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ORISSA ECONOMICS ASSOCIATION
BHUBANESWAR

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Editor :
Dr. Baidyanath Misra,
Deputy Chairman,
State Planning Board,
Bhubaneswar.

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Orissa Economics Association

22nd Annual Conference

Report of the Secretary

Mr. President Dr. Patro, my esteemed teacher Dr. Mishra, our guest of honour, Mr. Dash, Chairman of the Reception Committee Mr. Sarangi, Local Secretary Mr. Manmohan Das, fellow delegates, distinguished invitees, ladies and gentlemen !

It is a proud privilege on my part as the Secretary of the Orissa Economics Association to extend a hearty welcome to you all to the 22nd Annual Conference of the Association.

We are fortunate enough to have in our midst Sri Prasanna Kumar Dash, the Speaker of the Legislative Assembly as our guest in the 22nd Economics Conference. We are grateful to you sir for your kind gesture towards our Association.

The Orissa Economics Association was formed in 1968 with a view to imparting training to teachers in Economics for improving standard of teaching and to organise seminars on current economic issues. Even though we have not been able to fulfil all our objectives due to various constraints, we are regularly organising the Annual Conference since the year of inception of the Association. The Association has got about 200 members out of which around 120 are life members. The Association publishes a journal which contains the papers discussed in the Annual Conference. Finance is the serious constraint for the Association. We receive a maximum of Rs. 4,000/- for the publication of the journal from the Director of Higher Education. The grant-in-aid of Rs. 4000/- from the Youth Welfare Board has been discontinued since last year. We would not have been able to print the journal and meet the expenses of the conference without the donation of Rs. 5000/- from the organisers of the 21st Economics Conference held under the auspices of S. C. S. College, Puri, and a commitment for a grant of Rs. 20,000/- from the Secretary-cum-Commissioner of Agriculture and Co-operation Mr. K. B. Verma, I. A. S.. My thanks are due to them.

This year we have selected three topics for discussion. The 1st session will be the Bhubaneswar Mangaraj Memorial Lecture series, in honour of an illustrious teacher of Banki. We have been organising this lecture series for the last two years. We are thankful to Mr. Ashok Sing, the Editor Eco-Orissa for donating Rs. 5000/- for organising this lecture series. Topic for this lecture is "Education and Economic Development." The speaker is Dr. Debendra Chandra Mishra, former Vice-Chancellor, Sambalpur University. Dr. Sadasiv Mishra, former Vice-Chancellor, Utkal University will preside over this session.

Snd session, named as Sreekshetra Session will be devoted for a discussion on Prospects of Agricultural Develoment in Orissa". This session will be by Dr. Baidyanath Misra, Deputy Chairman, State Planning Board.

e third session on 26th we will discuss a recent problem "Debt Crisis in ountries". Dr. K. M. Pattnaik, the former Vice-Chancellor of Utkal present the lead paper and Dr. Bidyadhar Mishra will preside over the

extremely grateful to you sirs, the Chairman of the Reception Committee, ary, the staff and students of M. P. C. College for their ungrudging help in conference. I must apologise before you sir, the Principal of this College for responsibilities of the arrangement of the conference with you without cient time. I deeply regret for the inconvenience caused to you, your staff r my lapses.

extremely thankful to my old teachers, Dr. Sadasiv Mishra, Dr. D. C. Mishra, Mishra, Dr. Baidyanath Misra, Dr. K. M. Pattnaik and Dr. Ghanashyam Das, co-operation and regular participation in the conference.

a great deal to all the members of the Executive Body, Asst. Secretary ty and the President Dr. Patro, for their help in all the activities of the y special thanks are due to the former Secretary Mr. Bidyadhar Naik nd the scene and is providing continuous guidance in all the activities of the

rateful to the delegates, paper writers, invitees and to you all ladies and iving me a patient hearing.

king you all.

R. K. Mishra

Secretary,
Orissa Economics Association

Presidential Address

EMPLOYMENT POLICY IN INDIA : PERFORMANCE AND PROSPECTS

N. P. Patro
Professor of Economics
Gangadhar Meher College, Sambalpur.

I should first of all express my grateful thanks to fellow members of the Orissa Economics Association for their having elected me the President of the Association for the current year. I am, of course, fully aware of my limitations to deserve such high honour and, as such, I look upon this as a kind gesture of your affection for me.

I take this rare opportunity to share with you some of my thoughts on the employment policy in India intending to highlight thereby its performance and the prospects.

Stimulation to employment has remained an abiding concern of economic planning ever since its inception in 1951. But significantly enough employment generation did not form an integral part of planning strategy in this country. Removal of unemployment has not been accepted at any time as a time-bound programme. The Fifth Five Year Plan, inspite of its pronounced employment bias, maintained that "sufficient care should be taken to ensure that employment provision does not become an end in itself". (1) The recast Sixth Five Year Plan for the five years 1980-1985 reflected a stronger determination to tackle the unemployment problem but attached greater importance to faster growth. The Seventh Plan came to admit that planning strategy should aim at expansion of employment which should be necessarily productive employment.

In earlier years the Five Year Plans set for themselves quantified employment targets. But these targets do not seem to have been worked out by deliberately adopting techniques of investment that are labour intensive. The investment projects were drawn on cost benefit criteria and the employment that is likely to be created is then estimated (2).

It is, therefore, correct to conclude that employment expansion was not sought as a direct goal of planned activities. This lukewarm approach to employment in India was noted by A. N. Agarwala in his following observation : 'No. where.....is there any mention of full employment; there are, however, such expressions as maximum employment, more employment, fuller employment, etc." (3)

In the fifties and sixties planners in India regarded growth as the most effective way to tackle the problems of unemployment and poverty. They argued that the rise in income and wealth that growth signifies would automatically percolate to all ranks through the spread effect. Growth would help build up the necessary capital infrastructure and raise the productive capacity of the economy. Though the poor have to make sacrifices in the short run, eventually they gain in terms of higher income, larger assets and more employment.

In a slightly defferent way it was argued that faster growth would mean a rapid rise in the Gross National Product. Large parts of this rise could be mobilised through appropriate fiscal measures to finance social welfare schemes having greater employment component. The balance of resources with private investors would be ploughed back into production to promote employment and prosperity of the masses. Equity and employment, therefore, were considered as the logical outcome of growth.

This growth-oriented strategy which was set at work with the launching of the Second Five Year Plan envisaged growth in terms of promotion of heavy industries. This was found necessary to create a broad capital base. But heavy industries being capital-intensive have marginal employment potential. As a recompense, employment generation was envisaged in terms of promotion of cottage and small scale industries.

The strategy under study alludes to the classical theory of employment. In an underdeveloped country like India unemployment persists because of deficiency of capital relative to the size of work-seeking population. But in an advanced country with "excess capacity" the phenomenon of unemployment has been attributed by Keynes to deficiency in aggregate demand. Propensity to save being relatively high in advanced countries, it is said that the desired level of capital formation takes place automatically. But in a labour surplus economy creation of investible surplus becomes a necessary precondition of employment promotion.(4)

Though capital asset creation is the avowed objective of growth oriented strategy in India, the fulfilment of the same was sought in terms of massive fund investment earmarked for capital goods industries. In practice, therefore, it has become investment-oriented planning. This is a different name of the Keynesian model.

Let us assess the merits of this strategy on the basis of its own assumption. .Its basic premise is that the rate of over-all growth is faster. The main assumptions are that the removal of poverty and employment expansion are the necessary bye-products of growth.

The rates of growth registered under the plans as reckoned in terms of rise in national income are impressive. National income during 25 years of planned development beginning from 1951 recorded on an average an annual increase of 3.5%. The same during

the first 50 years of the present century was only 1.5% per annum (5). Though the actual growth rates fell short of the targeted rates, these roughly confirmed the expectations of the planners.

But with ever-increasing back-logs of unemployment which were carried over from one plan to the other succeeding plan, the performance of our plans on the employment front belied our expectations.

The significance of providing more employment facilities is seen from the following view points: (i) work to the workless, (ii) higher living standards, (iii) equitable distribution of income, and (iv) eradication of poverty.

After nearly 40 years of planning the employment position has become worse; more people have slid under the poverty line and economic inequalities have become wider. Income generated remains in few hands and growth remains confined to some conclaves; very little of the fruits of planning have trickled down through the tight palms of the initial beneficiaries. The planning process which was hitched to the growth objective generated dual trends in the economy—expansion of a small urban based modern large scale sector and tardy growth or near stagnation of the vast rural sector.

During the 15 years from 1961 to 1976 investment in modern factory sector grew by 139% and output by an impressive 161% but employment only by 71%. The net result is that employment per unit of gross output actually decreased by 34% and the same per unit of capital by 28% (7).

According to an estimate the organised sector absorbs only 11% of the current annual increase in the labour force, the ramaining 89% has to be accomodated in agriculture and small unit activity. Inspite of rapid industrialisation which has been maintained all along the period of planned development, the share of agriculture in work force remains very high. While the successive census report from 1921 have shown agriculture's share in the labour force at 73% of the total, the 1971 census put it at 73.8%.

Considering the rapid rate at which an already large population kept rising against the back drop of near stationary rural scene, the problem of unemployment assumes serious proportions. As per the census of 1951, in the preceeding decennium population increased at 1.25% per annum whereas the same in the next ten years as revealed by 1961 census shot up to 2.5% per annum. Even if we assume that the expected decline in the birth rate could be secured and maintained, the total addition to the labour force over the period 1978-1986 came to nearly 65 million. This is more than three and a half times the number of people who are currently engaged in the organised sector (6).

The grim picture that emerged on the employment front is to be attributed to the development strategy adopted in India at least till the end of the Fourth Five Year Plan.

