transferred from public sector banks to the Debt Recovery Tribunals (DRTs) for adjudication and 1503 cases involving a sum of Rs. 179 crore have been settled. The data suggests that the working of DRTs had fallen short of the expectations by not creating a fast track system for recovery of bank dues. With the clearance of the legal hurdles, DRTs are likely to play a more effective role in recovery of debts. For recovery of smaller loans the Lok Adalats have proved very effective for quick justice and settlement of dues, particularly in Gujarat. Such agencies should be established in all other states.

Conclusion

Total elimination of non-performing assets is not possible in banking banking business owing to externalities but their incidence can be minimised. It is always wise to follow the proper policy for appraisal, supervision and follow-up of advances to avoid non-performing assets. Special Recovery Cells may be set up at regional/ zonal levels. Similarly, Recovery Officers may be appointed at branches having sizeable NPAs and their recovery progress may be monitored on monthly basis. Banks should encourage mergers./acquisition of sick

TABLE 3

Classification of loan assets of public sector banks 1993-2000

(Rs in crore)
(End of March 31st)

Sl. No.	Classification of Assets	1993	1994	1995	1996	1997	1998	1999	2000
1.	Standard Assets	130087 (76.8)	124580 (75.2)	158967 (80.5)	189660 (82.0)	200637 (82.2)	239318 (84.0)	273618 (84.1)	326783 (86.0)
2.	Sub-standard Assets	12552 (7.4)	12163 (7.3)	7758 (3.9)	9299 (4.0)	12471 (5.1)	14463 (5.1)	16033 (4.9)	16361 (4.3)
3.	Doubtful Assets	20106 (11.9)	23317 (14.1)	22913 (11.6)	24707 (10.7)	26015 (10.7)	25819 (9.1)	29252 (9.0)	30535 (8.0)
4.	Loss Assets	3930 (2.3)	4073 (2.5)	3732 (1.9)	4351 (1.9)	5090 (2.1)	5371 (1.9)	6425 (2.0)	6398 (1.7)
5.	Advances < Rs. 25,000 included in NPA	2665 (1.6)	1488 (0.9)	3982 (2.0)	3304 (1.4)	—	—	—	—
6.	Total NPAs (2 to 5)	39253 (23.2)	41041 (24.8)	38385 (19.5)	41661 (18.0)	43576 (17.8)	45643 (16.0)	51710 (15.9)	53294 (14.0)
7.	Total Advances (1+6)	169340 (100.0)	165621 (100.0)	197352 (100.0)	231321 (100.0)	244213 (100.0)	284971 (100.0)	325328 (100.0)	380077 (100.0)

Note : Figures in brackets indicate percent share in total advances.
- : Nil or negligible
Source : Statistical Tables relating to banks in India, RBI, 1999-2000.

units where ever they feel it may reduce the NPAs. A large number of compromise proposals are being approved by banks with a view to reducing the NPAs and recycling the funds instead of resorting to expensive recovery proceeding spread over a long period.

Banks should take full advantage of the Tribunals by taking necessary steps. It is hoped that establishment of DRTs may not only facilitate quick decisions but also induce borrowers to enter into settlements with banks. Establishment of Asset Recovery Branches at critical centres for undertaking recovery, fix targets of recovery and draw time bound action programme will help reduce the NPAs to a certain extent. Branch managers have to put sincere efforts to improve recoveries by personally contacting the borrowers instead of issuing notices to them. A number of follow-up visits, regular stock inspection may significantly improve the performance of recovery.

RBI has to publish the names of the defaulters of big loans and advances of banks. Unless the wilful defaulters who have the means to repay are compelled to do so with the threat of social exposure, confiscation of properties and imprisonment, the NPAs cannot be recovered. In the process of globalisation, the Indian public sector banks will have to equip themselves to meet the challenges of competition from within the country as well as from outside. ❐

India's Economic Stability Gains Wider Recognition

S. Sethuraman

What has impressed the international community is the buoyancy of the services sector, which has helped sustain growth when agriculture or industry falters, but, even more importantly, the spectacular development of Indian software services.

INDIA'S SUSTAINED growth averaging 6 to 6.5 per cent through the decade of the 1990s, untrammelled by turmoils in international capital markets, economic sanctions, excessive oil prices and pressures of global competition has helped to establish itself as a stable economic power in Asia.

In recent years, there has been greater recognition of India's growing stature in the world economy by the international financial community and independent agencies. Its rate of economic growth makes India one of the fastest growing nations of the world.

The international Monetary Fund (IMF), in its latest World Economic Outlook, has described China and India accounting for three-fourth of output in Asia outside Japan, as "sources of stability" at a time of down turn in the global economy, triggered by the slowdown in USA.

From India's point of view, the rise in per capita income is far from adequate to make a real dent on poverty . Neither does growth at current levels generate resources of an order that government needs to bring down its fiscal deficit and allocate larger funds for critical investments in physical and social infrastructure.

International financial institutions underline the fact that the economy has been performing below its potential. It means that if the manufacturing sector, which slowed down in the latter half of 1990s, makes a strong recovery, and efficiency of resource use improves strikingly, India could easily exceed an annual growth rate of 7 per cent.

The Prime Minister, Mr. Atal Bihari Vajpayee, has asked the Planning Commission to project a growth model of 8 to 9 per cent in the Tenth Plan (2002-07). An Approach paper is under preparation. But IMF and other international financial institutions, associated with India's economic development, emphasise that India could move to a higher trajectory of growth. But this may be possible only if the government effects a substantial reduction in the fiscal deficit— both at the Centre and in states for step up in public investment and accomplishes structural reforms that improve the environment for private investment—from domestic and foreign resources alike.

The public sector deficit, at the national level (Centre and states), is 10 to 11 per cent of the GDP. Over 30 per cent of government expenditure goes towards interest payments. The fiscal deficit of the Centre, which was as high as over 8 percent of the GDP in 1990-91, when a serious economic crisis was brewing , was lowered to 5 per cent in mid-1990s, but it has ranged at 5-6 per cent in the latter half of the decade and into 2000-01.

The Finance Minister, Mr. Yashwant Sinha, has projected the deficit at 4.7 per cent in his budget for 2001-02 but this is subject to full realization of the Rs. 12,000 crore assumed as privatisation receipts. Here, there are doubts because India's disinvestment has not been making headway as planned from year to year. Unless the budgetary provisions are strictly adhered to in the matter of receipts, revenue and capital, and significant cuts in expenditure in administration and "non -merit" subsidies are effected, the Centre will be unable to restrain the deficit from overshooting.

In 2000-01, the 5.1 per cent target, it is now officially conceded, has been exceeded . These deficits are met by domestic savings, mainly household, and with no improvement in public sector savings, would limit growth through investments below the long-term potential as the World Bank points out.

Notwithstanding some concerns in the realm of public finance, India has earned recognition as a staunch reformer. Such growth dynamism as has been generated thus far is attributable to the brisk phase of reforms in trade, industry, exchange rate, taxation and financial sector in the first half of the decade.

Reforms

Economic liberalisation has been a continuous process throughout and the present government's strong commitment to reforms of the second generation as reflected in the Budget for 2001-02 has been lauded. Implementation of some of the relatively hard measures would require a certain degree of political consensus. The fiscal responsibility legislation pending before Parliament is also taken as India's determination to achieve stabilisation and consolidation within five years.

India's record has been one of sound macro-economic management . Notwithstanding occasional fiscal over-runs, the rate of inflation has been held within 5 to 8 per cent on an annual basis. The rupee-dollar exchange rate has not gone far out of line under a watchful Reserve Bank of India, except to the extent of the appreciation of US dollar and inflationary impact.

Export momentum has been revived, especially in 2000-01, which recorded a near 20 per cent growth. Despite the surge in oil import bill, the trade deficit is easily manageable, unless industrial revival in the current year triggers a rise in non-oil imports of capital goods and intermediaries essential for higher production and exports.

India's foreign exchange reserves has been on a steady up trend and now it is around 40 billion dollars (excluding gold and SDR). This is a source of considerable strength and India has comfortably managed its balance of payments for almost a decade now. Certainly, the Resurgent India and India Millennium Bonds have contributed substantially to the level of reserves. At the same time, the current account deficit has been held well below 2 per cent of GDP so far, thanks to a healthy surplus in invisible receipts, mainly remittances from Indians abroad.

Under Control

India's level of external debt has not shown any significant variation from a total of 99 billion dollars over the last five years because of increasing shift to non-debt-creating flows like foreign investment, prudential limits in short-term borrowings and also some decline in official loans, bilateral and multilateral, partly on account of sanctions in the wake of nuclear weapon tests by India in 1998.

Foreign direct investment flows are somewhat modest at 2.5 to 3 billion dollars a year but continuing liberalisation of policies and procedures is making India an important destination for foreign investors. Portfolio investments by foreign institutional investors (FIIs) have been highly positive despite the recent stock market crashes and broker misdeeds. The cumulative total at the end of April 2001 was over 13 billion dollars.

India's large needs for public investment in infrastructure—roads, power, telecommunications and for provision of public goods like education, health and drinking water, are well taken note of by international financial institutions. The Bush Administration in USA has held out hopes of an early review of sanctions to facilitate technology transfers and greater flow of bilateral and multilateral lendings to India.

The World Bank expects to raise its level of infrastructure financing and social sector lending to over two billion dollars a year. The Asian Development Bank (ADB), which lent a record 1.6 billion dollars in 2000, has drawn up a four-year programme of lending totalling over five billion dollars.

Expeditious settlement of tariff dispute and other issues affecting financial closure for projects by independent power producers would help accelerate the pace of expansion of power generation and transmission, the most critical sector for a country in chronic deficit in electricity.

Challenges

India faces tremendous challenges on the path of development. This year's budget is regarded as a bold blueprint for reform which has raised new hopes among international investors, apart from boosting business confidence at home. There are, however, serious downside risks to the budget strategy and arithmetic. Reforms like privatisation and changes in labour laws will encounter rough weather.

India's progress in fiscal stabilisation and structural reforms will remain the benchmark for attracting substantial inflows of foreign investment apart from becoming the engine of growth by itself as higher growth generates more public resources while reducing the draft on private savings as at present.

(Contd. on page 29)

Internet and Rural and Agricultural Development : Indian Scenario

Souvik Ghosh

Internet service is becoming a tool for development communication. However, most rural communities are not yet able to take advantage of this new tool. An integrated approach to facilitating Internet services and application will benefit rural communities and agricultural organizations.

INTERNET IS a tool that gives access to a vast global information resource. It enables rural communities to receive information and assistance from other development organizations and offers opportunities for two-way communication. It also helps bottom-up articulation of development needs and perceptions and thus helps in reducing the isolation of rural communities. The dialogue among communities and with planners, development agencies, researchers and technical experts can take place through Internet. It encourages community participation in decision making and help agricultural researchers, extension managers, technical experts, farmers and others in sharing information.

Access to information and improved communication is a crucial requirement for sustainable agricultural development. Modern information and communication technologies including the Internet, when applied to conditions in rural areas can help to improve communication and share knowledge and skills. It is being said that "Cyber Extension" would be the major form of technology dissemination in the near future. Improved communication and information access is directly related to social and economic development. The Internet is emerging as a tool with potential to contribute to rural development.

It is observed that the rural population still have difficulty in accessing crucial information in forms they can understand in order to make timely decision. There is a concern that the gap between the information rich and information poor is getting wider. New information and communication technologies are generating possibility to solve the problems of rural poverty, inequality and giving an opportunity to bridge the gap between the information rich and information poor and support sustainable development in rural and agricultural communities.

The initiations for application of information and communication technologies have been taking place in the delivery of services in rural India. Some of these are the Warna Wired Village Project in Maharashtra, Milk Collection in Dairy Co-operatives (NDDB), Information Villages Project (M.S. Swaminathan Res. Foundation-International Development Research Centre), Knowledge Network for grassroots Innovations (IIM, Ahmedabad, Application of Satellite Communication for Training Field Workers & Extension Workers in Rural Areas (ISRO), etc.