The planners realised the lapse committed in the past and observed in the Document on Approach to the Fifth Plan that "growthmanship which results in undivided attention to the maximisation of GNP can be dangerous. Elimination of abject poverty will not be attained as a corollary to a certain acceleration of the rate of growth of economy alone." This constitutes a direct admission of the failure of the strategy. The mechanism of 'trickle-downism' which is integral to the thesis did not function automatically. The rise in GNP did not lead to alleviation of poverty and reduction in unemployment. Most part of the GNP which has christalised into durable luxury products cannot now be diverted towards creation of the desired infrastructure for increasing employment and productive capacity. The limitations of growth as reflected in GNP, therefore, become obvious.

The failure of the investment oriented strategy to tackle the unemployment problems in India betrays a lack of understanding of the nature of this problem and its magnitude. This needs some elucidation.

In the village dominated and family oriented economy of India urban unemployment forms a smaller part of the total unemployment. The main part is underemployment and disguised unemployment which prevail in the rural sector.

The Planning Commission in 1977 computed the volume of unemployment by the use of different concepts. It is reasonable to measure the size of unemployment in India in "person day" terms. Working on the basis of National Sample Survey (27th Round) the Commission estimated that in March 1978 unemployment was at 20.6 million person years—16.5 million in the rural areas and 4.1 million in the urban areas (8). This is illustrative of the relative unemployment positions in urban and rural areas of India.

The labour force in India is increasing at the rate of 2% per annum. If the backlog of the unemployed with the new additions to the labour force are to be provided gainful employment by 1997 the labour absorption should increase to 3% per annum.

When large scale industries record a growth rate of 5% per annum the employment provision would grow only at 2.5%, considering the prevailing industrial output elasticity of employment in this country. Since the urban large sector shares only 9% of the total labour force, the net increase in employment facilities in terms of the total labour force would come to 0. 225%. In the Seventh Plan even if the targeted growth rate of the industrial sector of 7% per annum is achieved, the consequent labour absorption by this sector annually works out to 0.3% of the labour force.

Urban unemployment is not to be considered in isolation. The 'unemployed' in urban areas are linked up with the 'disguised unemployed in rural areas.

As Edgar Edwards has pointed out, open unemployment in the modern sector of the UDCs is but the tip of an iceberg resting on a stratum of unemployed outside the sector. To put it in his own words, "Efforts to clear the visible portion of the iceberg may

simply motivate other layers to emerge ; for example, efforts to provide jobs for the unemployed in urban areas may simply entice others from the country-side to take their place" (9). So high rates of growth in the industrial sector are unlikely to provide even marginal relief to the chronically unemployed in urban areas.

Any meaningful employment policy, therefore, must tackle the rural unemployment problem on a priority basis.

In a report published by the ILO it is pointed out that prospects of employment in the rural sector of Asian countries lie in (a) increasing farm productivity and (b) developing non-agricultural employment in these areas (10).

Agriculture holds out little prospect for employment expansion in terms of extension of cultivation to new areas. There is not enough cultivable land to provide productive employment to the large labour force. The following are the main reasons for the persistence of unemployment in rural areas : (i) the Green Revolution has not made any headway in unirrigated areas which are relatively large, (ii) no major breakthrough has been achieved in dry land farming, (iii) the landless labourers who form a big segment of rural population do not find work for part of a year, and (iv) marginal and small farmers who constitute the majority of land owners do not have sufficient land to provide them full time work throughout the year.

When land ceiling laws are successfully enforced the ceiling-surplus lands that would be available for redistribution will not exceed 15 million hectares. This is about 10% of the total cultivated area (11). So the impact of such a measure will have limited effect on the problem of unemployment.

There is, therefore, a strong case tor promotion of rural-based industries. This will provide to the landless laboures and their kindred type the necessary wherewithal on a more permanent basis and will help mobilise the rural labour force in the construction of rural capital works. Any other step that gives them temporary work like the 'crash employment programme' is a palliative and not a cure. 'Revolving employment' in the initial phases of capital construction will give rise to 'sedimental employment' later on when production commences in these industries.

The earlier stated ILO Report observed that the developing countries should so frame their economic and fiscal policies that these would encourage location of new industrial units in rural areas. This will help relieve the metropolitan industrial centres of urban congestion and help the growth of dispersed market towns. The growth of such towns in rural areas will open up employment opportunities.

For the balance of the rural force that would remain after setting up of rural based industrial complexes and capital works, employment for its full utilisation should come from agriculture. There is amplescope for substantial increase in agricultural yield in

our country. According to a World Bank Study both in terms of productivity per hectare and income per worker India is far behind many Asian countries. When improvement in agriculture is secured to utilise the scope available by the wide use of non-machinery inputs such as better seeds, fertilisers, pesticides, etc. and adoption of dry farm techniques more employment will be created.

The ILO Report noted that promotion of employment in urban areas could be possible through the creation of efficient, relatively small sector units which can suitably be linked up with more capital-intensive industries. It would, therefore, appear that the increase in production should be secured through the use of different techniques. Labour intensive techniques by stages could yield place to capital intensive techniques over optimal periods.

The new planning strategy should consist of (a) employment intensive sectoral planning, (b) regulation of technological change to protect and enhance employment, (c) expansion of infrastructure and social service, and (d) production of wage goods by the use of labour intensive methods.

Not to slacken growth rates in export goods and defence goods industries, capital intensive techniques may be maintained here. But so far as domestic market is concerned the bias should be in favour of labour intensive techniques.

The main constraints of investment-oriented planning is finance. Where there is a gap between requirements and available resources this is sought to be filled by deficit financing internally and adverse balance of payments externally. The disadvantages of both are well known.

In employment-oriented planning the prerequisites are availability of specific skills, a broader capital base and a resilient consumer goods sector. The Planning Commission of late laid emphasis on this.

The approach to rural employment has to be different. The construction of rura works and creation of industries in these areas should be so designed as to provide employment round the year. It is not enough to have some improvement measures to prop up the poor through make-believe programmes of employment.

To ensure better employment opportunities, no doubt, the stock of capital should be increased. But if this is achieved in the aggregative sense of a national stock the avowed purpose of reducing unemployment burden may not be served. We should take into account region and sector-wise distribution of investment and capital assets.

Amlan Dutta said that development and unemployment may coexist as in case of Britain and France. As such a strategy of employment creation cannot neglet space. A theory of employment should merge with a theory of regional development. (13).

All this would imply that there should be planning at the grass root level. Every block and every small scale unit or factory must draw up its production plan in a manner which will open up soope for full utilisation of the available labour force in the locality. The planning strategy must be changed. Instead of imposing plans and projects from the top, these should be done at the grass-root level so that the physical, mental and emotional powers of the labour force in a locality can be properly harnessed.

The major weakness of the planning exercises in the past were that they ignored all meaningful manpower estimates and assumed that real output alone mattered. In his preface to Seventh Plan the Prime Minister, Rajiv Gandhi has said that, in the final analysis, development is not just about factories, dams and roads but basically about people, their material, cultural and spiritual fulfilment to all of which we must pay attention in the future.

The known and recorded statistics show that unemployment has reached 30 million and there is a large backlog of unrecorded unemployment and underemployment, all of which present unused human resources. It is hoped from the recent statements of our Prime Minister expressing his faith in micro-level planning and his emphasis on eradication of unemployment and poverty on a priority basis that the Eighth Plan will concern itself in all seriousness with such knotty problems.

In fine, it can be said that establishment of rural industries which are area-specific, promotion of scientific agriculture and introduction of labour intensive techniques in selective fields will help us find a lasting solution to the complex unemployment problem in the country. All this will at the same time create employment, generate income for the poor and add to the volume of production. In the labour surplus economy of India employment creation of the right type will take place so that volumes of common consumption goods produced as a result will succeed in coping with rise in demand generated by new incomes.

The desired redistribution of income will not come in India unless redistribution is built into the production system itself—which will create income and employment among the poor, employ them to produce mainly those goods which constitute the major part of their consumption (14).

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Problems & Prospects of Agricultural Development in Orissa

Education and Economic Development : India

Dr. Devendra Chandra Misra

I

Education has many aspects such as economic, social and cultural. However it is the role of education as an important requirement of economic development that is now receiving serious attention especially in developing countries. Development theories regard accumulation of physical capital as the key requirement of growth. This is a hangover from English classical economics which made a sharp distinction between capital and labour. But under modern industrial conditions, with the progress of technology and with increasing importance of skill in the labour force, the traditional distinction between labour as an original factor of production and capital as a producer factor of production has become very unrealistic. The limitation of material capital as an explanation of economic growth has drawn the attention of economists to the concept of human capital as a complementary explanation.

A generalised concept of capital accumulation includes such diverse elements as (I) adding to physical capital, (II) increasing the health, discipline, skill and education of human population, (III) moving labour to more productive occupation and localities, and (IV) applying existing knowledge or discovering new knowledge to increase the efficiency of the productive process. The concept of economic development as a general process of capital accumulation with combination of capital of various types raises the problem of relationship between them. The complementary relationship between human and non-human capital become more obvious in developing economies where introduction of modern technology in various sectors of the economy requires not any additional investment embodied in improved capital goods and equipment but also additional investment in education and training (embodied in human beings) to increase knowledge and skill for efficient participation in the production process.

Expenditure in education forms a major component of human capital or investment in man. But contribution of expenditure on education to economic development has defied quantitative measurement because of certain peculiar features of such expenditure.

(I) Educational expenditure is permissive. It creates opportunities for growth of output. It is a necessary but not sufficient condition for growth of output.

(II) Educational expenditure is an investment in the sense that it increases human competence and skill, and thereby increases productivity and income. But it is partly a consumption expenditure in the sense that it yields psychic returns or utility over time. It is difficult to separate the investment and consumption aspects of educational expenditure, as it depends on the use to which the output of educational expenditure is put.

(III) The direct output of educational expenditure is not easily measureable.

(IV) There is a long gestation period in education. There may be an interval of 15 to 20 years between the initial investment and the appearance of the output.

(V) There is no determinate functional relationship between inputs and outputs partly because success depends on complementary measures.

Inspite of the serious difficulties to assess the contribution of education to economic development, three approaches have been developed to assess the contribution.

They are (I) the simple correlation approach, (II) the residual approach, and (III) the rate of return approach.

The simple correlation approach has serious limitations. It can not give an indication as to what growth rate in education is related to how much increase in G. N. P. Therefore it can not be used for planning and policy purposes in developing countries.

The residual approach, attributes that part of the increase in a country's total output which can not be explained by measurable factors such as labour and capital to growth in education and knowledge. This approach may be relevant to the advanced economies of the West but it is hardly applicable to developing countries. Moreover the heterogeneity of the elements that go to make up this residual makes it difficult to prescribe any policy for education alone.

The rate of return approach is used not only to determine the allocation of resources between investment in education and investment in other sectors of the economy, it is also used as a guide to allocation of educational expenditure between different levels of education and between different channels of higher education. Separate rates of returns can also be calculated for Arts and Science graduates as well as for doctors, engineers etc.. But though rate of returns approach is better than the other two approaches and has wide range of applications, it is not free from difficulties. Groups with differing amounts of education tend also to differ systematically in terms of other attributes which are likely to influence relative earnings and may not truely reflect the difference in

marginal productivity. It has been found that education, earning, endowed ability, individual motivation and social clan are inter-related and it is not possible to isolate the "pure effects" of education on earnings. Besides this, the rates of returns based on relative earning of groups of individuals will never reflect the external or indirect benefits generated by education which may be large in a developing economy. These limitations do not make the rate of returns approach a safe guide for allocation of educational expenditure between different levels and types of education as well as allocation of resources between education and other investing sectors of the economy.

II

The models developed in the context of advanced Western Countries have very limited applicability in the case of developing countries. In these countries, to make an assessment of contribution of education to economic development, what is needed is a disaggregated approach. Instead of lumping together all education into one category, it is relevant to specify which type of education combined with which other measures of creating skills and complemented by what other policies are conducive to economic development. In this context, it becomes necessary to study what structural changes have been taking place in the economy and what has been the response of the educational structure to these changes. Education not only precedes development to provide thresh-hold conditions for economic development but also anticipates the future patterns of development and to effect changes in the structure to adopt it to suit the needs of future development. As education has a long gestation period, educational investment made to-day will determine the supply of the required man-power after 15 to 20 years. Therefore, a long term strategy of planned development has to be framed with man-power and educational planning as its components.

In this connection, it is necessary to consider the educational needs and demand of education. The needs are generated primarily by the economy but it may also be generated by other sources including the state for recruiting administrative personnel and for the political motive for pushing educational development. The demand for education comes from individuals who collectively determine the total demand. This determines the supply of educated personnel. The correlation between demand for education by the people and needs as determined by the economy and the government may not be always harmonious. Disequillibrium may arise from either side. Needs may precede demand leading to a shortage of educated man-power. But in many cases demand exceeds needs leading to an excess of supply over demand. But even if total needs match total demand (supply) for education, there may be imbalance between the two in different sectors of the economy and different regions of the country.

In India both needs and demands for education has expanded vastly since planned economic development began in the country. Two fundamental factors, the

industrialisation of the country which started during the second plan and the application of new technology in agriculture have brought about structural changes in the economy. To study the impact of changes, comparison has been made between two periods, the pre-green revolution period covering years 1950-51 to 1964-65 and the post-green revolution period covering years 1964-65 to 1984-85.

TABLE– I

Compound Growth Rate of G. N. P. and Different Sectors of the Economy in Pre - and - Post Green Revolution period per Annum

Period.	Compound Growth rate of G. N. P. per annum.	Primary Sector.	Secondary Sector.	Tertiary Sector.
1950 - 51 to 1964 - 65	3.85	2.5	6.67	4.87
1964 - 65 to 1984 - 85	3.87	2.65	3.97	5.28

In the first period, the higher growth rate of the secondary sector was caused by higher growth rate of industrial out-put. It was 5.7 p.c. in the 1st plan, 7.2 p.c. in the second plan and 9.0 p. c. in the third plan.

In the second period the higher rate of the tertiary sector was caused by the growth of transport, communication, public administration, defence and banking.

Historically, in the course of the development process, the shares of secondary and tertiary sector in the national income rises and that of the primary sector declines. This has also happened in India.

Year.	Share of the primary sector in National Income.	Share of Secondary Sector.	Share of Tertiary Sector.
1950 - 57	54.4	17.14	24.81
1984 - 85	37.91	22.17	39.91

But the proportion of labour force engaged in the primary sector has not fallen to the same extent and the share of the labour force in the secondary sector has risen marginally and tertiary sector has not increased at all as evident from the following table.

Year.	Percentage share of Primary Sector in the labour force.	Share of p. c. in Secondary Sector.	P. C. Share of Tertiary Sector.
1950 - 51	72 p. c.	11	17
1981	70 p. c.	13	17

Though there is slight fall in the percentage of people engaged in agriculture, it is still the predominant occupation. Percentage of people engaged in the industrial sector has incresed by only two per cent due to smallness of the modern sector and slackening of its rate of growth. The percentage of people engaged in the tertiary sector has remained the same as the spurt in its expansion has reached the limit. Let us now examine the trends in the demand for the different levels and types of education as evident by their respective rates of growth and find out whether there has been balance between needs and demand.

The growth rate of student population of all levels increased from 2.8 crores in 1950-51 to 11.4 crores in 1982-83 giving a growth rate of 4.5 per cent per annum. The growth rates of different levels of education for the period are given below :

Levels of education.	Period 1950-51 to 82-83.	Growth rate per annum.	Enrolment Ratio (1982-83)
Primary (6 to 11)		6.2	93.4
Middle level (11 to 14)		6.4	48.9
Higher Secondary (14 to 16)		7.8	22.00
Higher education (16 to 23)		9.7	4.8

The figures show that the growth rates are higher for higher stages of education, the growth rate for primary being the lowest. The enrolment ratio in 1982-83 for different levels shows the percentage of persons in different age groups covered by schooling. In the case of primary education and higher education the rate of growth per annum is slowing down. In case of primary education the rate of growth was 6.2 p.c. for 1951-61, 5.6 p. c. for the period 1961-71 and 2.5 p. c. for the period 1971-82. The rate of

expansion has slowed down on account of reaching the hard core of school non-attending groups in all the States : Scheduled Castes, Scheduled Tribes and girls. Further expansion of schooling would depend on socio-economic development of the economically weaker sections of the community.

In higher education, slowing down of rate of expansion is caused by slow expansion of the secondary and tertiary sectors of the economy which mainly require university graduates. There has been also changes in the rate of growth of different branches of higher education in response to changing needs of the economy. While there has been some decline in the enrolment in Arts subjects during the last decade, the enrolment in commerce faculty has increased. While enrolment for 'general education' has increased at the rate of 4.5% per annum, the enrolment for professional courses has been increasing at the rate of 2.5 per cent per annum. Of this increase, the share of medicine is 39.1 per cent and of engineering courses is 36.6 per cent. The growth in enrolment for agriculture and veterinary sciences has been 5.4 p. c. and 4.6 p. c. respectively. The enrolement in Enginnering courses has been remarkable ; the enrolment has increased by 2.6 times during the period 1960-83.

The structural changes in education has been marginal as the changes in the occupation structure has been very slow. This also reflects the distoration in the growth process, where the production sectors, primary and secondary register a slower rate of growth than the tertiary sector. For acclerating economic development, there is an imperative need to have a much faster growth of these two sectors. In view of the changes in the plan strategy envisaged in the 7th and subsequent plans to eradicate poverty and unemployment with a major thrust on agricultural and rural development, it is necessary to recognise the role of education of proper type and content to provide the requisite knowledge and skill to absorb the new technology in agriculture and rural agro-industries. This calls for greater efforts to raise the enrolment ratioes at primary and lower secondary stage, specially in/among the backward groups and regions. There appears to be a close link between adult literacy rates and universalisation of primary education. UNESCO studies have revealed that adult literacy level of 70 per cent is critical thresh hold for universalisation of elementary education. But the literacy rate in the country is only 36 per cent and it varies widely from State to State. The states with very low literacy rates are Bihar (26), J. & K. (26), Madhya Pradesh (27), Rajasthan (24) and Utter Pradesh (27) Adult education programmes to cover the age group of 15-35 have not been very much successful. Out of the target number of 11 crores of persons in this category, only 2.3 crores have been covered by the end of 6th Plan, there remain 8.7 crores to be covered.

Another reason for the imbalance between educational needs and demand is that the needs of large sections of people has not been attended to, while the demand for education has come only from the upper income groups. The main benefit of the education system

has flowed to the rich and well-to-do classes who form the top 30% of the income group, but occupy nearly 70% of the places at the secondary stage and 80% of seats at the university level.

As the education system is dominated by the upper classes, who seek white collared jobs for their children, the courses designed in schools and collges are meant to meet their preferences and has no reference to the needs of the economic development and the employment situation.

The sectoral allocation of educational expenditure also reveals the lop-sided demand created by the upper classes.