The Warna Wired Village Project has been covering 70 villages in Maharashtra. The project has been initiated to serve the information needs of the farmers of different crop cultivation practices of major crops, sugarcane cultivation practices, pest and disease control, marketing information, dairy and sugarcane processing information etc., right up to the village level. Network connecting is maintained by "Central hub" as the main server station, "computer booths" as information centres for the farmers and six "Information Technology Centers" as training units of staff, students and farmers of the village.

The Information Village Project is aimed at bringing the benefits of modern information and communication technologies to the poor and asset less families in villages in Pondichery and value Addition Centre which is the hub of information network and four

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Information Shops have been established in different villages.

NDDB has established IT-based machines, which are being used at milk collection centres and in co-operatives to measure butter content, test the quality of milk and to make promptly payment to farmers. It has given confidence to farmers in the cooperative set up. All these factors also have helped the milk market to expand.

Honey-Bee Knowledge network of the IIM, Ahmedabad is being used to augment grassroots inventors and overcome language, literacy and localism. A large number of grassroots inventions have been identified and documented as short multimedia presentations. Future plans include creating a database of such innovations and making them accessible via a Wide Area network.

One way video, two way audio tele conferencing Interactive Networks have been used for eduction and training by ISRO. The major application of the network in rural development is for training extension staff, a large number of women, Panchayati Raj officials, etc. spread over large distances.

Internet service is becoming a tool for development communication. However, most rural communities are not yet able to take advantage of this new tool. An integrated approach to facilitating Internet services and application will benefit rural communities and agricultural organizations. This approach begins with the needs of rural people and grassroots agricultural organizations and works to establish vertical and horizontal channels of communication.

It is stressed that Internet institutions for rural and agricultural development must consider the fact that different regions, organizations and communities have different applications, and technical needs. In some areas it is possible to have farmers and rural residents as direct Internet users while in other areas the capacity of intermediary organizations (such as extension field officers, NGOs, etc.) need to be built up or assistance to be given for the establishment and promotion of community information centres linked to the Internet.

Cyber-Extension would be the major form of technology dissemination in the near future. The advantages of the Wide Area Network system are on the spot data availability for different purposes, avoidance of unnecessary movement of farmers from their home village to data centre for different purposes and access to all information at village level. It is essential that information availability is demand driven rather than supply driven. The challenge is not only to improve the accessibility of communication technology to the rural population but also to improve its relevance to local development. ❐

Milk Output

INDIA'S milk production during 2001-02 (April/March) marketing year could rise to an estimated 81 million tonnes, up from 79 mt and 77 mt in the previous two years respectively. Production growth in India is increasing through improved yields per animal rather than through growth in animal numbers, the Food and Agriculture Organisation (FAO) said.

On the price outlook for world milk and milk products, the agency said prices of milk powder could strengthen during the second half of the year following possibility of short supply on the world market.

Dry weather in most of New Zealand, combined with a longer-standing dry period in Australia, may lead to 2001-02 output getting off to a slow start as pastures would be in poor condition.

This combined with expected 10 per cent lower milk output in Argentina, could possibly lead to tightening supplies of some dairy products, according to the FAO.

Global Milk production
(in million tonnes)

	1999	2000	2001*
World	566	576	585
EC	126	125	126
India	77	79	81
United States	74	76	76
Russian Federation	32	32	32
Pakistan	23	24	25
Brazil	22	22	23
Ukraine	13	13	14
Poland	13	12	12
New Zealand	12	12	12
Australia	11	11	11
Argentina	10	9	9

*Forecast
(Source: FAO)

Cheese and casein prices are expected to remain stable during 2001, as supply and demand are less volatile.

Also, international butter prices are expected to remain around the current levels due to the absence of strong demand, FAO said.

Global milk output in 2001 is expected to rise by 9 million tonnes to a forecast 585 mt.

Major contributors to the increase will be Indian (2 mt), EC, Pakistan, Brazil and Ukraine (one million tonnes each).

Purchases of milk powder by most countries in South East Asia are expected to increase during 2001 as economic growth in the region sustains import demand.

Additionally, for the oil production countries in West Asia and North Africa, and Venezuela, revenue from oil exports could lead to growth in import demand for a number of dairy products, FAO noted.

(Courtesy : The Hindu Business Line)

Dryland Agriculture and Rural Development

Ishita Ganguli and Kamala Kanta Tripathy

With the invention and innovation of improved agricultural technology, the productivity under dryland farming can be raised above the national average without any negative impact on environment. What is required is to find out what is the most suitable method of farming.

BEING A state subject, agriculture deserves a proper, whole hearted and sincere attention from the respective states for its all-round development. So agricultural research, extension of research and implementation of improved practices in the state and actualization of higher yields are the prime responsibility of the government concerned.

Agriculture in India contributes nearly 30% of Net Domestic Product (NDP) and employs 70% of the people. Undoubtedly, agriculture is the backbone for the development of our economy. Out of 323 million hectares of the geographical area in India, 123.6 million is cultivated. Out of this 123.6 million, only 40% of the land has fully or partially assured irrigation. The other 60% is either rain-fed or non-cultivable.

The government of Andhra Pradesh has taken an initiative in modernizing its agriculture. Large-scale research and development in agriculture has been carried out in various improved packages under dryland farming schemes. Kuppam division of the state constitutes five Mandals. (Mandal is a unit of revenue, roughly one-third of a block) In this division the average annual rainfall is 741.6 mm. It is one of the drylands of the state, occupying the south-west part of the southernmost district of Andhra Pradesh, Chittoor. Out of 24,000 hectares of land, 9,700 hectares are under actual cultivation.

There is a general perception that lack of water resources is the main barrier to improved productivity. However, studies confirm that it is the effective utilization of water and not the quantum of rainfall which is needed for the survival of the crops and hence, enhancement of productivity. So it can be rightly said that the enhancement of productivity and bringing more lands under irrigation are the need of the hour, given the phenomenal growth in the demand for agricultural commodities.

Watershed committees comprising villagers—both the farmers and the landless poor—undertake participatory watershed development plans in the demarcated areas. Under the plan, water harvesting is adopted as the main strategy to improve agricultural productivity. The 'ridge to valley' treatment of water is generally taken up. The treatment includes the interception of run-off water with water harvesting structures, soil and moisture consumption works (like contour bunding, rock-filled dams, gully control structures) and water harvesting structures (like continuous contour trenching, check dams, percolation tanks, farm ponds, etc.)

- Between 1997 and 2000 the water level in Kuppam rose by about 1.5 to 2 metres.
- The dug wells have been recharged in watershed villages.
- Surplus of water, assured irrigation and drinking water are available throughout the year.

Till the latter part of 1990s, Kuppam was classified as a less developed agricultural block owing to low irrigation component (36.7%), low use of fertilizers (30 kg/acre), low farm income (Rs 1,971 per acre) and low per capita foodgrains availability (66 kgs). All five Mandals were categorized as backward and poor.

An appropriate dryland technology, modelled on the agricultural technology adapted in Israel was identified and

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implemented for the first time in Indian conditions in Cheldiganipelle village of Ramkuppam Mandal (covering 200 acres) in 1991. BHC India Private Limited Company was engaged as the agency to implement the technology. In 1998 Japanese International Cooperative Agency provided grants in kind for drips and sprinklers alongwith filtration and implementation in Kuppam. The project area encompasses 1,600 acres covering 54 villages.

The objectives of the project were :

- To actualize the potential of the local drylands of Kuppam region through adaptation of agricultural techniques on scientific lines and with close monitoring.
- To develop and adapt a sustainable and profitable agricultural system through farmers' active participation.
- To give a boost for large-scale farming involving high value crops for meeting domestic and export requirements.
- To spread the knowledge of agriculture and to pave the way for adaptation of modern technology for small and marginal farmers' fields of Andhra Pradesh.

The core elements of Israeli technology which were included in the implementation of dryland technology in Kuppam could be explained in the following manner :

* Deep ploughing for improved infiltration of rain water thereby increasing water storage capability of soil.
* Reduction in soil compaction giving rise to better root penetration and proliferation.
* Better weed control and efficient utilization of water and nutrients.
* Drip irrigation system for ensuring optimal irrigation.

There is a general perception that lack of water resources is the main barrier to improved productivity. However, studies confirm that it is the effective utilization of water and not the quantum of rainfall which is needed for the survival of the crops and hence, enhancement of productivity.

* Sprinklers irrigation system for timely and effective land preparation.
* Use of farm machinery and agricultural equipment for improved land, labour and water efficiency.
* Fertigation (i.e. application of fertilizers in the crop root zone through irrigation water) based on soil analysis, crop nutrient, water requirement, crop developmental phases and targeted yield.
* Crop planting based on market requirements.
* Use of quality seeds and close monitoring of crops for best and disease incidents for producing export quality agricultural commodities.

In Kuppam 28 varieties of crops are grown, including export crops like gherkin, pepperochini, baby corn, Greece pepper using Israeli technology.

Crop diversification can be clearly recognized on analyzing the change in cropping pattern in Kuppam division. The Mandals which traditionally grew paddy (for self-consumption) and sugarcane (to get an assured income) are now growing flowers, pumpkins, bananas, beans, cabbage, capsicums, chillies, potatoes, tomatoes, okras, onions, etc.

The Table 1 shows the total acreage under three export crops-gherkin, baby corn and Greece pepper. The average gross and net incomes earned per acre are also shown.

Table 1
Export Crops

Crop	Total Acres	Average Gross Income/ Acre	Average Net Income/ Acre
Gherkin	70.05	37,077	15,655
Baby Corn	19.60	14,322	9,037
Greece Pepper	11.95	40,000	29,500

Source : Office of the BHC India Private Limited, Kuppam, Andhra Pradesh

Table 2 draws a comparison between the yields, incomes, expenses and the net incomes earned by farmers using old technology and new technology. From the table it can be seen that under the new technology the yields are more for every crop. The expenses which the farmers have to incur under drip and sprinkler irrigation are more than that they need to incur under traditional methods of irrigation. But the income which the former generates is more than that generated by the latter. In fact, a comparison of the net incomes show that the farmer benefits more than 100% in terms of net income for crops like baby

corn, gherkin, sugarcane and tomato. For beans, cabbage, chillies, egg plant, babycorn, potato and sunflower the farmers' profit over traditional methods has been between 50% and 100%.

A farmer owning about 3 acres of land, using drip and sprinkler irrigation and raising export-oriented crops like capsicum, gherkin, red cabbage and chillies can expect to earn between Rs. 35,000 and Rs 40,000 per month.

Sustainable farm practice with the help of Integrated Pest Management, Integrated Nutrient Management, Integrated Weed Management, etc is the need of the hour. With the ever-expanding population and its shooting demand for foodgrains, the pressure on agriculture will be heavy in the days to come. The country lacks sufficient area-specific technology. Region-specific agro-technology backed by a strong will to implement with sincere effort will definitely generate wide awareness among our poor farmers.

Learning from the experience in Kuppam it can be said that with the invention and innovation of improved agricultural technology, the productivity under dryland farming can be raised above the national average without having any negative impact on environment. What is required is to find out what is the most suitable method of farming. Once that can be communicated to the farmers, with some support, the farmers can raise new and more profitable crops. ❐

Table 2 : A comparison

Crop	Yield in kg/acre		Income Rs/acre		Expenses Rs/acre		Net income Rs/acre	
	Old	New	Old	New	Old	New	Old	New
Baby Corn	2,500	4,000	12,500	24,000	8,000	9,000	4,500	13,500
Beans	2,800	4,300	14,000	21,500	3,700	4,700	10,300	16,800
Cabbage	8,600	15,000	25,800	44,400	7,280	9,040	18,520	35,360
Chillies	850	1,560	20,400	37,440	6,100	9,920	14,300	27,520
Egg plant	6,000	10,667	15,000	23,467	5,950	7,900	9,050	15,567.4
Gherkin	11,500	20,000	34,500	59,688	16,400	21,588	18,100	38,100
Popcorn	900	1,500	8,550	14,250	2,150	2,250	6,400	12,000
Potato	6,500	9,000	22,750	31,500	8,050	8,750	14,700	22,750
Sugarcane	33,000	63,000	28,050	55,250	8,000	7,990	20,050	47,260
Sunflower	450	620	20,700	28,520	8,950	10,820	11,750	17,700
Tornato	7,300	12,755	25,550	44,800	11,150	15,350	14,400	29,450

Source : Office of the BHC India Private Limited, Kuppam, Andhra Pradesh

INDIA'S ECONOMIC STABILITY...