Year.	Percentage-wise allocation of Education—Expenditure to		
	Primary Education	Secondary Education.	Higher Education.
1951 :	43	29.7	27
1976-77 :	27	31.7	41

The strategy of economic development followed so far has also led to skewed distribution of educational facilities between different states, regions and classes. The All India enrolment ratio for the age group 6 to 11 years is 93 per cent. The States which have an enrolment ratio below the all India ratio are Assam (62 p. c.), Bihar (82 p. c.), Hariyana (83 p. c), J. K. (84 p. c.), Karnataka (86 p. c.), M. P. (80 p. c.), Rajasthan (74 p. c.), U. P. (80 p. c.) and Orissa (89 p. c.). As in the case of primary education, so also in the case of Lower Secondary education, enrolment ratioes vary widely. The enrolment ratioes at all these stages and in all the States are lower for girls, scheduled castes and scheduled tribes. For balanced regional development, development of rural areas and for wider participation of weaker sections of the community in the development process, it is necessary to remove this distributional imbalance in the spread of education to different States, regions and groups.

Thus, there is not only imbalance between overall needs and demands for education, but also between the needs and demand for education of different sectors and regions. This lack of harmony is reflected in unemployment, under employment and sub-employment of educated man-power. These developments show that education is out of phase with economic trends and needs of larger sections of the society. Therefore, it is producing more and more ill-adapted people in spite of increasing costs.

In India unemployment among the educated persons reveals the follwing trend:

Year.	Category	Percentage of unemployment.	
		Male.	Female.
1956-57	Matriculate	—	—
N. S. S. data.	**Graduate and above.**		
	General...	4	6
	Technical...	4	6
1972-73	**Matriculate**	6	6
N. S. S. data	**Graduates :**		
	General...	7	10
	Technical...	less than 5 per cent.	
1977-78	**Matriculate (urban)**	7	9
N. S. S. data	**Graduates**		
	General	9	—
	Technical	less than 6 (six) p. c.	

The above data reveal that their was an increase in the percentage of unemployment of all categories of educated persons. It is also found that the unemployment situation has worsened over time for educated persons in rural area.

The incidence of unemployment has not been the same for different levels of education. It has been changing over the years. As for example, in 1961, matriculates formed 75 per cent of total educated unemployed. Its share fell to 55 per cent by 1981. The share of graduates increased from 9.5 % to 18.7% during the period 1961 to 1981.

Unemployment among educated increases .the cost of education without corresponding benefits to the society. In some cases it may become counter-productive by breeding revolutionary tendencies and by alienating them from traditional work culture.

The percentage of educated persons in the labour force is an index of economic development. In India large proportion of the labour force in the unorganised sector is illiterate or marginally literate. Educated labour is concentrated in a few selected occupation group. In 1978, there were 1.5 crore of employees working in the public sector. They formed 60% of the organised sector employment but only 5.7% of the total labour force. In the public sector, occupations needing general education constituted 66⅔% and

specific education 33 $\frac{1}{3}$% of the labour force. In the Private Sector, occupation needing general education or skill formed 20% and those needing specific education/skill constituted 80% of the labour force. In both public and private sectors 58% of workers, in occupation requiring technical knowledge and skill did not possess any formal education or training. This reveals a gap between the requirement and availability of skilled man-power.

Thus, there is not only wastage and misdirection in generating educated manpower, but lack of adequate educational development of employed man-power to increase their efficiency and competence. Adequacy of education and training of the already employed workers is an urgent task, which must be undertaken to accelerate the process of development.

In India, there has been rapid expansion of both the demand for education and needs for education. Compared to the great tasks which yet remains to be accomplished, the resources devoted to education is quite inadequate. India spends a little more than 3 per cent of the G. N. P. which is much less than what is spent by some Asian and African countries. Therefore, the National Policy of Education has very rightly advocated a stepping up the expenditure on education to 6% of the G. N. P.. But mere stepping up government spending on education will not remove the imbalances noticed in the system. It involves proper allocatian of resources not only between different levels of education, but also between formal and non-formal education, between inservice and pre-service training and between efforts to create new skills and those to readapt the workers to changes in technology and occupation structure of the economy. The present public funding system and policies which tend to perpetuate the skewed distributional spread of education has also to be changed.

As has been pointed out in the government document, "The challenge of education", while the budgetary allocations for plan expenditure have gone up substantially over the years, these have not kept pace with the growth of enrolment or rise in prices. As a result, the total expenditure per student per year has declined in real terms. More than 90% and in some States more than 98% is spent on teacher salaries and administration. Therefore, practically nothing is left for buildings, equipments and amenities.

Though education has been in the concurrent list for more than a decade and policies and priorities are generally determined by the Central Government and Planning Commission, the responsibility for providing funds continues to be borne by the States. The percentage of the total expenditure borne by the States over the various five year plans has varied from 74% in the 1st Plan to 71% in the 6th Plan and 63% in the 7th Plan period.

The plan of each State is determined by its ability to raise its own resources and the Central resources allotted to it by the Planning Commission. As poorer States are not able to raise adequate resources on account of low State income level, education gets a low

priority in allocation of resources while competing with other sectors. As education is not viewed as a complementary factor in the process of modernisation of other sectors, it gets a meagre allotment from the plan allocation. As a result poorer States are unable to maintain the educational standard and to improve its quality, content or coverage. The disparity in educational facilities between poorer and not so poor State continues to become wider over time. The following table gives an idea about the disparity in percapita budgeted expenditure among the States and in the percentage of budgeted expenditure on education to the total budget on revenue account :

Budgeted Expenditure (Revenue Account) on Education and Other Departments, 1985-86 of various States :

State.	Per Capita Budgeted expenditure on education.	Percentage of budgeted expenditure on education—to total Budget (R. A.)
Bihar	64.26	24.3
Madhya Pradesh	82.15	15.7
Orissa	76.67	18.5
Rajasthan	99.05	25.0
U. P.	64.30	19.4
Jammu & Kashmir	145.86	13.7
Gujarat	147.18	24.1
Hariyana	119.89	17.2
Karnataka	109.26	18.7
Kerala	148.30	30.0
Maharastra	120.46	16.7
Punjab	146.16	20.8
Tamilnadu	108.35	20.8
West Bengal	97.29	22.8
Sikkim	318.46	15.6
India	100.41	20.1

The All India average percentage of budgeted expenditure on education to the total budget (revenue account) is 20. But the per capita expenditure on education shows great variation between the States from Rs. 315 in Sikkim to Rs. 64 in Bihar and U. P.. Poorer States like Bihar, Orissa, U. P. and Rajasthan have per capita budgeted expenditure less than the all India average and these are the States which are educationally backward.

This situation should not be allowed to continue. A certain national minimum standard of school education should be maintained and States which are unable to reach this standard due to lack of financial resources should be given special grants to enable them to reach the national minimum standard of education and to fill up the gap in the coverage, quality and content of education. As the States are saddled with more and more non-plan expenditure from plan to plan, the plan expenditure which is really the additional investment in education forms at present (1985-86) only 12.12% of the total expenditure on education. Therefore, the funds available for creating new-facilities or improving the old are very meagre. It is therefore, necessary to fix some norms for funding of education and its sharing between the States and Centre. In this context, it has to be estimated what extra expenditure would be involved in bringing about a balance between the projected needs for education generated by the new strategy of development of rural areas and backward regions and the demand for education.

For prevention of wastage of resources devoted to education, the different ongoing projects have to be properly evaluated and those which have become unproductive have to be abandoned and the resources released should be utilised more usefully in other projects. In coming years, we have to make some hard choices for development of human resources for economic growth. At all levels of formal education the choice has to be made between quantity and quality. It may also take many forms such as between primary education for all and a fairly high quality secondary and higher education for a comparatively small number. In general, social and political pressures will emphasise on quantity, however, economic growth will emphasise quantity at the base but quality at middle and higher levels of education. In building technical skill or craft level skill, a choice has to be made between placing the primary responsibility for it on formal education system or on the employing institution. In practice it has to be a joint responsibility of both, the modalities for which have to be carefully worked-out.

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Agricultural Development : Problems & Prospects

Prof. Baidyanath Misra

Agricultural planning in India has three main objectives : (i) to eliminate imports by increasing production, (ii) to increase return to the tiller of the soil, and (iii) to reduce inequity in the land holdings in rural areas along with protection to tenants and agricultural labourers. An examination of these objectives shows that we are still confronted with many difficulties to achieve these objectives. The following are important ones :

(1) Even though there has been considerable improvement in production of foodgrains, the long-term rate of growth of foodgrains production is of a moderate level. It is about 2.6 per cent per annum since 1970-71. If we compare the five yearly averages of production, we do not find any distinct trend in the rate of growth from one quinquennium to another, starting from 1970-75. The average growth rate of production in the post-green revolution period is almost equal to what it was during the pre-green revolution days, indicating that green revolution has petered out long-ago. Agriculture is still a gamble of monsoons. In the year 1978-79 and 1987-88, the production of foodgrains was so low that we had to import substantial quantity of foodgrains from outside to meet the basic requirements of people. It is true that agricultural development in India has reduced the danger of famine but not the malnutrition or regional imbalance.

(2) The steep rise in the costs of agricultural inputs has made farming almost uneconomical. For example a statement made by Farmers' Co-ordination Committee in Gujarat shows that in the last decade the prices of fertilisers have gone up by 243 per cent, pesticides by 329 per cent and the cost of tractors by 290 per cent. Indirect taxes, like excise duty, imposed by the Centre in the last 10 years have raised the prices of agricultural inputs by 145 per cent, while the hike in support prices in the last 20 years has been only 213 per cent. According to Kerala Karshaga Sangha, the tractors available for hire in the State at Rs. 65 four years ago now cost Rs. 90-95. Farmers in West Bengal point out that even the price of organic manure has gone up 3 to 4 times within a period of 4 to 5 years. Inorganic fertiliser prices have also been rising steadily and now it costs Rs. 2.50 for a kg. of urea and Ra. 4/- for a kg. of 'Grow More'—a combination of nitrogen and potash. All these show that agricultural operations are very costly (1).

(3) Indian agriculture is becoming increasingly dependent on expensive resources like chemical fertiliser, water, pesticides etc. For example HYV cereals tend to consume twice as much water as the hardier among the traditional Sstrains, which can bear a considerable amount of moisture stress. Further, the green revolution has more

(1) See Farmers' Issues, A Survey made in Times of India, New Delhi, October, 22, 1989.

than quadrupled agriculture's consumption of and dependence on electricity in a little over a decade.

Today, a fifth of all power generated in the country which is already double of what was produced a decade ago—goes into irrigation pumpsets that feed HYV crops. Response of fertiliser is also becoming less in increasing foodgrain production. For example, in the eighties fertiliser consumption has grown by 63 per cent (on a three year average), but foodgrain output has risen by less than 19 per cent.

This means the new strategy is losing its attractiveness and meeting with resistance. A poor country like India cannot afford to have such a high cost agriculture. In a farm-based economy, the rising unit costs of agricultural output push up industrial costs and vice-versa in a never ending vicious circle.

(4) The machinery for ensuring timely availability of inputs like seeds, fertilisers and financial credit is ridden with corruption and is quite ineffective. A farmer in Medak district complains that half the seeds he buys never germinate. Often, these seeds have to be bought from private merchants as access to the agricultural department and co-operative net work of the single window system is controlled by landlords. Even agencies like ICRISAT do not provide seeds in time. Farmers have to run several times to ICRISAT to get improved groundnut seeds. They have no proper time schedule for sale of seeds.

The power supply in most parts of India is erratic. The farmers in Western U. P. complain that power supply is not available for ten hours a day. The biggest problem is burnt out electric transformers which lie out of order for months. In some areas of eastern India, shortage of irrigation and water logging have become serious problems. Rajasthan is littered with unused wells. Loans are given through Cooperative Societies to construct wells, but due to lack of power, these wells remain inoperative for many years. In Tamil Nadu, cultivators depending on borewell water, cannot operate pumps for a number of years due to inordinate delay in getting power connection. With the continuing drop in water level, farmers have to go in for higher capacity pump sets every third year to sustain the water supply. After installing bigger pumpsets, they have to wait for a year or more for additional power sanction.

(5) The existing technology of agricultural production does not also help the small and marginal farmers whose number is much greater than that of large ones. The existing technology depends on the availability of an irrigation infrastructure and the farmers access to inputs namely high yielding seeds and fertilisers. Though this technology is scale neutral, very few small farmers can afford to purchase these expensive inputs. What is again distressing is that credit and inputs are rarely available to the small and marginal farmers for the simple reason that the delivery system mostly helps the rich farmers. That is why it is said that the new technology have provided benefit to the rich farmers than to the poor ones.

(6) The new technology has created a lot of ecological imbalance. The HYV seeds are susceptible to pests. In order to prevent such pest attack, there is indiscriminate use of pesticides which creates a great deal of air and water pollution. Further, increase in the use of chemical fertiliser and water for increasing agricultural yield brings a steady depletion of micro-nutrients from the soil, lower the water table sometimes to a depth of 200 ft., erosion of top soil, spread of salinity and water logging etc. One example can be sufficient to show how there is utter disruption of natural balance. Every kilo of grain taht Indian farmer harvests from the land, he loses a colossal 36 kilos of top soil, which it takes nature decades to regenerate even in the most exceptional conditions.

(7) There is a lot of excess capacity in new technology which unnecessarily increases cost per unit. As far as realisation of the vast potential of Indian agriculture is concerned, a study of Economics and Statistics Division of the IARI has revealed that our present production is only 35 per cent of what it could be, if all the already known techniques of production are fully utilised. So it is not the lack of knowledge which is a constraint on agricultural growth—but non-utilisation of capacity created. B. B. Vora has pointed out that there is a big gap between gross irrigated potential which has been created and the potential which is utilised—the gap is not less than 25 per cent. Such a heavy wastage in the capacity leads to an increase in the cost of production. For example an Indian farmer spends five to five-and-half rupees to produce a kilo of wheat while in Argentina the cost is only two to two-and-half rupees. But the full utilisation of capacity involves heavy costs. For example full utilisation of existing irrigation facility requires heavy expenditure on drainage, field channels etc. which will involve a cost of about Rs. 30,000/- to Rs. 40,000/- for one hectare of land in canal irrigated area.

(8) In recent years the prices of non-agricultural commodities like Kerosene, clothing or hair oil have increased much more than agricultural commodities. As a result, the terms of trade have become adverse for agriculture. First of all. only a few commodities are covered by support prices. Second, the support prices are generally computed with notional expenditure, not the actual price of inputs. Third, farmers have little protection when middlemen deliberately bring down prices. If we take the support price of wheat. we find that in 1970-71, the procurement price of wheat was fixed at Rs. 76/- per quintal which was raised to Rs. 173/- in 1988-89. i. e., by 2.28 times. But the prices of non-agricultural commodities on an average have increased by about 4 to 5 times during the same period. Thus the purchasing power of wheat in terms of "all commodities" has been reduced to nearly half. Nearly the same has happened in case of rice.

(9) A lot of price support is given to agriculture in the shape of subsidies (irrigation, fertiliser, electricity and credit) which come to Rs. 12,000 crores in the year 1986-87. Total input subsidies to Indian agriculture from the year 1980-81 to 1986-87 come to on an average nearly Rs. 9090 crores per year, constituting 16.40 per cent of net SDP at

Factor cost (at current prices) (2). But all these subsidies are likely to benefit the rich farmers. They are the farmers who use modern inputs and have surplus foodgrains to sell in the market at higher prices. Small and marginal farmers, agricultural labourers and other poor villagers are not in a position to derive much benefit from such a subsidy and support oriented agriculture. Even rich farmers also complain that the subsidies do not give them sufficient benefit in view of the constrains mentioned above.

(10) There are also other difficulties like regional disparity, imbalance between different crops, marketing bottlenecks and lack of adequate irrigation facilities. We only mention two glaring deficiencies in agricultural technology. First it is found that roughly three-fifths of the total output of food bowl comes from just about a third of its area. These 'food bowls' are located in a few regions endowed with fertile soil. But land in the rest of the country is getting more and more degraded. Second, while the yield of wheat has increased about five times and rice about two times, but the production of course grains (nutritionally superior and consumed mostly by poor people) and pulses (the primary source of protein for a vast majority of the Indian people) has not shown any sign of increase.

(11) Recent studies in regard to distribution of land holdings and asset distribution show that there is a great deal of concentration of wealth in rural areas. According to the data on land holdings based on the Agricultural Census of 1980-81, holdings below 2 hectares form 74.6 per cent of total number of holdings, but account for 26.3 per cent of area. Large holdings (10 ha. and above) constitute only 2.4 per cent of the total number of holdings, but account 22.8 per cent of the area. The distribution of assets among the rural households indicates that about 39 per cent of the households have total assets less than Rs. 10,000/- each, sharing about 5 per cent of the value of total assets. At the other end of the scale, about 8 per cent of the households have assets more than Rs. 1.00 lakh each, acounting for 46 per cent of the value of total assets. Further concealed tenancy continues in many parts of India and the agricultural labourers are increasing from one decade to another. All this implies that land reform measures have not yet proved effective in ensuring equity in rural areas.

In view of this, there is need to develop an alternative strategy which will increase agricultural production and at the same time correct the distortions mentioned above. The following suggestions are now under consideration of the agricultural scientists.

(1) Instead of relying entirely on high yielding varieties which require very high doses of chemical fertilisers the focus should be changed to improving local varieties. This does not mean that we will give up HYV. But a combination of the two will provide better benefit to the cultivators. If research can be directed to improve local varieties,

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(2) Cf. Ashok Gulati, Input Subsidies in Indian Agriculture EPW, June 24, 1989.

agricultural development can take place with less of costly inputs. Improved local varieties will not require so much of chemical fertiliser as HYV.

(2) The new agricultural technology depends mostly on irrigation. But in India only about 30 per cent of the cultivated area is irrigated. Irrigation definitely has great potentiality for increasing production. An analysis of 14 year data for the period 1970-71 to 1983-84 reveals that while in absolute terms, the yield level in dry land has drifted upward at an incremental rate of about 12 kgs. per year per hectare the yield rise from the irrigated segment amounted to 42 kgs. per year per hectare. (3) We have therefore to increase irrigation wherever possible with a clear policy to promote the most economic use of water and an appropriate distribution system for the purpose. But as it is, there is limited scope for extension of irrigation in the dry region. Therefore, a time has come when location specific dry land technology has to be developed in order to increase the production of particularly coarse grain. Two things are probably important in dry land agriculture. First, some improved varieties have to be developed which can perform better, with at least a basal dose of plant nutrients under unirrigated conditions. Secondly, effective measures should be taken for soil and water conservation which will have both short and long term impact on soil as well as on crop production and crop pattern.

(3) Another area where a lot of work has to be done is the use of organic residue of biogas, slurry or sludge in the production of agricultural crops. It is richer in nitrogen than the ordinary manures traditionally used by Indian farmers and also contains humus which is necessary to maintain the stucture of soil. A combination of organic and inorganic technology will not only minimise the use of chemical fertilisers, but will also improve the quality of soil.

(4) We have relied mainly on pricing mechanism to increase agricultural production. That is why incentives are provided in terms of subsidies, increase in procurement prices, loans at concessional rates, reduced taxes on land, irrigation and power and so on. But the response of crops to price incentive has been weak in many cases. For example in case of rice and wheat, price incentive has increased the supply, but not in case of pulses and oilseeds. What is therefore necessary is to increase productivity of capital and labour by effectively utilising the existing capacity and increasing the technical know-how of the farmers.