(Contd. from page 24)

The world accepts that India's integration with the global economy will necessarily by in stages, and that it cannot give up all capital movement controls or open up its market to unbridled international competition. But the point is well taken that India continues to make credible progress towards globalisation.

The elimination of all quantitative controls on imports is a giant step forward considering the vastness of India's agriculture and a highly diversified industrial structure with unorganised sectors including small-scale manufacturers, contributing the most to output, employment and exports. Levels of tariff protection for home products, both agricultural and industrial, are well within the bindings which India had made with the World Trade Organisation (WTO). No longer a sheltered market, India's growth has also come to depend on exports and it may take two to three years more before India can secure at least one per cent of world trade.

With self- sufficiency, food stocks are rising. Food and foreign exchange reserves constitute the underlying strength of the economy. But what has impressed the international community is the buoyancy of the services sector, which has helped sustain growth when agriculture or industry falters, but, even more importantly, the spectacular development of Indian software services. The prospect of India promoting itself as a software super-power by 2008 seems well within reach. ❐

(PIB Feature)

Poverty and Adolescent Girl Health

Anant Kumar

Adolescent girls need to be considered as a special target group by schemes and development programmes. They need a package of services/ facilities, which will enhance their capacity for advancement and enable them to become capable citizens.

ADOLESCENCE IN girls has been recognized as a special period in their life cycle that requires specific and special attention. There are direct linkages between poverty and adolescent girls' health and vast majority of poor girls caught in this vicious circle are the young mother to be of the 21st century, deprived of their basic rights to health, education, development and independence. Health and nutritional needs of adolescent girls are mostly ignored. There is enough evidence to indicate that less resources are invested in their health care—very few receive medical care and those that do are taken to local and less qualified doctors.

Studies conducted in three metropolitan cities—Bombay, Calcutta, and Madras indicates that a significantly higher proportion of girls compared to boys fall into grade II and III malnutrition. The cumulative effect of poverty, under nourishment and neglect is reflected by their poor body size/ growth and narrow pelvis as they grow into adolescence, making child bearing a risk. Girls between 13-18 years of age show lower percentage of iron, and with the onset of menarche become highly susceptible to anaemia. A majority of girls from poor families, with the onset of adolescence are 12-15 cm shorter than their well to do peers.

With such health conditions, a large number of girls from poor households are pushed into early marriages, which are consummated almost immediately after menarche of the 4.5 million marriages that takes place in India every year. Three million marriages involve, girls in the 15-19 years age group. Girls bearing their first baby between the ages of 14-18 are at obstetric risk and the subsequent result is low birth weight babies and preinatal complications, common among teenage girls. The upsurge of female deaths in the age group of 15-19 years bears testimony to the high mortality rate of women.

Adolescent girl's health covers mortality, morbidity, nutritional status and reproductive health and linked to these are environmental degradations, violence and occupational hazards all of which have implications for adolescent girl health. The health of adolescent girl is intricately related to the socio-economic status of the households to which they belong and their age and kinship status within the households. Given the predominantly patriarchal setup, girls get a lower share in the household distribution of health, goods and services compared to the men and boys. Girls in the 13 to 16 years of age group consume less food than boys. There is data to show that in situation of extreme food scarcity the adverse effect on the nutritional status of girls is greater than for boys. Girls in the 13 to 16 years of age group consume less food than boys. However, in the intra-household distribution of labour, adolescent girls get the major share of economic, procreative and family responsibilities. Due to the competing demands on their time and energy, as well as their socialization, girls tend to neglect their health. The lower access to food coupled with neglect invariably leads to a poor nutritional status and a state of ill health for most of the adolescent girls' health.

Adolescent girls' health plays an important role in determining the health of future population, because adolescent girls' health has an intergenerational effect. The cumulative impact of the low health situation of girls is reflected in the high MMR, the incidence of low birth weight babies, high prenatal mortality and foetal wastage and consequent high fertility rates.

The MMR for India is high and maternal death constituted 1.1% of the total reported death in 1990. Further, it is estimated that 15% of

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deaths are in the reproductive age group (15-44 years) are maternal deaths. The specific cause of maternal death shows that bleeding and anaemia are the two major causes of death followed by abortion and toxemia. Severe anaemia is one of the important reasons for abortion, premature births and low birth and low birth weight of babies.

It has been observed that many Indian girls enter motherhood without adequate precaution for it. It results in high wastage of human resources, increasing rate of maternal mortality, infant and child mortality. The most relevant cause behind these problems is ignorance of mother, inadequate preparation of adolescent girls for safe motherhood and various undesirable practices prevalent in Indian society. Furthermore, 20 percent of women in the world become pregnant before attaining 20 years of age. This figure is much higher in a country like India. The incidence of teenage pregnancy, which is very high in India, is responsible for high infant and maternal mortality (NIPCCD, 1992-93).

Approximately 138 million of India's population is between the ages of 15-25 years. About 50% adolescent girls get married below the age of 20 in U.P, M.P, Bihar and Rajasthan, which contribute to 40 percent of India's population. It is rather unfortunate, but true that in the majority of girl children in India, there is no period of "adolescence" as they shift from childhood to adulthood and soon become a pregnant adult.

However, these potential mothers and future homemakers continue to face the constraints of nutritional inadequacy—which is associated with high maternal mortality and morbidity. This is significantly higher in the states where early marriage of girl child is the norm. The Government of India NFHS survey in 1992-93 revealed the maternal mortality rate in the country as 420 deaths per 100,000 live births.

Widely Prevalent

As malnutrition amongst the child population in the country is widely prevalent, it follows that a moderate to severe degree of malnutrition would persist among girl child too. As a consequence, the malnutrition persists throughout adolescence and in pregnancy. As a result, the growth and development of unborn child is affected, giving rise to low birth weight. About 30% of the total births in the country constitute low birth weights and this in turn leads to high infant and child mortality and morbidity. According to the NNMB data (National Nutrition Monitoring Bureau) a very high proportion of girls are at obstetric risk as they enter the 14th-15th year of life with a height less than 145 cm and weight less than 38 kg.

The collaborative study done in Hyderabad, New Delhi, Kolkata and Chennai showed that amongst girls between 6-14 years of age the prevalence of anaemia was 63.8%, 65.7%, and 98.7% respectively. A study in rural area showed that 65.5% parent of adolescent girls never spoke about the physical changes during puberty, like menarche with their daughters.

On the other hand, adolescent girl's conditions of work in the informal sector are oppressive and exploitative, because of low wages, long hours of work, lack of provision for holidays and maternity leave. These lead to malnutrition, anaemia, morbidity and poor occupational health. The exposure of sexual exploitation is also common in the informal sector. In the urban context, majority of migrants live in squatter settlement on construction sites and disease prone areas, with lack of water supply, sewerage, garbage removal or electricity facilities. Medical care, access to education and the public distribution system are inadequate or absent. Adolescent girls are thus a vulnerable group exposed to the deteriorating urban environment, rapid urbanization, lack of employment opportunities, loss of employment, consumption of alcohol, effects of films on crime and sexual deviance, widespread circulation of pornographic literature, precipitate violence on women and adolescent girl. These processes have profound effects on their physical and mental well being. However, research efforts in the area of adolescent girls' mental health, in general, and the effect of violence in particular are scanty.

In recent years urban population has been growing at very high rate due to various factors of socio-economic hardships resulting in migration of rural poor to urban areas in search of employment and livelihood. The increase in urban slum is quite evident, gradually creating serious health problems. The existing urban health services are under pressure and services in the slum areas being most vulnerable and inadequate. There are multiple agencies providing health services in urban areas, but poor coordination among them results in duplication and inefficiency in services. Poor sanitary conditions in urban slums continue to create favourable conditions for disease transmission and health hazards for not only the slum population but for the entire population.

These prevailing conditions are causes of poor sanitation and other problems that have direct and indirect negative influences on adolescent girls' health. Problem of sanitation in the country and its implication for families, particularly the adolescent girls living in urban poor settlement, is frightening. Surveys (MICS-Multi Indicator Cluster Survey, 1995-96, urban slums, UNICEF; and the NFHS 1992-93) in nine states indicate that between 29-71 percent people use open spaces for defecation. Access to toilets among those urban poor generally living in legal slum settlements is just below 40 percent.

The adolescent age group differs in different set ups, according to WHO and UNICEF. The adolescent age group is from 12-18 years. Due to menarche starting at a much earlier age, even at the age of 10-11 years, for all practical purposes, these girls should also be included in the programmes meant for adolescents. There has been concern expressed at the attitude towards menarche (onset of menstruation) and the myths and misconceptions associated with menstruation. The need for sensitively addressing the question of menstrual hygiene, the physiology the anatomy for developing a healthy understanding of the body and its functions; for example, menstruation as a part of growing up is very important.

Adolescent girl scheme is a special intervention for girls between 11-18 years of age to meet the special needs in nutrition, education and skill development. This scheme is extended to 3.91 lakh adolescent girls through 507 selected ICDS blocks in the country. Adolescent health is an important thrust of the new RCH programme.

Realising the situation of the girl child, Heads of the Government of the SAARC Region met at Male in 1990 and declared 1991-2000 AD as 'SAARC Decade for Girl Child'. In fulfilment of this commitment, the Government of India formulated a National Plan of Action (NPA) for the SAARC Decade of the Girl Child (1991-2000 AD) with a major theme of 'Survival, Protection, and Development' to attend to her gender specific needs and requirements to the fullest possible extent. This was a conscious effort to ensure equitable rights, opportunities, benefits and status to the girl child who faces discrimination much before her birth and throughout her life.

Three Goals

The NPA for the Girl Child broadly envisages three gender specific goals for the Decade (1991-2000)—which are akin to those of World Declaration on the Survival, Protection and Development of children in 1990 and the Male Declaration of SAARC.

These are :

- Survival and Protection of girl child and safe motherhood,
- Overall development of the girl child, and
- Special protection for vulnerable girl children in difficult circumstances and belonging to special groups.

State governments have formulated plans of action for girl child appropriate to the condition prevailing in each state. So far, governments of Karnataka, Madhya Pradesh, Tamil Nadu and Goa have formulated the State Plan of Action for Girl Child.

The adolescent girls constitute an area that is not well researched and there is need to investigate how laws and official policies influence their reproductive health. The world's population between 10 and 19 years of age is more than 1 billion and to help meet their sexual and reproductive health needs, better data are needed about the proportion of youth who are sexually active at different ages and about their patterns of sexual behaviour. Situational analyses are required to provide these data, and there is also a need for research to identify a set of indicators that can be used to measure the sexual and reproductive health of adolescent girl health.

There is also not enough information about the context in which adolescent sexual activity occurs. Social situations have a strong influence on adolescent sexual behaviour. Many young people need support in delaying sexual intercourse; others need to know how to protect themselves from pregnancy and infection, others require comprehensive services (including maternal health care). But little research has been carried out into how adolescents view their sexuality and how their views differ from those of adults. What are the best ways to help young people disclose their problems and what barriers to communication exist ? Research should also investigate how laws and official policies influence adolescent reproductive health.

Besides the efforts and independent initiatives taken by different government and NGOs, till recently adolescent girls health has not received any attention. Adolescent girls need to be considered as a special target group by schemes and development programmes. They need a package of services/ facilities, which will enhance their capacity for advancement and enable them to become capable citizens. ❐

Rythu Bazars : Opening A New Horizon

S.V. Satyanarayana

Involvement of farmers in price-decision making process will go a long way in the democratisation of the functioning of the RBs and ultimate handing over of their functioning to the farmers/farmers organisations with necessary safeguards and the support by the government in the form of provision of infrastructure and transport facility.

RYTHU BAZAAR (RB) is a first step taken by the Government of Andhra Pradesh (A.P.) in the direction of empowering the farmer to compete effectively with the open market to get a remunerative price for his produce and to ensure an affordable price to consumer. Thus, the objectives of starting the RBs in the state include:

a) to avoid exploitation of both the farmers and the consumers by the middlemen by creating a positive atmosphere of direct interface between them, so as to enable the farmer to get a remunerative price for his produce and to ensure, at the same time, an affordable price to the consumer;

b) to motivate the farmer to enhance the production of vegetables in general, and off-season vegetables in particular;

c) to enhance the consumption of vegetables by the people of the state, by keeping the prices of vegetables at an affordable level, which will add to their nutritional security; and

d) To avoid wide fluctuations in the prices of vegetables between the places and between the seasons to achieve, ultimately, stabilisation of prices of vegetables at a reasonable level.

A study of RBs at this point of time is essential so that their functioning, based on their objectives, can be appraised, defects analysed, strength identified and remedial action taken for making them effective tools for empowering the farmer. Further, states such as Tamil Nadu have already implemented the concept of Rythu Bazar and some other states are in the process of starting Rythu Bazars in their states.

As of now, there are 96 RBs in A.P. spread over different regions and districts of the state. Out of these, the present study covers 21 RBs selected from the three regions, viz., coastal Andhra, Rayalseema and Telengana.

These RBs are selected from each of the regions, so as to have at least one each of above normal, and below normal RBs in terms of a) number of farmers attending the RB; b) quantity of arrivals of vegetables and c) number of consumers.

Data pertaining to various aspects of the functioning of RBs in the state have been collected by making personal visit to all the 21 RBs. The required data are collected by administering questionnaires to the Estate Officers who are responsible for the administration of the RBs, and the consumers visiting the RBs. Apart from this, the actual situation regarding the attendance of farmers, arrival of vegetables and the consumers visiting the RBs has been assessed through observation method.

One of the important aspects that affects the functioning of a RB is its size. The size of a RB should be viable and attempts must be made at attaining that size, if not starting with that size, for effective functioning and long life of RBs.

The broad norms laid down by the government for the setting up and running of RBs are the following :

Number of vegetable-growing villages to be identified as catchment area per RB	10-15
Acreage under vegetable cultivation in the catch-ment area per RB	500-750 acres
Farmers to be identified per RB	250
Minimum attendance of farmers per day per RB	75

No norm has been fixed for the arrival of vegetables at the RB. Assuming that each farmer may be expected to bring a quintal of vegetables, the daily arrivals of

vegetables, based on the average attendance of about 60 farmers per day (the minimum number of farmers selling vegetables at the RB), the quantity of arrivals may be taken as 60 quintals.

While the norm set for catchment area of vegetable growing villages per RB is 10-15, in reality it varies between 13 and 87, the highest being in the case of Swaraj Maidan RB (Vijaywada) and the lowest being in the case of Fatima Nagar RB(Warangal). However, no such relationship between the performance of a RB and the number of vegetable growing villages could be established. For example, while the C. Camp RB of Kurnool, which has been performing exceedingly well, has got only 20 vegetable growing villages under its fold, the Nalgonda RB, a below average performer, has got 58 vegetable growing villages under its fold.

Thus, a more rational norm in this context may be area under cultivation of vegetables. In other words, a few adjacent villages producing vegetables on a large scale, not one vegetable but different kinds of vegetables, should be a norm for setting up a RB.

The norm laid down for this purpose to start a RB is 250, which seems to be reasonable. Assuming that about one-fourth of the identified farmers come to the RB every day and each farmer brings about a quintal of vegetables to the RB, the RB can cater to about 1200-1500 households per day. If about half to one-third of the households in the vicinity of the RB buy about 4-5 kg. vegetables per visit per household in the RB by rotation, the RB can cater to about 3500-6000 households in its vicinity.

Thus, the norm with regard to average attendance of farmers may be about 60. Even this would result in a RB catering to about 3500-6000 households.

Substantial Gap

However, there is a substantial gap between the number of farmers identified and the number of farmers attending some of the RBs. It varies between 1.79% (Nalgonda) and 200% (C. Camp, Kurnool) of the farmers identified. It may be because of the fact that all the identified farmers may not come to the RB on all the days and the average attendance will be less than the potential identified. But if the RB fails to exploit the full potentiality of the catchment area, it is a matter for concern and every effort shall be made to attract all the potential farmers to the RB. Similarly, efforts must be made to identify the potentiality of the catchment area after a proper study.

However, if a particular RB is not able to absorb the entire quantity of a particular vegetable(s) produced in the catchment area, the farmers may be permitted to sell that particular vegetable(s) in any other RB of the state at the prevailing rate in that RB.

Further, group identity cards may also be issued for three or four farmers together to facilitate the farmers to come to the RB by rotation. This will help the farmers, especially marginal and small, in pooling their produce and bringing it to RB. This may ultimately help in motivating the farmers in organising themselves and selling the vegetables in RB through their nominees.

If some of the large farmers, producing vegetables on a large-scale are not willing to come to the RB to sell their produce, they may be permitted to sell the same through their servants. The identity card issued to the farmer in such cases may include the photo of the servant also. This may ensure continuous flow of vegetables to the RB.

If there is potentiality of vegetable farmers from a few neighbouring villages catering to more than one RB, they may be allotted to those concerned RBs. It would be ideal, if the timings of arrivals of vegetables are staggered, as in the case of some RBs, such as Erragadda, Mehdipatnam, Vanasthalipuram, Swaraj Maidan and C. Camp. This would enable the consumers to get fresh vegetables at any time during the working hours of the RB and the farmers can dispose of their vegetables in a limited time of four hours or so and get back home either to attend to farm work or related domestic work.

Of the variables relevant for evaluation of a RB, quantum of arrivals at the RB constitutes the most important one. It varies between as low as one quintal per day in the case of Ananthapur RB and as high as 1540 quintals per day in the case of Swaraj Maidan RB. As mentioned earlier, arrival of about 60 quintals per day may be the minimum to sustain a RB. There are nine RBs in the sample viz., Pedda Waltair, Kanchikacharla, Tirupathi, Ananthapur, Nalgonda, Fatimanagar, Gopalapatnam, Pochamma Maidan and Chittoor, where the arrivals are less than 60 quintals per day. However, in the case of Chittoor and Pochamma Maidan, where the arrivals are 50 quintals and 40 quintals per day respectively, the situation is almost nearer to the satisfactory level. In other cases, it needs a lot of effort on the part of the concerned to make the RBs sustainable.

Logically speaking, arrivals are only a matter of potentiality. Potential can be realised only when there is market/demand for vegetables, which depends on the accessibility of the RB to the potential consumers. This depends on the location of the RB in concentrated residential areas. It is not difficult to get the farmers to the RB for selling their vegetables, if there is transport accessibility.

In six out of the above nine RBs viz., Peda Waltair, Gopalapatnam, Kanchikacharla, Ananthapur, Tirupathi and Nalgonda, the arrival of vegetables are less than the sustainable level because the RBs are not surrounded by residential localities. In the case of Fathima Nagar, the RB is made completely inaccessible to the consumers from one side by constructing a compound wall. Prior to the construction of this wall, there used to be more activity in the RB. In another case, the RB (Excise Colony, Warangal) is surrounded by two retail and one wholesale-cum-retail vegetable markets. Only in the case of Chittoor RB, the arrivals are less due to failure of monsoon, successively for two years, and the farmers in the catchment area of the RB are not cultivating vegetables on a large-scale.

Thus, it is essential to have a survey regarding the consumer potentiality in the vicinity of the proposed RB made before it is set up.

One important step taken in the direction of effective functioning of RBs is the appointment of a horticulturist in each of the RBs. Wherever the horticulturists are active, they are playing a vital role in bringing about additional area under cultivation of vegetables, in introducing new varieties of vegetables, which were earlier alien to the farmers, in improving the yields of vegetables by encouraging the farmers to use hybrid and improved varieties of seeds and also in enhancing the cultivation

There should be a forum at the state level for the horticulturists to have interaction at least once in three months to exchange their experiences,

of off-season vegetables. The best examples in this regard are Vanasthalipuram, Mehdipatnam, Kurnool, Nandigama and Swaraj Maidan (Vijaywada) RBs. The interaction obtained between the women farmers attending the RB and the horticulturist has been effective in Nandigama RB as the horticulturist is a woman. Thus, wherever the women farmers attend the RB in large numbers, it is advisable to have a woman horticulturist.

Forum

There should be a forum at the state level for the horticulturists to have interaction at least once in three months to exchange their experiences, which will help them in better functioning.

Further, it is necessary to define the role of the horticulturist in unambiguous terms and fix accountability coupled with rewards for efficient functioning. It is also beneficial if the horticulturist is appointed as Estate Officer, especially where the size of the RB does not warrant appointment of both Estate Officer and horticulturist.

Some of the horticulturists complain that their services are terminated after one year of service, and they are reappointed after a gap of one month. This situation needs corrective action.

As per the guidelines finalised by the government, the prices of vegetables in RBs should be 25 per cent less than the open market retail price, to make the vegetables available at reasonable prices to the consumers, and 25% more than that obtaining in wholesale market to ensure better price to the farmer than what he gets in wholesale markets (mandies).

Any RB price which is less than wholesale price means injustice to the farmers, who are brought to the RBs so as to enable them to fetch a better price than what they are given in the wholesale market.

The data are analysed here for each commodity for thirteen months in three RBs, (the total comes to 39, 3 RBs x 13 months). This analysis is done based on the wholesale and retail price data collected in twin cities of Hyderabad and Secunderabad. For other RBs, in the absence of such data, a similar analysis could not be done. Out of the 39, in one case (ladies finger) we find as many as 8 showing the RB price about 20% less than the wholesale price, which is a matter of serious concern. In such a situation the whole spirit of RB is destroyed. The most serious cases of this negative pricing (the price being less than wholesale price by 25% and above) are in respect of bitter gourd and ribbed gourd. One of these i.e., ribbed gourd is the most popular and commonly used items of consumption of the masses.

Data pertaining to the wholesale prices and RB prices (for all the three RBs) were collected on a weekly basis for 52 weeks.

There are more serious violations of norms, where RB

prices were more than 100% of the wholesale prices. For example, in the cases of cabbage in 18 out of 39 situations the RB price was more than 100% of wholesale price, followed by the prices of brinjal and bitter gourd. Brinjal is once again a very popular item of consumption where the margins are exorbitantly higher than the wholesale price. On the whole, in 34 situations for the nine commodities put together the RB prices were higher than the wholesale prices by more than 100%.

The former situations of negative prices frighten away the farmers from the RBs and discourage them to come to the RBs. For whatever reasons, if this is done deliberately, it would destroy the very concept of the RB, resulting in flourishing of the regular open market system. In the latter situation, it frightens away the consumers from entering the RB as the prices in RB would be higher than those in the open market. In either case the ultimate result is making RBs dysfunctional. This is an issue which needs immediate and utmost attention. It is to be analysed as to whether the estate officer or the decision making authorities are responsible for this.

Thus, there have been serious violations of the norms for fixing the prices at RBs. Further, it is very important and relevant to note that the RB prices are fixed without reference to open market retail prices of vegetables.

In this context, it is of interest to note the situation obtaining in the RBs of Krishna district, where the prices of all varieties of vegetables are the same in all the RBs of the district. The prices in RBs are guided by the prices fixed in Swaraj Maidan RB, which are fixed taking into consideration the prevailing wholesale and open market retail prices in Vijayawada. If it is done deliberately to bring about price stabilisation in RBs, by eliminating lower prices in RBs, where there is flooding of vegetables and high prices in some, because of inadequacy of arrivals, it is a good thing to happen and it must be encouraged.

Price Fixation

The price fixation process as envisaged originally expects the involvement of farmers in the decision-making process. It is practically not done at all. The estate officer decides the price to be fixed by taking into consideration the wholesale prices obtaining at the nearest identified wholesale market. Many a time they may not get the information regarding the prices obtaining in the wholesale market and they go by the previous day's prices. The fact that the RB price as fixed is occasionally less than that of the wholesale price creates an impression that there is collusion between the concerned person who reports the prices/decides the RB prices on the one hand and the traders on the other.

In the light of the above, it is necessary to develop an efficient and foolproof mechanism to obtain reliable wholesale prices and open market retail prices of vegetables on a daily basis, so that the decision making with regard to price fixation depends on a rational basis. Some times, the wholesale prices are not obtained from the nearby wholesale market but only and from some other markets.