(5) Finally another area which needs urgent attention is land reform. In the fifties and early part of sixties structural change in agriculture was given quite a lot of importance. But once new technology took the field and helped in increasing production, structural change was relegated to the background. We want to increase agricultural

(3) Cf. B. D. Dhawan, Irrigated versus Dry Farming, Mainstream, March 19, 1988.

production, but at the same time help the small and marginal farmers along with agricultural labourers. Therefore, both technological change and structural change should be combined so that agricultural development can serve both the purposes—increase in production and improvement in the share of poor farmers and agricultural labourers. Structural change implies enforcement of land laws, distribution of surplus land, recognition of tenancy and maintenance of security of tenants, consolidation of holdings, service co-operatives and so on. All these are necessary to equitably distribute the gains of agricultural productivity among all those who are depending on agriculture. Besides, by starting quite a large number of viable non-farm occupations in the rural area, the pressure of population on agriculture can be reduced which will make agriculture a profitable proposition.

Problems of Agricultural Development in Orissa

S. K. Palit

The aim of this paper is to state briefly, as an over-view, some of the basic issues underlying agricultural development in general in Orissa and which may have a bearing on the Eighth Five Year Plan.

(1) Agricultural statistics require to be streamlined and improved upon in respect of the methodology so that a more accurate picture of the growth rate is reflected in the reported statistics. Since the Royal Commission of Agriculture made its observations in 1928, the methodological improvement in this respect has been limited although a number of Committees have gone into it and made several observations during the 50s and 60s. At present the Bereau of Statistics reports the figure on paddy which is accepted by the Government and for the rest we depend on the statistics of the Directorate of Agriculture. My observations are restricted to the statistical information furnished by the Directorate of Agriculture. In the absence of a reliable basic data, any attempt to apply sophisticated econometric techniques, undertake regression equations and determine the goodness-of-fit of the functions fitted to the equation would be meaningless.

(2) Agriculture certainly plays a predominant role in the economy of Orissa compared to the All India average. But the growth of agriculture cannot be studied in isolation. There is a sociological aspect which needs to be gone into by the researchers. The motivating force behind economic growth ultimately arises out of, what has been often described as, the crisis of rising aspiration. It is a crisis in the positive sense. This can happen if the village community is exposed to the world outside. This exposure develops through a variety of factors like rural electrification, communications and transport, education including adult education, media coverage etc. In fact literacy is the most important of all. There may be all the inputs required for the agricultural growth including canal water but cropping intensity depends on the farmers' decisions to put in extra effort with the assistance of extension agencies so that his aspiration to have a better standard of life, to send his son to the best engineering school in the country, to acquire the modern amenities in his farm house etc. take a concrete shape.

(3) Market infra-structure is an important determinant for the adoption of improved technology. This is particularly true of small and marginal farmers, who have comparatively less capacity to withstand the uncertainties of price variations. Studies conducted by the ICRISAT, Hyderabad. have shown multiple regression equation with

variables both from the marketing angle and production angle. The values of the co-efficients in respect of marketing variables were higher in determining the productivity taken as a dependant variable.

(4) Land Reforms constitute a very important element in providing the required institutional frame-work in which agricultural activity can go on with a sustained growth rate. This has been highlighted not only in the Seventh Five Year Plan document but also in the previous Five Year Plans but the progress has not been commensurate. There is oral tenancy in large parts of Orissa and absence of motivation on the part of the cultivators, who have no legal status or incentive to put in modern inputs and increase the productivity. This also restricts the flow of institutional finance and cooperative finance as the ownership rights of the cultivators are restricted or absent.

(5) During the last five or six years considerable volume of data has been collected through Remote Sensing Agency and Satellite information centre on the land use pattern availability of wasteland of various categories. These can form a basis for plan of action for upgrading the basic productive resource i. e., land. We have now a lot of information but no systematic classification of the same including soil status and what can be done in a time bound programme to rectify the soil imbalance and upgrade the soil which has been subjected to erosion due to unscientific cultivation or natural factors.

(6) Management of water resources already created with very heavy investment sometimes Rs. 35,000 to Rs. 45,000 per hectare requires to be improved. There are large areas suffering from the water logging and lack of drainage, water budgetting or maximum utilisation of the available water in the canals through Command Area Development is yet to be achieved. Even where assured water is available, proper inter-action between the Agriculture Department and the Irrigation Department in evolving a proper cropping pattern to get the optimum benefits from the available water requires strict monitoring and coordination between the different field level agencies. This includes not only the major. medium and minor irrigation projects but also lift irrigation points where ground water has been tapped. Exploitation of ground water in Orissa is hardly 10 per cent or perhaps even much less. But it varies from one place to the other. In the absence of detailed geological survey and grid maps, the present estimates of ground water potential and their exploitation can at best be intelligent guesses. But two points stand out as significant; there is gross under-utilisation of ground water potential even on the basis of inadequate data available to us; and secondly, benefit-cost ratio is high in respect of lift irrigation according to most studies.

(7) Although the importance of improved seeds of wheat and rice were demonstrated during 1965 with the Mexican wheat and the Taichung rice, systematic attempt to develop HYV seeds for replacement in the paddy growing areas has not been undertaken although this is one of the least expensive inputs compared to others, like

fertilizer, irrigation etc. There are established research results to indicate suitability of certain types of seeds under particular agro-climatic conditions, high land, medium land or low land. But the attempt to have breeder, foundation and certified seeds according to a planned manner takes long time to bevelop and seed replacement rate in Orissa at the moment is hardly 3 per cent. Perhaps greater stress should be laid, as far as certified seeds is concerned, in promoting the idea of seed village scheme. Even in respect of breeder and foundation seeds greater privatisation with educated youth, may be agricultural graduates, should be encouraged under adequate supervision.

(8) Fertilizer consumption is an important indicator of the rate of growth of agricultural productivity. In Orissa it is as low as 17 KG per Hectare. There are considerable inter-district variations. It is relatively higher in irrigated areas, in Sambalpur and Ganjam and the coastal districts. But as low as 5, 2 or 3 KG per Hectare in areas like Phulbani and Koraput. A review of the literature on contribution of fertilizer to the productivity vis-a-vis other inputs indicates that the coefficient value of fertilizer is the highest when we put them in a multiple regression equation with a simple linear or log-linear function. But the response to the fertilizer applications has been inadequate, even where there are no other constraints. The reasons are as follows :

(a) Inadequate extension education as a result of which the optimum dosage of different components of N, P and K and also micro-nutrients are not applied. Excess of nitrogen is an expensive waste and attracts pests apart from the fact that we do not get inter-action effect when the combination is not optimum;

(b) Non-availability of the right type of fertilizer at the appropriate time at the Block level ;

(c) Non-availability of credit where the farmers are not able to mobilise their own resources;

(d) Adequate soil testing facilities to determine the optimum requirement of fertiliser and rectifying any inherent defficiency in the soil so that application of fertilizer yields the maximum return. For example, in most of the districts in the State a major portion of the soil is acidic in character though the degree of acidity varies from place to place. Thus, there can not be any standard prescription regarding optimum dosage without identification of the soil characteristics.

(9) The cooperative credit structure and the coverage of the commercial banks in the primary sector put together do not meet even 10 per cent of the requirement of the credit. Various attempts have been made in the past like Sen Committee set up by the RBI to make estimates on this subject. But the fact remains that the cooperative credit is the most vulnerable point due to a weak infra-structure. There are various aspects of this problem but the crux of the matter is recovery should be ensured, there should be re-cycling of finance and greater credit will automatically flow into the pipeline.

This largely depends on adequate supervision of the administrative machinery at the field level. But waiving of debts, except under exceptional conditions and in bonafide cases, or lowering of the interest rate, are short term palliatives. It is not a panacea.

(10) Adequate inter-action between Directorate of Agiculture, OUAT and CRRI, between the administrative wing and the research wing so that the T. & V. system .and the extension organisation functions in a smooth manner. There is considerable volume of expertise in each of these wings but adequate inter-action is essential to get the desired results.

Introduction :

The basic objective of planned development is to ensure provision of food, clothing and shelter.

In these efforts the role of Agriculture is of utmost importance. Agriculture not only provides the life sustaining food and clothing, it also provides employment and income to the mass of semiskilled and unskilled labour force of this country.

The role of agriculture is all the more important in Orissa where more than 2/3 rds of its population depend on agriculture for their livelihood. Management of the Agriculture Sector in Orissa is thus of great importance for ensuring planned development of Orissa.

Review of Development in Agriculture :

A review of planned effort in the field of agriculture over the last six Five Year Plans and the lst 3 years of 7th Plan in Orissa indicate that while efforts have been made in all possible directions to increase production and productivity and ensure even distribution of land among all, we are yet to reach the all India Average level in many respects. An analysis of the important indicators of such development will reveal the picture more accurately.

Growth rate of Agriculture in Orissa :

The Index Number of Agriculture production is an ideal indicator of growth of Agriculture in Orissa. The Index Number of Agriculture Production worked out by P & C Department over the peried 69-70 to 86-87 indicate the following growth rate in production of different agriculture commodities

(a) Index Number of production of all commodities over the period 69-70 to 86-87 is 154.7

(b) Index Number of production of Food Grains over the period 69-70 to 86-87 is 142.6

(c) Index Number of production of Non-Food Grains over the period 69-70 to 86-87 is 236.0

In terms rate of growth the figures work out as follows.

(a) Annual Growth rate of increase in all Commodities over the period of 69-70 to 86-87 is 3.2%

(b) Annual Growth rate of increase in Food Grains over the period of 69-70 to 86-87 is 2.5%

(c) Annual Growth rate of increase in Non-Food Grains over the period 69-70 to 86-87 is 8.0%

The growth rate of agricultural production will however be relevant only if viewed in the context of growth of population in Orissa. Population Growth in the State during this period can be known from the following data.