The procedure regarding fixation of prices of vegetables in RBs (25% above wholesale price and 25% below retail price) needs reconsideration. Practically, it is not possible to fix such a price. This formula will also not make the RBs to give an indicative price to the other vegetable markets. This will also leave the farmers in uncertainty, as he will not know the price that he would get till he brings his produce to the RB. An ideal situation would be to have some sort of stability in the prices of vegetables at the RB, at least in the short-run, which will ultimately lead to price stabilisation of vegetables in the state, and make both the farmers and consumers stick to the concept of RB. Such a price will ensure the farmer at least the cost of production plus a reasonable margin, so as to motivate him to produce vegetables and bring them to the RB.

Our survey reveals that in many RBs the presence of non-farmers is quite significant. The idea behind allowing the non-farmers, mostly belonging to self-help groups, is to make the vegetables, which are not grown in the catchment area of the RB, available to the consumers.

In some RBs the turnover generated by non-farmers is equal to, if not more than, the turnover generated by the farmers. However, in the case of commodities other than vegetables, the situation may be different. For example, rice millers are allowed to sell rice in the RBs. In such a case their (millers) total surplus, many a time, may be much more than that of the farmers bringing vegetables to the RB. It is suggested that the farmers, instead of non-farmers, may be encouraged to process their produce and sell the final product directly to the consumers at RBs.

For example, paddy may be converted by the farmers into rice, and pulses such as redgram, black gram, gram and green gram into dal and groundnut pods into kernel for table purpose and sold in the RB directly to the consumers. This will ultimately provide an effective and competitive market structure in the case of these products and leads to empowerment of the farmer and price stabilisation of essential agricultural commodities.

In any case, the activities of self-help groups pertaining to other products, other than vegetables, should be separated from the RB. A separate premise adjacent to RB, with a wall separating them, may be allotted for them to carry out their activities.

Participation of Women

It is heartening to note that in Krishna and Visakhapatnam districts, the participation of women in the RB is very high at about 50% in the case of Krishna and at about 60% in the case of Visakhapatnam. While some women farmers coming to RBs were active participants in agricultural operations, for others it is an opportunity to get employment. While in the former situation agricultural labour are engaged to substitute the women coming to RB, generating additional employment at the village level, in the latter it improves the standard of living of the family.

Some of the farmers at the RBs complain that the informal channel of finance for their agricultural and personal needs i.e., the wholesaler, has been cut-off, as they are not taking the vegetables to the wholesaler any more.

In this context, it is worth emulating the experience of Nandigama RB by the other RBs of the state. In this RB, a bank called Swayam Krishi Co-operative Bank has been started by the farmers themselves. The modus operandi of the bank is that every farmer, who comes to the RB, contributes a sum of Rs. 50 per day towards her/his share capital. Once her/his share capital touches Rs. 1000, she/he will be provided with a loan of up to Rs. 3000, which should be repaid at the rate of a minimum of Rs. 40 per day. Once she/he repays the loan, she/he is given a loan of Rs. 3000 again. The farmers feel that this scheme is very helpful to them.

As mentioned earlier, a RB requires a minimum arrival of 60 quintals of vegetables for its sustenance. A RB of that size requires about 1200 consumers to visit on an average per day. This number could be expected if there are about 2500 households in the vicinity/with in a radius of one or two kilometers of the RB.

Taking the above into consideration, a RB may be started with one shed to accommodate 60 farmers. It is better if the RB is located in an area of minimum one-acre land so that further expansion can take place without much of a problem. The shed may have a size of 1200 sft. so as to provide at least 30 sft. space for each farmer. There should be a platform of 2.5 sqft. height for accommodating these farmers and their vegetables, so as to facilitate easy visibility and mobility for transactions between the farmer and the consumer. There should be adequate space between the rows of the sheds so as to facilitate the transaction and the arrivals. Once it exceeds 75-80 farmers another shed of 1200 sqft. may be thought of, so as to take care of the possibility of increase in the turnover of the RB. Each RB should have a small office to accommodate the estate officer and the horticulturist and their records. Further, there may be functional type of urinals. Further, the RB should be well connected with the villages in the catchment area by providing adequate transport services.

Income Generation

Though the objective of RBs is not to make any surplus, in the long run, they must be able to generate revenues sufficient to meet their operational expenditure. Wherever possible, efforts must be made to explore the possibility of generating revenues to the RBs, without sacrificing the basic objective of RBs.

There are about 14 RBs in our study of 21 RBs, which are not generating any income. While three RBs are making surplus by generating more income than their expenditure, four RBs are running on deficit by generating less income than their expenditure. One RB (Mehdipatnam), in fact, is cross subsidising the activities of other RBs by transferring its surplus to the other RBs, which needs reconsideration. If a RB generates any surplus, it is better if it is used to develop that particular RB.

An analysis of the farmers responses may be made next based on interviews with them. A total of 140 farmers were interviewed in twelve RBs (Erragadda, Vanasthalipuram, Alwal, Ananthapur, Kurnool, Chittoor, Tirupathi, Pedda Waltair, MVP Colony, Gopalapatnam, Akkayapalem and Seethammadhara) put together. Of the persons interviewed, about 60%, on an average, were active participants in the cultivation; and the others, who have been bringing

vegetables to the market, were members of the families cultivating vegetables.

These cultivators bring only vegetables to RBs and nothing else. They come to the RBs twice/thrice a week on an average. All of them have identity cards for participating in RBs. In rare cases, these farmers have their vegetables sold by their employees. Where the farmers engage other persons to sell their vegetables such employees are paid a daily wage of about Rs. 60.

It was found that some farmers bring much less vegetables to the RB than they produce and sell the balance of the vegetables in the wholesale markets, as the RB is not capable of absorbing the entire quantity produced by them. Going by the quantum sold by the farmer in RB, they have a margin of Rs. 15-20/10 kg or Rs. 1.50-2.00 kg. On an average they make about Rs. 150-200 per quintal by selling vegetables in the RBs, which is perhaps 150% more than what a labourer gets in the village as their daily wages.

Thus, the farmers are, by and large, happy as they get a substantial additional income per day because of participation in RBs. However, there may be instances where the farmers are unhappy, as sometimes the price fixed for their produce at RB may be about the same as in the wholesale markets and sometimes unfortunately much less than the wholesale price prevailing in the market. This happens especially in slack season when the prices of vegetables go up. This may be done perhaps to divert the arrivals at RBs to the wholesale markets where the arrivals are less. This is a matter for investigation.

The concept of RB in its actual practice has been universally acclaimed both by the farmers and the consumers. RBs have been found to be beneficial to the farmers in getting remunerative prices and to the consumers for getting vegetables at affordable prices. Thus, the standard of living of both the farmers and the consumers would get enhanced. Further, any improvement in the economic status of the agriculture would improve the state economic activity and the economy in general.

However, a few wrong locations of the RBs should not come in the way of successful implementation and continuation of RB scheme as such. Where some of the RBs, which are identified as non-viable because of wrong location (it is essentially because of this reason that some of the RBs have become non-viable), such RBs may be shifted to ideal locations.

Ultimately, the prices at the RB should dictate the prices of vegetables in the open market, and should be fixed with reference to the cost of cultivation to the farmer plus a reasonable margin to him so as to achieve the ultimate objective of price stabilisation of vegetables in the state beneficial to both the farmers and the consumers. In any case, involvement of the farmers in the price-decision-making process will go a long way in the democratisation of the functioning of the RBs and ultimate handing over of their functioning to the farmers/farmers organisations, with necessary safeguards and the support by the government in the form of provision of infrastructure and transport facility; and by making them self-sufficient in so far as meeting the routine regular expenses are concerned. ❐

Asian Economies Upturn

Asia's slowing economies will stage a strong rebound before the end of the year, boosted by a surge in US corporate profits, according to a regional analysis by SG Securities, a division of global financial group Societ Generate Group. "We are forecasting that US corporate profits will stabilise in the third quarter before surging strongly in the fourth quarter," chief economist Manu Bhaskaran said in the report.

Himachal to Boost IT sector

The Himachal Pradesh government has formulated a plan envisaging generation of employment to one lakh people and attract a Rs. 20,000 crore investment in Information Technology sector by 2010.

The plan is based largely on NASSCOM's recommendations and emphasis had been given to computerisation related to e-governance. The government was committed to focus its attention on activities wherein delivery of various services to citizens would be ensured through internet.

Bio-Pesticide From Custard Apple

Sobhan Parida

It is now time for the government and agriculture extension officers at various levels to take immediate steps to popularise the use of this highly effective eco-friendly bio-pesticide from fruit which can protect crops and save money as well as the environment.

EXTENSIVE USE of chemical pesticides was one of the important factors that contributed significantly to the success of the Green Revolution, the others being high yielding hybrid seeds, chemical fertilizers and expansion of irrigation facilities. However, now it has been realised that the utility of all these have almost been stretched to the limit and thereafter, those are gradually turning hostile to the environment and ecology, public health and even to the long term benefits of agriculture itself. Particularly, the chemical pesticides have proved to be the most hazardous. That is why many of those have been banned in the Western countries, but are still in use in the developing countries, including ours, because otherwise it may lead to a loss of about 35% of the crop harvest, which farmers can hardly afford to. Therefore, in recent years agricultural scientists are frantically searching for eco-friendly natural alternatives of chemical pesticides and their most favoured line of research has been to scientifically study our traditional knowledge about it, which has paid rich dividends. As a result, a number of bio-pesticides, mostly the extracts of various common plants, have already appeared in the market and are in the process of substituting the hazardous chemicals in crop protection. A few of such plants and their parts containing the pest killer principles are listed is (Table-1)

A new but very promising addition to the above list is the leaf and seed of custard apples 'saripha'. Named as Anona Squabosa by the botanists, it is a hardy plant with wide adaptability. It grows in wild as well as in orchards in most part of our country, particularly in the forests of Telengana of Andhra Pradesh, Punjab, Rajasthan, U.P., M.P., Orissa, Maharashtra, Karnataka, Kerala, and Tamil Nadu. So far, the work done at several research centres in our country, including the International Crop Research Institute for Semi-Arid Tropics

Table 1

Plants and their parts carrying insect killing principles

Common name	Botanical name	Part cont. the principles
Neem	Azadiracta indica	Leaf, seed & bark
Karanja	Pongamia Glabra	Seed and hark
Tobacco	Nicotiana Tabacum	Leaf & seed
Chilli	Capsicum Annum	Seed
Garlic	Allium Sativum	Bull
Clerodendron	Clerodendron Inermi	Leaf
Lantana	Lantana Camara	Leaf & flower
Derris	Derris Elliptica	Root
Chrysanthemum	Chrysanthemum cennerari-Folium	Flower
Sweet flag	Acorus Calamus	Rhizome
Mahua	Madhuca latifolio	Seed
Karabi	Narium Indicum	Flower
Paper	Pipper Nigram	Seed
Lalbharenda	Tatropha Gossipifolia	Seed
Beguna	Vitex Negundo	Leaf
Bitter gourd	Momordica Charantia	Root
Marigold	Targetis Eracta	Root
Coriatia	Coriatia Cephalonica	Stem
Artimisia	Artimisia Kurramensis	Seed
Sadabahar Ipomea	Cornea	Leaf
Bel	Aegle Marmelos	Leaf

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(ICRISAT), Patanchur, the Indian Institute of Chemical Technology (IICT), Hyderabad and the Oil Technological Research Institute (OTRI), Anantapur and abroad, such as the International Rice Research Institute (IRRI), Philippines has proved that its seeds and leaf extracts can serve as effective eco-friendly pesticides.

The scientists have borrowed this wisdom from our traditional knowledge too. For a long time, the tribals and rural folks have been using it as an insect repellent for various purposes, including agriculture. The tribals of Andamans are known to smear a paste of its leaves on their bodies to keep away the bees, while harvesting wild honeycombs. Similarly, some tribals of Karnataka sprinkle bits of raw custard apples over ponds to tranquilise fish which facilitates them to catch the grown-ups, leaving the juveniles. It is a classic example of traditional sustainable harvesting practice. In rural South India, women use crushed leaves of custard apple to get rid of head lice.

Custard apple contains about 25-30% flat and long seeds, with brown to black brittle shells. The fruit, with an average weight of 175g., contains about 38 seeds and those of a select variety, weighing upto 644 g., provide as many as 80 seeds. The hull kernel ratio of these is 30 : 70.

When pressed in cold the seeds produce 25-27% of oil, which can also be extracted by hot pressing and solvent extraction with acetone. With an iodine value of 84 and saponification value of 188, its fatty acid composition is as in (Table 2).

The oil cake obtained from it contains 7 to 8% moisture, 30% protein, 5% carbohydrate and 5.4% ash. Therefore, it can also be used as an ideal nitrogen-rich manure.

Table 2

An average fatty acid composition of custard apple seed oil.

Fatty Acid	Percentage
Myristic	0.3
Palmitic	12.5
Stearic	8.8
Bleic	5.4
Arachidic	1.8
Hexa-decenoic	2.3
Linoleic	20

Custard apple oil is not edible but can be used for soap making. However, its most attractive as well as lucrative use rests on its anti-freedant pesticidal property, to an extent of 80%, which is higher than azadirachtin-rich neem oil. The powerful toxic principles present in custard apple seed oil have been identified as Anonaceous—acetogennins and a host of other compounds having "squamesin" skeleton. As compared to neem derived compounds these pesticides, which act as respiratory inhibiting toxins, are more stable and therefore, can be stored longer.

Field experiments conducted by the IICT scientists have proved that the custard apple seed extract containing these are effective against several crops including cotton bellworm, tomato fruit borer, chillies thrips, mites, jassids in bhindi, gram pod borer and sorghum pests. It can also control cabbage aphid, pulse bettle, green scale, cotton stainer, hairy caterpillar, brown plant hopper, saw-toothed grain beetle, diamond back moth, white-backed plant hopper and tobacco caterpillar. In Vietnam, custard apple seed oil has been used to effectively control rice leaf hoppers. The scientists of the ICRISAT have found that the seed extract exhibits synergestic activity, when used in combination with neem seed kernel extract.

The leaf extract of custard apple is also reported to have all bio-active compound contained in the seed extract and both are almost equally effective against pests.

The custard apple oil and its vapours are powerful eye-irritants and therefore, should be handled with care during extraction as well as spraying. On the otherhand, the compounds present in it are known to have remarkable anti-cancer properties, much more than toxel.

Our state produces reasonably large quantity of custard apples, whose seeds are simply wasted. Therefore, it is now time for the government and agriculture extension officers at various levels to take immediate steps to popularise the use of this highly effective eco-friendly bio-pesticide from fruit which can protect crops and save money as well as the environment. ❐

India, Thailand sign pact

With A view to facilitate investment flows, Finance Minister Yashwant Sinha and Thailand Foreign Minister Surakiart Sathirathai, exchanged instruments of ratification on bilateral investment promotion and protection agreement. The agreement, which has come into force will remain valid for a period of ten years.

Jharkhand As a New State

One of the main strategies for development of Jharkhand is to ensure agricultural and rural development on a sustainable basis.

THE NEWLY created Jharkhand state was carved out of Bihar and came into being on November 15, 2000. Having an area of 79714 sq. km Jharkhand has the potential to develop as the financially most viable state in the whole country owing to its mineral-based resources and the available industrial infrastructure. The state comprises the districst of Ranchi, Gumla, Lohardagga, East Singbhum, West Singbhum, Hazribagh, Giridih, Koderma, Chatra, Dhanbad, Bokaro, Palamau, Garhwa, Dumka, Deoghar, Godda, Pakur, Sahebgunj, Simdega, Latehar, Saraikela Kharsawan, and Jamtara. The new state is bordered by Bihar, Madhya Pradesh, Orissa and West Bengal to its north, west, south and east respectively.

The state's total geographical area is 79.7 lakh hectares. Out of this the cultivable land is 38 lakh hectares and the present net sown area is only 18.04 lakh hectares. The net irrigated area is only 1.57 lakh hecatres which is 8 per cent of the net sown area. More than 29 per cent land is covered by forest area.

Jharkhand's population is 2,69,09,428 according to the provisional census 2001 figures. In 1991 census, Jharkhand's population was 2,18,43,911. Its population growth rate in one decade has been 23.19 per cent. The population density in the state is 338. The sex ratio in the state too has shown an upward trend: 941 in 2001 from 922 in 1991. The female literacy rate improved from 25.52 per cent in 1991 to 39.38 per cent in 2001. The main languages spoken in Jharkhand are Santhali, Mundari, Kurukh, Khortha Nagpuria, Sadri, Khariya, Panchparagnia, Ho, Malto, Karmali, Hindi, Urdu, and Bangla. In some pockets Oriya, Maithili and Bhojpuri are also spoken. Sarhul, Karm, Sohrai, Badna, Tusu, Id, Christmas, Holi and Dushahra are the festivals celebrated in the state. The folk music of the state comprises Akhariya Domkach, Dohari Domkach, Janani Jhumar, Mardana Jhumar, Faguwa, Udasi, Pawas, Daidhara, Pahilsanjha, Adhratiya, Vinsariya, Pratkali, and Jhumta. Jharkhand's folk dances include Paika, Chaw, Jadur, Karma, Nachni, Natua, Agni, Choukara, Santhal, Jamda, Ghatwari, Matha, Sohrai, and Lurisayro. Santhali Bhitichitra, Oraon Bhittichitra, and Jado Patiya are the paintings of the state.

The nascent state of Jharkhand has an enormous potential for exploitation of coal, mica and other minerals particularly in Singhbhum, Bokaro, Hazaribagh, Ranchi, Koderma and Dhanbad. It is evident from the existing status of industrial units operating in the district that many ancillary industrial units could be established in and around Bokaro, Jamshedpur, Hazribagh, Ranchi and Dhanbad using the raw materials in the form of bye-products of the industries located in these districts. There is ample scope for development and promotion of artisan-based activity such as manufacturing cane and bamboo products in Hazribagh, Ranchi, Singhbhum and Jamshedpur districts. There is enough scope for development of artisans in metal ware, stone carving, handlooms, wood works and leaf plate-making activities. The scope for financing the transport sector is very high.

The second State Irrigation Commission has made an assessment of the water resources in the state and identified 16 river basins which can be harnessed through major, medium and minor irrigation schemes. The Commission had identified separate potential for reservoir schemes and lift irrigation schemes.

The Commission has also assessed the ground water resources in the state at 5482 million cubic metres. The average stage of development of ground water in the state is approximately 20 per cent with further potential for future development. Ground water exploitation under the private sector is mainly through dug wells. With the huge ground water potential available 8-10 lakh additional wells can be constructed. Physiographically, the entire state is a plateau area where ground water resources may not be depended upon for rabi and summer crops.

It is proposed to take up a large number of schemes under irrigation and set up watershed development projects. The main rivers flowing in the state are Damodar, Mayurakshi, Barakar, Koyal, Sankh, Son, Auranga, More, Karo, Bansloi, South Koel, Kharkai, SubarnaRekha, Ganga, Gumani and Batane.

Horticulture

Horticulture is one of the important sub-sectors of agriculture, having ample scope for expansion in Jharkhand. The total area occupied by various plantation and horticulture (P&H) crop in the state is about 2.57 lakh hectares with an estimated total production of 37.85 lakh tonnes. Different kinds of fruit crops are grown in Jharkhand. Considering the agro-climatic suitability and future prospects, the state government has programmed to implement various schemes/ programmes for promoting this sector. A major thrust is being given for bringing additional areas under various plantation and horticulture crops and enhancing the productivity of the yielding crops. Besides supply of protein-rich food, the fisheries sector also has vast potential to provide employment to the people in the rural areas.

Jharkhand is endowed with vast fresh water resources in the form of tanks/ponds and reservoirs. These water bodies are yet to be exploited for commercial aquaculture. Thus, there is an abundant scope for horizontal and vertical expansion of fish culture in the state. The livestock production at 10.73 lakh litres of milk, 661.4 million eggs and 7.04 lakh kgs. of wool in Jharkhand indicates that this sector makes a sizeable contribution to the state's economy.

Most of the dairy development activities in Jharkhand are taken care of by the Diary Development Directorate. It promotes milk producers' unions in the districts of Ranchi Lohardagga, Palamu, Gumla, Chaibasa, East Singhbhum Hazribagh and Bokaro and helps in milk collection from rural areas through milk cooperative societies and marketing in the urban areas, establishment of mini-diaries and provision of technical inputs extension services.

The state has a forage seed production farm at Chatra. There is also a feed plant in Ranchi which manufactures and supplies adult cattle feed (ACF) and bypass protein feed (BPF) to the farmers on cost basis. There are diary plants at Jamshedpur, Bokaro and Ranchi and 13 milk-chilling plants in different districts of the state under the Diary Development Directorate.

With a view to having qualitative and quantitative achievement of wool and mutton, a new breeding policy has been adopted. Under the policy, selective breeding and cross-breeding programme had been launched at Chatra where Shahabadi ewes are crossed with Rambouillet breed of USA. Besides, Corriedale breed of ram was also used for the purpose. In addition, grading up programme of Shahabadi ewes with Corriedale ram had also been taken up. There are two wool collection centres in East Singhbbum district.

Dumka, Deoghar and Godda districts account for higher population of goats followed by the districts of South Chhotanagpur Division and Hazribagh Division. Selective breeding with beetal breed and grading up with Jamunapri goats had been taken up in the state. There are three goat farms, one in Chatra for Beetal bred and two in Ranchi and Sahebganj for Black Bengal breed. Pigs are mostly concentrated in the plateau region of Chhotanagpur. The tribal people have a special interest and aptitude for pig husbandry. During the 8th Plan (1992-97), scheme for upgrading of country pigs with boars of exotic breed, strengthening of pig breeding farm and publicity of bacon factory product was taken up.

The state has five pig breeding farms at Gatiriakarma, Hotwar, Saraikela, Jamshedpur and Kanke where large White Yorkshre breeds and *Desi* breeds of pigs are reared. Ranchi Veterinary College rears pigs and supplies piglets to the farmers besides training the beneficiaries.

Mainstay

Although Jharkhand is endowed with vast and rich natural resources, mainly minerals and forests, 80 per cent of its population residing in 32620 villages depend mainly on agriculture and allied activities for their livelihood. One of the main strategies for development of the Jharkhand state is to ensure agricultural and rural development on a sustainable basis. Capacity building is the focal point for any development endeavor.

In the agricultural sector there is scope for bringing additional area under cultivation through vertical and horizontal expansion, increasing the area under irrigation, raising production and productivity of food crops through optimum utilization of inputs like seeds, fertilizers, pesticides, agricultural tools and implements. Besides these, horticultural development has vast potential not only in terms of meeting the local requirements of fruits, vegetables

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Employment Opportunities for Tribal Disabled

Vinod Kumar Mishra

There is a need to generate self-employment opportunities for tribal disabled people. Instead of selling the raw products to traders at meagre rates they can prepare finished or semi finished products and sell them to the government/semi government/ cooperatives/trading agencies to fetch better prices.

INDIA HAS the second largest concentration of tribal population after that of the African continent. As per 1991 census the total Scheduled Tribe population of India is over 6.78 crore which is over 8% of total population of 84 crore. Out of this tribal population, 87% of it is concentrated in the central belt covering 8 states. These are Madhya Pradesh, Orissa, Bihar, Maharashtra, Gujarat, Rajasthan, Andhra Pradesh and West Bengal. About 10% population is in the north eastern states and the rest 3% is in other states. Madhya Pradesh is having the largest share i.e. 23% of tribal population. There are about 360 Scheduled Tribes (the sub-tribes are even more) and they speak 100 different dialects.

The tribals are living in compact areas which are generally hilly and undulating terrain. Their economy is mainly based on agriculture and forest. However, due to unauthorised alienation of tribal land and deprivation of tribals of forestry rights, their economy has been badly affected. As a result some of them had to leave their traditional habitat and resettle in urban areas and even in other states for their livelihood. Even after 50 years of independence they are suffering from exploitation and illiteracy. They are being exploited through liquor and money lending. Sometimes the exploitation is so severe that they are not able to bear it and there is unrest which adversely affect their progress which itself is very slow.