Population during 1971 was	2.19 crores.
Population during 1981 was	2.64 crores.
Net increase	0.45 crores.

This indicates a rate of growth of 20.51 over the decade and 2.05 per annum during the period 1971-81.

As such though the growth rate in production appears encouraging major part of the increase is almost neutralised by the increase in population leaving the percapita availability of food grains between the period 69-70 to 86-87 more or less stagnant. The higher growth rate of non food grains only increases the availability of other consumption nutrients vis-a-vis food items.

The production of major crops in Orissa starting from the year preceeding the 7th Plan (84-85) upto 1987-88 is stated below. Quite in keeping with the trend of agriculture production in State, the achievement in production as compared to target is also seen increasing at a fluctuating rate.

Another major Index of development of agriculture in the State is increase in productivity/yield per hectare of different crops. Table-III indicates the increase in productivity of important crops. The yield rates achieved in the State during the first three years of 7th Plan period are as follows. While the increase in yield rates are encouraging, in case of Rice & Pulses the productivity lags behind the All India average

Figures :—Quintal per Hect.

Crop	Year 1984-85	1986-87
Winter Rice	10.14	12.00
Summer Rice	18.55	19.85
Autmn Rice	6.69	6.19
Total Rice	9.69	11.00
Ragi	7.57	7.43
Gram	5.52	6.90
Mung	5.11	5.55
Biri	5.34	5.57
Sugarcane	59.24	70.90
Mustard	4.56	4.68
Jute (Bale)	8.53	9.03
Cotton	1.00	1.00
Potato	85.19	95.10

Cropping Intensity and Cropping Pattern

Two other important parameters of Agriculture production in the State are the Cropping Intensity and Cropping Pattern. While cropping pattern indicates the % of area under each crop to gross cropped area, cropping intensity is derived by dividing gross cropped area with net cropped area. In Orissa cropping intensity is basically a function of area under irrigation because it is assured irrigation that enables the farmers to go for multiple cropping.

Data given below indicate the actual position of cropping pattern in Orissa.

	1984-85		1986-87	
	Area	%	Area	%
Rice	43037	54.96	43936	53.18
Wheat	538	0.69	468	0.56
Maiz	1651	2.11	1633	1.98
Ragi	2873	3.67	2768	3.35
Others	1853	2.36	1560	1.89
Total Cereals	49952	63.99	50365	60.96
Total Pulses	16569	21.16	19704	23.89
Total Food Grains	66521	84.95	70069	84.81
Total Oilseeds	9190	11.74	10034	12.16
All Fibres	959	1.22	892	1.08
Total Other Crops	1640	2.09	1609	1.95
Grand Total :	78310	100.00	826.14	100.00

The cropping intensity in the State has also steadily increased from 106% in 1960-61 to 146.4% in 85-86. This ratio can be substantially increased by propagating multiple crop under rainfed conditions.

i) Strategy for Agriculture Development in Orissa

The strategy adopted by Government of Orissa for development in Agriculture during the 7th Plan Period is as follows.

i. In non-irrigated and Rainfed area—To stabilise production through adoption of latest dry land farming technology.

ii. In Irrigated Area—To increase production through multiple cropping, increased cropping intensity & rational cropping pattern. This strategy is to be achieved through optimum utilisation of land and irrigation potential particularly in Command Areas.

Input Supply

Attention has been given to ensure timely, easy and adequate supply of agriculture inputs like seed, fertiliser, implements, plant protection chemicals, credit and right technology.

i) Strategy to ensure seed supply

To strengthen organisation for seed production and distribution.

a) Production by OUAT, OSSC & DAFP.

b) Distribution by DAFP through one sale point in each block. To increase no. of sale points by cooperative outlets and to continue subsidy on sale of seed. Distribution of large no. of seed kits of Improved/HYV to Small Farmers and Marginal Farmers, under various central Sectors Schemes.

ii) Fertiliser Supply & Distribution

During 6th Plan, Fertiliser consumption rate increased from 8.3 Kgs Ha. (79-80 to 11.2 Kg Ha. (83-84). Attempts are being made to bridge wide inter district variation in the rate of consumption.

(a) Distribution of fertiliser is being strengthened as follows :

i. Through intensive extension effort.

ii. Supply of Fertiliser at subsidised rate to tribal and underdeveloped areas.

iii. Increase Irrigation facilities.

iv. Distribution of large No. of fertiliser minikits to Small/Marginal & Tribal Farmers.

(b) Supply – Strengthen supply and distribution of fertiliser through Cooperatives, Agro Industry Corporations and Private Organisations. Ensure constant flow of supply from manufacturers.

(iii) Plant Protection Materials

i. Strengthen Extension Measures.

ii. Strengthen Distribution System—To ensure easy and timely supply/availability of required pesticides.

(iv) Credit

To meet credit needs of farmers through

i. Cooperative Societies.

ii. Nationalised Banks.

iii. Active Coordination effort of credit organisations and Extension Workers.

(v) Agriculture Machinery

Popularisation of simple type of improved agril. implements and seed-cum-fertiliser drills, through demonstration and subsidised sale. In dry areas :—Proposed to supply seed-cum fertiliser Drill at subsidised rates. Manufacture and popularisation of simple but improved implements taken up through central assistance.

(vi) Extension.

The Extension and Training system will be strengthened as per recommendations of World Bank Mission through NAEP to motivate farmers to adopt latest technology for higher production.

Strategy for Increasing Production of Pulses and Oilseeds.

(A) Strategy for Pulses

i. Raising short duration high yielding varieties of paddy & non-paddy crops and release land for sowing mung/biri in early October under moist conditions.

ii. Raising of Pulses as catch crop in irrigated areas.

iii. Raising Pulse in tail end of canal irrigated area, as a 3rd crop under irrigated conditions.

(B) **Strategy for Oilseeds.**

i. Provision of quality seeds at subsidised rates particularly of Groundnut and Mustard.

ii. Transport subsidy on soil amendment.

iii. Promoting use of phosphatic fertilisers (to increase Groundnut yield) and Potasi Fertiliser (for Mustard yield) through subsidised supply.

iv. Subsidising purchase of plant protection chemical and equipment for control of pests and diseases (for Cotton and Mustard).

v. Expanding the area under Mustard as a catch crop between two paddy crops in irrigated areas.

vi. Expanding the area under Groundnut as a mixed crop and intercrop besides growing this after rice in irrigated conditions and an early Rabi crop in unirrigated conditions.

vii. Expanding the area under Groundnut and Sesamon in Kharif by diverting Risk prone Rice Area.

Growth of Crop Output in Orissa

S. K. Tripathy
Dr. B. Bhuyan

Introduction

Agriculture plays the key role in economic development of the State. The share of agriculture and animal husbandry sector in net State domestic product declined to 56.81 per cent in 1982-83, from 63.23 percent in 1970-71. Process of development in the agricultural sector started acting with the onset of the green revolution and introduction of high-yielding varieties of seeds. The magnitude of development as well as factors contributing to this over the period of the last one and half decade has become a matter of dabate among the elites. A clear cut picutre on this issue is necessary for framing the strategy of development of agriculture in the eighth plan.

Objective of the Study :

Keeping this in view, an attempt has been made in this paper to analyse the problem in detail. Accordingly, the objectives set for the study are the following :

1. To evaluate the growth rates of area, production and productivity of major food crops of the State during 1970-71 to 1984-85.
2. To examine the relative contribution of area, yield, cropping pattern and their interaction towards the additional food-grains production in the State.
3. To examine the progress of agricultural development through some selected indicators.

Data and Methodology :

Data used for this study have been collected from various secondary sources. Time series data on area, production and yield of major crops of the State for the period 1970-71 to 1984-85 have been obtained from "Agricultural Statistics of Orissa", published by Directorate of Agriculture and Food Production, Govt. of Orissa. The relevant statistics about the indicators of agricultural development have been collected from various issues of "Orissa Agricultural Statistics" and "Statistical Abstract of Orissa", published by Directorate of Agriculture and Bureau of Economics and Statistics respectively.

The compound growth rates of production, cropped area, and yield were worked out by making use of an exponential function of the form $Y = AB^X$. When expressed in logarithmic terms, this function transforms into linear function of the following type.

$$\text{Log } Y = \log A + X \log B$$

$$\text{Log } B = \frac{\Sigma X \log Y}{\Sigma X^2}$$

Where B = Antilog of log B

Compound growth rate (r) (Per cent) $= (B - 1) \times 100$

The seven factor additive decomposition model of Minhas and Vaidyanathan (1) was used to find out the relative contribution of the various component elements to the icreased food grains production in the State over the period 1970-71 to 1984-85. Crop out-put in year "O" and "t" represented by P_o and P_t, respectively was estimated as below :

$$P_o = A_o \sum_{i=1}^{n} W_i \; C_{io} \; Y_{io}$$

$$P_t = A_t \sum_{i=1}^{n} W_i \; C_{it} \; Y_{it}$$

Where P_o = Crop output in Year 'O'

P_t = Crop out put in Year 't'

A_o = Gross cropped area in base Year 'O'

A_t = Gross cropped area in final Year 't'

W_i 's are constant price weights assigned to different crops and consists of three year average of wholesale prices. C_{io} 's and C_{it} 's are proportions of area occupied by different crops in year 'O' and 't', the representation of cropping pattern which is a three year average on either end. Y_{io} 's and Y_{it} 's are base and final year yield (Three year average on each end).