Initially tribals were self-sufficient. Their needs were limited and whatever they used to earn from their work, they used to spend for themselves. The families were joint families and the old, disabled people were accommodated easily. However the situation is changing now. Joint families are breaking and due to infiltration of no tribals and exposure of tribals to the glittering world has increased their needs.

The main occupation of various tribals are as under :

Food gathering from forests Agriculture on limited land (not so fertile).

Apart from above they collect the forest resources and sell to the traders. These resources generally are :

Various types of leaves, tamarind, gum, mohwa, honey, amla seeds, neem seeds, various types of seeds, kusum seed, arrowroot (which is used as powder), chiraunjee, tendu leaves (used for making bidi), lac, wax, bamboo seeds, shoots, and grass.

These items are collected by the tribals and sold to the traders in raw condition at a meagre price. In all the works done by the tribals, we find that the disabled people can play very little role. As a result they are generally unemployed and have to depend on other's charity.

Although government has reserved 7.5% of the its jobs for Scheduled Tribes but due to lack of awareness and education the job quota may not be filled scrupulously. So far only creamy layer of STs have taken benefit of job reservation and tribals living in deep forest and hilly areas are not benefitted. Due to lack of awareness and skill the private sector offers low priority jobs.

Due to lack of entrepreneurship and necessary training, the tribals could not take advantage of the schemes of self employment and soft loans given by the government. Hence, there is an urgent need to take major steps for :

Preparing them for employment

Provide employment

Help in self-employment.

The disabled tribals of the age group 5-18 years should be selected

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ROLE OF STANDARDISATION

Mitigation of Natural Disaster

D.P.S. Verma and Sudhanshu Bansal

A resource-starved country like India cannot afford to spend much on the earthquake relief and rehabilitation operations although the government is trying to provide relief in full swing and money, material and people pouring in from all over the country and the world. Yet, some of the long-term issues thrown up by the earthquake need immediate attention.

THE CONCEPT of standardisation has acquired importance in recent years. In the 21st century, the concept is likely to further improve the quality of life. Standards cover almost all aspects of economic activity of man, viz., engineering, industry, construction, agriculture, commerce, science, education, transport, food, forestry and information technology. Each of these fields deal with a large number of items, which may be further divided into subjects to be covered by a standard. The most important aspect of standardisation deals with the safety of human life in the event of a natural disaster. Howsoever low the frequency of natural disaster, like drought, cyclone or earthquake may be, the society has to be prepared for dealing with it and take care of the information system, drinking water, food shelter and protection against the extremities of weather. All this is possible if man sticks to the basic standards made for this purpose.

A little reflection will show that standardisation furnishes the base on which man created society. Even primitive man discovered early on, how he could manipulate nature to suit his own requirements. Long ago, he realised that his hunting capability would improve by introducing man-made implements and standards in his daily life. From this position, man began to develop his standard of living. He made improvements in the drainage system, agriculture, weights and measures, etc. With the dawn of the industrial revolution, there has been an increased stress on production and, with this, standardisation has become a necessity.

The importance of standardisation was understood better, and it gained increasing attention even more sharply, during the First World War. The War Industries Board, set up by the USA, demonstrated the need for judicious adoption of standards to meet the shortages of men and materials during the war. As a result, soon after the First World War, 23 national standards bodies were established.

The urgency of national and international standardisation was brought out more prominently during the Second World War, when the Allies suffered considerably due to lack of interchangeability even for nuts and bolts from the American supplies intended for operations in Europe. Consequently, more and more countries started setting up national standards bodies, including several developing countries.

In order to ensure coordination of efforts of national standards bodies, the International Federation of the National Standardisation Associations (ISA) had been in existence during the period, but under the strain of the world war, it could not be effective. Hence, as soon as the hostilities ended, the UN Coordinating Committee met in 1946 and recommended the setting up of the International Organisation for Standardisation (ISO), superseding the earlier ISA. India was one of the founder-members of the ISO and continues to be a member presently in both the International Electro-technical Commission (IEC) and the International Organisation for Standardisation (ISO).

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Standards institutions all over the world are facing several challenges because of the latest researches in the fields of agriculture, industry, transport and information technology. For example, in agriculture, standards have been developed in various areas including the quality of soil, seeds, fertilizers, irrigation system, pesticides, storage and warehousing which help in not only producing more and better quality of food but also preserving it and its quality and making it available at the required time and in convenient form for ultimate consumption. Standards have been formulated for equipment and implements used in agriculture, harvesting, storage, packing and transportation.

The increase in industries is polluting and depleting our water resources. It has become necessary to safeguard them for optimum utilization. Standards, therefore, have been formulated for the use of water not only for drinking but also for irrigation and industrial use. Standards have also been formulated to recycle water after purification for repeated use. To conserve water during irrigation, a large number of standards covering micro-irrigation systems, drip irrigation and sprinkler systems have been formulated. Through these systems, a measured dose of water with the necessary quantity of fertilizer is provided to the plants, keeping water losses to a minimum.

Standardisation of Housing

A large number of standards for different types of building materials, like cement, bricks and steel, have also been developed. The design of buildings and houses to conserve materials and to make maximum use of sunlight, as also to make the buildings energy-efficient, has been developed. Standards to recycle different building materials are also sought to be developed to have sustainable growth.

With the opening up of the Indian economy, a challenge has been thrown to the industry and trade to compete worldwide. In order to have a higher share in the global market, our industry needs to be competitive in terms of quality, pricing and timely delivery.

Not Sudden

The globalisation of the economy is not a sudden development. However, the impact of this phenomenon has been felt recently. The process had started more than 50 years back when 23 countries, including India, met on Ist January 1948, to establish the General Agreement on Tariffs and Trade (GATT). The objective of GATT was to bring order to the law of the jungle attitude of international trade. As the regulatory body for world trade, the World Trade Organisation (WTO) has its objective to ensure free, more transparent and a more predictable trading regime in the world. The WTO is based on a sound legal system and the governments of member countries ratify all its agreements. The agreement on Technical Barriers to Trade (TBT) provides that mandatory standards (adopted by governments to protect the health and safety of the people and environment) should not be so applied as to create unnecessary obstacles to international trade. The agreement visualises that national standards will not create unnecessary barriers if they are uniform and based on internationally agreed upon standards. Further, for non-voluntary standards, the Code of Good Practices for preparation, adoption and application of standards is an integral part of TBT agreement. It was, therefore, decided by the government to restructure the set-up of ISI and invest it with the statutory authority to respond to these needs. This led to the passing of the Bureau of Indian Standards Act, 1986. The Bereau of Indian Standards (BIS) came into being on April 1, 1987. The BIS consists of 130 members representing the Central and state governments, various industries, technical institutions, consumer organisations and Parliament. The Union Minister for Food and Civil Supplies is the President of the BIS. The BIS, as a member of the ISO and IEC, follows the procedure laid down at the international level for formulating national standards which is essentially based on consensus principles so that these are acceptable to all concerned. While any Indian standards are identical or equivalent to international standards, in other cases, international standards form the basis for developing Indian Standards. The BIS, thus, helps the industry and trade to play an important role in the international arena.

Standardisation & IT

It is pertinent to mention the role of information technology in various areas of economic activities. The rapid progress made by computers in recent years shows that in the new millennium the various tools of information technology, such as the television, telephone, e-commerce and other computer-based tools and instruments, are likely to have a dominant influence on agriculture, industry, transport and commerce.

It is necessary to mention here the problem caused by a massive earthquake that shocked Gujarat on 26th January, 2001. This challenge becomes more important because a natural disaster causes sudden destruction to buildings environment and causes damage to life and property to such an extent that the normal socio-economic mechanism of society is disturbed, making it difficult to restore normalcy. Disasters not only undermine the development effort and lead to wastage of scarce resources, but also retard development by destroying initiatives. The direct effect of disasters on the economy constitutes damage to infrastructure, crops and productive assets of the local population besides the huge financial burden of relief and rescue operations. Indirectly, disasters lead to decline in population, loss of income, unemployment, and indebtedness of the poor and increased cost of goods and services, etc.

On account of its geographical position, India has been frequently hit by natural disasters. There is hardly a year when one part or the other does not face the problem of drought, flood, cyclone, earthquake or landslides. This year, India has faced a serious problem of earthquake, which was not possible to predict. It is an accepted fact that the occurrence of natural disasters cannot be prevented altogether. However, their adverse societal and economic impact can be reduced substantially by undertaking various mitigation programmes. In Japan, rigorous standards for buildings that ensure earthquake resistance have proved to be very effective. The Bureau of Indian Standards has already prepared certain standard specifications and codes of practice to reduce the impact of natural disasters. The standardisation efforts on the mitigation of natural disasters under various sectional committees are given below :

Earthquake Engineering

The Himalayan region, Indo-Gangetic plain, Western India Kutch and Kathiawar regions are geologically unstable parts of the country and some devastating earthquakes of the world have already occurred there. There has been a long-felt need for rationalising the earthquake-resistant design and construction of structures taking into account the seismic data from studies of these earthquakes. Thus, standards have been formulated in the field of design and construction of earthquake-resistant structures and also in the field of measurement and tests connected therewith by the Earthquake Engineering Sectional Committee. The important standards developed by the BIS in this regard are briefly introduced below.

1. IS 1893 : 1984 'Criteria for Earthquake-Resistant Design of Structures'—This standard deals with earthquake resistant design of structures and is applicable to buildings, elevated structures, bridges, dams, etc. It also gives a map that divides the country into five seismic zones based on the seismic intensity on account of earthquakes in various parts of the country including that in Uttarkashi and Latur and technological advancement in the field. The sectional committee decided to revise the standard into five parts which deal with different types of structures :

Part 1 : General provisions and buildings; Part 2 : Liquid retaining tanks—elevated and ground supported; Part 3 : Bridges and retaining walls; Part 4 : Industrial structures, including stack-like structures; Part 5 : Dams and embankments.

Other important standards prepared by this committee are as follows :

2. IS 4326 : 1993 'Earthquake-Resistant Design and Construction of Buildings—code of Practice'—This standard provides guidelines in selection of materials, special features of design and construction for earthquake resistant buildings, including masonry construction, timber construction, prefabricated construction, etc.

3. IS 13827 : 1993 'Improving Earthquake Resistance of Earthern Building : Guidelines'—This standard provides guidelines in the design and construction aspects for improving earthquake resistance of earthern houses, without the use of lime and cement.

4. IS 13828 : 1993 'Improving Earthquake-Resistance of Low Strength Masonry Buildings : Guidelines'—This standard lays down the guidelines for special features of design and construction for improving earthquake-resistance of buildings of low-strength masonry.

5. IS 13920 : 1993 'Ductile Detailing of Reinforced Concrete Structures Subjected to Seismic Forces : Code of Practice'—This standard covers the design of reinforced concrete buildings.

6. IS 13925 : 1993 'Repair and Seismic Strengthening of Buildings : Guidelines'—This standard covers the selection of material and techniques to be used for repair and seismic strengthening of damaged buildings during earthquake.

The BIS has also brought out a handbook SP 22 : 1982 'Explanatory Handbook on Codes for Earthquakes Engineering'.

Although the standards are available in the field of natural disasters and the consequential

areas, but in India these are not often adopted. It is still not mandatory to follow the relevant construction and design specifications by law. So the economic pressure causes, particularly to the individuals, to evade and flout the norms. Wherever the standards are followed like in a governmental and institutional set up, the results are clearly different from those where they are not followed.

Although several standards have been developed by the Bureau of Indian Standards for mitigation of natural disasters like earthquake, they have not been properly followed and executed. The loss sustained by the people of Gujarat in the recent earthquake makes it imperative not only to formulate and implement the various codes evolved by the BIS but also to improve upon them. The buildings constructed in the earthquake-prone regions should be earthquake-resistant. A resource-starved country, like India, cannot afford to spend much on the earthquake relief and rehabilitation operations although the government is trying to provide relief in full swing, and money, material and people pouring in from all over the country and the world. Yet, some of the long-term issues thrown up by the earthquake need immediate attention. In Japan, rigorous standards for buildings that may be earthquake-resistant have proved to be very effective. A bright future for Indians in the 21st century can be built if necessary standards are formulated and rigorously implemented in right spirit by the state and non-governmental organisations. Necessary public awareness should be created through the media for observing the safety standards prescribed by the BIS. ❐

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flowers and medicinal and aromatic plants but also in terms of exploiting the opportunities for exports. Similar is the situation with the livestock enterprises with respect to increasing milk, meat and egg production. There is a vast scope in the state for establishing food processing units including those of fruit and vegetable preservation, milk and meat preservation and minor forest produce.

The highest priority in the Annual Plan 2001-2002 has been given to rural development. The emphasis given on rural development in the VIIth Plan is being continued in the IXth Plan as well with a view to giving due importance to the problem of rural unemployment and poverty. The next priority would be on irrigation. The emphasis on irrigation is necessary for increasing agricultural production. For creating more infrastructure, emphasis is being given on road links and irrigation. The health and energy sectors are also priority areas in the new state. ❐

(PIB Feature)

EMPLOYMENT OPPORTUNITIES....

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and given vocational education so that they can be ready for gainful employment. The parents of these children can not afford the cost of their education and hence the entire burden is to be borne either by government or N.G.Os. The course curriculum should be evolved in such a manner that their socio-cultural milieu is taken care of. Adequate number of educational institutions are to be developed and various support services such as scholarship, book banks are to be developed. The medium of instruction is to be suitably chosen and the teachers should be familiar with their background and language as far as possible. The interest in education should be developed in such a way that they should leave the habit of absentism. There is a need to develop clear educational policy to prepare disabled tribal people for gaining employment.

While there is a need to fill up the backlog of vacancies in government and PSUs jobs reserved for STs a special effort should be made so that the quota reserved for the handicapped is filled up. Due preference should be given to handicapped ST candidates while filling the vacancies for STs.

The private sectors should be given incentive to set up their units in the tribal areas and they should be encouraged to employ disabled tribal people. Suitable tax concessions should be given to them in proportion to the salaries given to the disabled tribal people.

There is a need to generate self-employment opportunities for tribal disabled people. Instead of selling the raw products to traders at meagre rates, they can prepare finished or semi finished products and sell them to the government/ semi government/cooperatives/ trading agencies to fetch better prices. ❐

BOOK REVIEW

Wastages of Irrational Drug Use

DRUG SUPPLY AND USE by Dr Anant Phadke; Sage Publications; May 1998; Pp. 184; Price Rs. 295.

India has achieved a fantastic growth in drug industry and has now become almost self sufficient in the production of whole range of drugs that we require. Majority of the drug formulations available in India are irrational, causing wastage of people's money. Their money is being wasted not only due to irrational drug formulations, but also due to irrational use of rational drugs; the most obvious example is the unnecessary use of antibiotics. The author has dealt with this aspect of drug supply and use in his book and how the situation can be remedied. Most of the books published in India have mainly focussed on the issue of self reliance of drug industry in India and this aspect has not been considered and reflected upon in any systematic manner in the earlier books on drug situation. He has also covered the issue of predominance of unscientific drug formulae in India and its disastrous effects.

In the first section of the book, the author has briefly discussed the track record of the drug industry internationally with regard to production of safe and effective drugs. The issue of predominance of irrational drug formulae in India has been described, whereby irrationality is extended to the production of irrational formulae in the name of ayurvedic medicines. Though the drug industry is the main culprit for the irrational, exploitative nature of drug production and sales, but the doctors, both qualified and unqualified have also been a party to this irrationality, owing to their apathy, ignorance and in some cases, their indulgence and outright corruption. Lastly, a short account of the attempts made by the movement for Rational Drug Policy have been presented so that the policy makers can be influenced on the various measures that would constitute a rational drug policy. It is hoped that this brief overview would provide a rational, pro-people analysis of the predominance of unscientific drug formulae in the country, and the policy measures needed to radically improve this situation.

The author has presented some features of study conducted on "supply and use of pharmaceuticals in Satara district as an example which has analysed the core of doctor's prescriptions in a direct way by comparison with standard prescriptions. For the first time, the drug needs of a district in India have been estimated and compared with the current expenditure on drugs. He concludes that the irrational use of rational and unnecessary drugs is responsible for unrequired drug needs of people instead of lack of drug expenditure.

The book has been written in a very simple language presenting literature, tables and figures in a systematic format which can be easily grasped by general readers. It is a very interesting and mind blowing book which presents the true picture of prevalent scientific details about irrational use of drug and their prevalent scenario in India, harmful effects and stresses, absolute necessity and importance of having a rational drug policy in India. He has given various indices/ measures on the basis of which it can be formulated which can act as a check on irrational use of drugs, prescriptions by doctors/drug manufacturers who are becoming more profit oriented and public welfare is way down in their priority. It would help professionals/non specialists who are interested in health/drug policy since the language is very simple and no technical terminology has been used to present the facts.

Abha Agarwal

No scope for Complacency

INDIA'S EXTERNAL SECTOR REFORMS by Vyuptakesh Sharan and Indra Nath Mukherji; Oxford University Press, New Delhi; first published in 2001; Pp.159; Price Rs. 295.

It is now history that after pursuing an inward-looking development strategy with the State assuming a prominent role for four decades, India decided to take a bold step of changing tracks in 1991. It embarked on a comprehensive reform of the economy to widen and deepen its integration with the world economy as a part of structural adjustment. The book deals with the different facets of the external sector reforms which were initiated almost a decade ago and their effect on the economy. The book contains ten chapters. Besides, there are a brief preface and an appendix containing a Note on Capital Account Convertibility. An exhaustive bibliography is also appended at the end.

The authors pointed out at the preface itself that reforms in the

external sector assumed significance since this sector was in a bad shape affecting very seriously the pace of the country's economic development. They therefore mainly confined their studies to the policy changes in the field of current account and capital account transactions, more especially foreign trade, foreign investment inflow, external debt and the country's overseas investment. In the introductory chapter, like a text book, the authors enunicated the concept and objectives of economic reforms and also highlighted the key economic reforms (including the external sector reforms) initiated in India.

Before dealing with the brasstack of the external sector reforms, the authors devoted a full chapter (chapter 2) to describe the pre-reform scenario of the country. There is a vivid account of the precarious situation of the Indian economy with widening fiscal imbalance during 1980s aggravated by low credit rating in the international capital market weakening the prospect for the external loans and other forms of inflow of resources on private capital account. The balance of payment position became so bad that the government was forced to approach the IMF for loans which however were granted, but tagged with certain conditions. The crises compelled the government to reform different sectors of the economy in mid-1991 and reforming foreign trade was the first step in the external sector. In chapter-3, the authors outline the broad policy measures and examine with available statistics how far these measures have been effective in trade performance. They have truly pointed out that despite taking certain bold steps like rationalizing the exchange rate that has culminated into full convertibility of current account earnings, liberalization of imports, incentives to exporters etc., there still remains many extraneous impediments for which targeted growth in foreign trade has remained elusive. Every student of Indian economics will agree with the authors that there is an urgent need of market and product diversification of Indian export goods.

In order to attract foreign direct investment (FDI), a liberal policy framework was designed in the country's structural and macroeconomic reforms. The authors rightly opine (chapter 4) that despite adopting a liberal policy, India lags far behind many other major FDI receiving countries of Asia. The authors have just touched upon the main reasons very briefly for such a deplorable situation without suggesting any policy measure. It is very unfortunate that only six or seven countries have so far shown interest in investment in India and the USA alone accounted for a quarter of the approved investment till 1998. Further, the foreign investors have shown more interest in financial collaborations and not in technical collaborations. Another feature of the liberal policy like removal of ceiling from foreign equity participation has manifested in a large number of wholly-owned subsidiaries of foreign companies or Indian companies being dominated by foreign investors. Another related chapter (chapter 5) is on NRI investment in India. As a part of the external sector reforms, the government has provided a number of fresh incentives and decided to create a more congenial environment on NRI's investment. The authors have adroitly indicated details of NRI investment in India and expressed that NRIs have a significant contribution in strengthening India's external balance.

Foreign Portfolio Investment (FPI) introduced in 1992 is another dimension of external sector reform aimed at stimulating inflow of foreign exchange. The authors have examined carefully to what extent this new move has helped increase the quantum of foreign exchange inflow in the country (Chapter 6). They are of the view that despite ups and downs, the policy of liberalization has been a stimulant for large inflow of FPI into the country. But when compared with other Asian countries, there is perhaps no scope of being complacent. India's external sector reform has also centered on her overseas investment. The authors have highlighted the rationale of the policy measures of the government, the broad features of the overseas investment, besides investment in WOS and the contribution of such investment, besides investment in WOS and the contribution of such investments to the country's balance of payment (Chapter 7). Quoting statistics they have come to the conclusion that there has been a favourable impact of liberalized policy on overseas investment and during the period 1992-June, 1998 there was three-fold increase in foreign exchange earnings.

The most important factor for external sector reform was to overcome the problem of the country's serious external indebtedness as it was impeding the process of economic development. The authors have given an account of the causes of resorting to external borrowings (Chapter 8) that refreshes our memory of the difficult days of 1991 and 1992. The measures taken to cure external indebtedness have been elaborately retold. As the debt burden after showing improvement during the initial years of reform, has again deteriorated, the authors have justifiably raised the question of the efficacy of reform measures.

K.R. Dasgupta

A Stupendus Job

INDIA'S BILLION PLUS PEOPLE—2001 CENSUS HIGHLIGHTS METHODOLGY AND MEDIA COVERAGE by Ashish Bose; B.R. Publishing Corporation, 4222/1, Ansari Road, Darya Ganj, New Delhi-110002, Rs. 400.

As our nation enters the 21st century poised to emerge as one of the major economic powers of the world with a huge untapped reservoir human resource and market, the decennial census of 2001 is a keenly watched administrative exercise. It is the most important window of information on the life of the people of India, which has the potential to be the one of the leaders in Information Technology, which is destined to change the course of human life.

Indian census 2001 has many peculiarities. It was the most comprehensive census operation in the world and the second largest census enumeration in the history. Census 2001 is more of a survey on how people of India live, than a mere head count of people.

India's Billion Plus People by Professor Ashish Bose presents the initial provisional result of the first census of 21st century. He presents the data and other information in a user friendly way so that it can be a delight both to the layman and scholar.

The peculiarities, new features, the house listing part of the whole census operation and the enumeration process are briefly described in the first section of the book. It is interesting to note the steps and preparations taken to the collection of this gigantic data. An accurate and meticulously prepared data, codified on the basis of a scientific approach is of immense value to the general public as well as to the administrators, policy makers and planners. In this section Prof. Bose describes in a very matter of fact way the approach of the enumerators and the new features of this census which set it apart from the previous census operations. This section is very useful for researchers, statisticians and agencies engaged in surveys.

A demographic profile of India is the hallmark of the second section. Grouped in ten categories according to their unique characteristics, population, literacy and fertility nature of 28 states and 7 union territories, data is very useful and informative. The author has done a yeomen's job by arranging the provisional results of a gigantic effort in alphabetical order and in table form.

Social scientists engaged in population studies do not make predictions. But they analyse the results and make assumptions on the basis of it. These assumptions are mainly based on fertility and mortality rates. The Third section of the book under review analyses the implications of the first census operation of the 21st century. This analyses is supported by valuable tables which provide the data in detail. For an ordinary person who is interested in demography this section supplies a lot of information as the author provides the projections made by experts fifty years ago.

Sociologists, demographers, administrators and policy makers world over are very much concerned with gender issues, especially in the so called third world countries. Uplift of female population is now a major issue. The focus of the fourth section is on the methodology adopted for the success of this census and in particular, the definition and concept of worker especially the female worker, the backbone of an agrarian and rural economy like ours. A brief overview of the questions on workers and non workers also is given in this section.

Section five is devoted to media's role in the 2001 census. Media, especially, print media has played an important role in spreading the message, importance and implications of the whole process. This section puts together news items, editorials and special articles published in 14 newspapers, magazines and journals. This deserves special mention in this age of media revolution.

India's Billion Plus People, brought out in less than a month's time after the publication of the provisional results of 2001 census is of immense value to planners, policy makers, administrators and students. General readers also get information in understanding the demographic situation and population problems of our country. Prof. Bose has indeed done a stupendous job by collecting and codifying the results of population explosion of India.

Madhu R. Sekhar

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