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(1) Minhas, B. S. and Vaidyanathan, A. 1965,

Growth of Crop Output in India, 1951-54 to 1958-61 : An Analysis by component Elements", J. Indian Society of Agril. Stat. 17 (2), P. 230-252

The increase in crop output over the time period was split into component elements in following manner.

$$P_t - P_o = (A_t - A_o) \sum_{i=1}^{n} W_i Y_{io} C_{io} + A_o \sum_{i=1}^{n} W_i (Y_{it} - Y_{io}) C_{io} + A_o \sum_{i=1}^{n} W_i (C_{it} - C_{io}) Y_{io}$$

$$+ A_o \sum_{i=1}^{n} W_i (C_{it} - C_{io}) (Y_{it} - Y_{io})$$

$$+ (A_t = A_o) \sum_{i=1}^{n} W_i (Y_{it} - Y_{io}) C_{io}$$

$$+ (A_t - A_o) \sum_{i=1}^{n} W_i (C_{it} - C_{io}) Y_{io}$$

$$+ (A_t - A_o) \sum_{i=1}^{n} W_i (Y_{it} - Y_{io}) (C_{it} - C_{io})$$

In the above decomposition scheme, the first element on right hand side of the equation is the area effect, i. e., increase in agricultural production is due to absence of change in yield and cropping pattern. The second term is the effect of yield changes for a constant cropping pattern. The third element reflects the change in cropping pattern in the absence of any change in yield per hectare. Fourth, Fifth, Sixth and Seventh elements show the interaction between yield and cropping pattern, area and yield, area and cropping pattern and area, yield and cropping pattern respectively.

Results and Discussion

Data relating to compound growth rates of area, production and yields of major crops of the State have been presented in Table-1. During the period 1970-71 to 1984-85, rice production experienced a slow growth rate of 0.21 per cent per annum, which primarily resulted from increase in productivity as the contribution of area was found to be negative (−0. 74 per cent). During this period, growth rates of output and productivity of rice were observed to be non-significant. Wheat production in the State registered a higher growth rate of 9.05 per cent which was mainly attributed to area expansion as well as higher productivity. Maize crop recorded the highest growth rate of production, i. e., 9.57 per cent per annum to which area and yield contributed 7. 21 and 2. 22 per cent respectively. Ragi which is the important crop next to rice, in the State, showed a growth rate of 5.31 per cent which has resulted from the area expansion, as the

growth rate of yield was negative (—0.72 per cent). Aggregate output of all the cereals and millet crops during the same period registered slow growth rate of 0.90 per cent, because of decrease in area (—0.75 per cent). Pulse crops have recorded high growth rate of production of 7.24 per cent with area and yield contributing 6.68 and 0.52 per cent respectively. The growth rates of production and productivity of food-grains were observed to be non-significant. Oilseeds production in the State secured a growth rate of 8.81 per cent and this increase in production was mainly due to significant increase in area which was 8.74 per cent. The growth rate of yield of oilseeds was very slow.

Table No. 1

Compound Growth rate of Area, Production and Yield of Major Crops in Orissa (1970-71 to 1984-85).

Name of the Crop	Area	Production	Yield.
1. Rice	—0. 74**	0. 21	0 . 96
2. Wheat	7. 52**	9. 05**	1. 38**
3. Maize	7. 21**	9. 57**	2. 22*
4. Ragi	6. 01**	5. 31**	—0. 72
5. Total Cereals & Millets.	—0. 075	0. 90	1. 10
6. Total Pulses	6. 68**	7. 24**	0. 52
7. Total Food-grains	1. 27**	1. 69	0. 42
8. Total Oil Seeds	8. 74**	8. 81**	0. 56

** Significant at 1 per cent level.

* Significant at 5 per cent level.

Thus it can be concluded that during 1970-71 to 1984-85, growth rates of output and productivity of food-grains in the State were found to be non-significant. Except rice, other crops have shown higher growth rates of area and production. The productivity of all crops except maize and wheat has not increased significantly. The proportion of area under rice to gross cropped area under food-grains was 77 per cent during the triennium ending 1972-73 which subsequently decreased to 62 per cent in triennium ending 1984-85. The declining growth rate of area under rice indicates shifting of paddy to non-paddy crops by the farmers of the State. During recent years, insufficient rainfall in the State has forced the farmers to shift to pulse and oilseed crops.

Relative Contribution of Various Components to Growth of Crop Output :

For examining the relative contribution of various components to the growth of crop output, the data were subjected to an analysis with the help of the additive decomposition scheme as suggested by Minhas and Vidyanathan.

The results of the component analysis have been presented in Table No. 2. The total food-grains production in the State was 4.70 Million tonnes during the base year and

Table No. 2

Relative Contribution of Various Component Elements to Total increased Foodgrains Production in Orissa (1970-71 to 1984-85)

Component Element	Contribution to additional Food-grains (percentage)
1. Area effect	50.11
2. Yield effect	35.81
3. Cropping pattern effect	7.90
4. Interaction between area and yield	5.67
5. Interaction between area and cropping pattern	1.25
6. Interaction between cropping pattern and yield.	−0.64
7. Interaction between area, cropping pattern and yield	−0.10
Total interaction	6.18
Total	100.00

increased to 5.76 million tonnes during the final year, showing an increase of 22.55 per cent over base year. It can be observed from the table that during the period 1970-71 to 1984-85, the major contribution to food-grains production in the State was area expansion. During this period 50.11 per cent increase in production was attributed to area growth, 35.81 per cent to increase in yield, 7.90 per cent to change in cropping pattern. The interaction terms accounted for 6.18 per cent to the growth of crop output. During the same period, the interaction of area and yield contributed 5.67 per cent, the interaction of area and

cropping pattern contributed 1.25 per cent, interaction of cropping pattern and yield contributed −0.64 per cent and interaction of area, cropping pattern and yield contributed −0.10 per cent to increased food production in the State.

It can be concluded from the results of the component analysis that acreage expansion was the main factor responsible for increase in food-grains production in the State. The area under food-grains was 5.87 million hectares during triennium ending 1972-73 which increased to 6.80 million hectares during triennium ending 1984-85.

The area under rice has declined from 4.53 million hectares to 4.24 million hectares during this period. The area under other cereals and millets has increased. Productivity of ragi, horse-gram and other pulses has decreased in the final year. A positive area and yield interaction indicates an increase in productivity of high base period crops. Among different interaction factors, the contribution of area and yield is found to be the highest. It is also interesting to note that contributions of cropping pattern and yield; area, cropping pattern and yield are negative. It is due to decrease in area under rice and fall in productivity of some of the important crops like ragi, horse-gram and other pulse crops during the period.

Indicators of Agricultural Development in the State:

(Trienniumending 1972-73 to 1984-85)

We have selected eight indicators to discuss the cultural development in the State during the two periods, i. e., triennium ending 1972-73 and 1984-85. Proportion of net area sown to geographical area in the State was 36.44 per cent during triennium ending 1972-73 which subsequently increased to 40.22 per cent, thereby showing an increase of only 3.78 per cent over the base year. The magnitude of increase is very slow due to fluctuation of rainfall pattern of the State. The net area sown was 56.63 lakh hectares during triennium ending 1972-73 and increased to 62.50 lakh hectares during triennium ending 1984-85. The gross cropped area increased to 88.45 lakh hectares in 1984-85 from 68.57 lakh hectares in 1972-73. Between the two periods (Triennium ending 1975-76 to 1984-85) cropping and irrigation intensity increased by 20 and 13 per cent respectively. During the base period, about 17 per cent of the gross cropped area was irrigated which increased to 22.26 per cent during triennium ending 1984-85. Irrigation facility in the State has increased by 5.26 per cent. During this period, proportion of area under food-grains has declined to 8.73 per cent. The area under H. Y. V. paddy to total paddy area has increased from 6 to 33 per cent. During trienninm ending 1972-73, more than 17 per cent of the total gross cropped area was reported under cultivation in Rabi season which has increased to 31 per cent during triennium ending 1984-85. Fertilizer is the key element to the success of green revolution. Fertilizer consumption in the State has increased from 6.52 kg to 11.41 kg. between the two periods but still it is below the national average. (Table No. 3)

Table No. 3.

Indicator	Triennium ending (1972-73)	Triennium ending (1984-85)	Percentage Increase/ Decrease
1. Proportion of net area sown to geographical area	36. 44	40. 22	3. 78
2. Cropping intensity (%)	121. 10	141. 50	20. 40
3. Irrigation intensity (%)	130. 67 *	143, 70	13. 03
4. Proportion of area irrigated to total gross cropped area.	16. 64 *	22. 26	5. 62
5. Proportion of area under food grains to total gross cropped area	85. 58	76. 85	−8. 73
6. Proportion of area under H. Y. V. Paddy to total Paddy area.	6. 19 **	33. 19	27
7. Proportion of Rabi cropped area to total gross cropped area.	17. 41	31. 25	13. 84
8. Fertilizer consumption per hect. of gross cropped area (Kg.)	6. 52	11. 41	75

* Relates to Triennium ending 1975-76

** Pertains to Triennium ending 1973-74

Summary and Conclusion

The study reveals that food-grains production in the State has not increased significantly during the period 1970-71 through 1984-85. The increase in food-grains production is primarily due to significant increase in area. Except rice, all the major crops in the State exibited high growth rates of area and production. Rice has recorded the lowest growth rate of production due to significant decline in its area. The high growth rates of area of other crops indicate the shifting of area by farmers from paddy to non-paddy crops. A significant increase in productivity has been observed in wheat and maize crop.

The growth rate of yield of ragi was negative but non-significant. The productivity of other crops has not significantly increased. The results of the decomposition analysis indicate that increase in area is the main factor behind additional food-grains production in the State during the post green revolution period. So effort should be made to increase productivity of major crops in the State. The productivity of different crops can be increased by using H. Y. V. seeds, increasing irrigation facility, application of higher fertilizer dose, integrated pest management and timely intercultural practices.

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Performance of Agriculture in Orissa with Special Reference to a Tribal District (Phulbani)

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K. C. Panigrahi
S. C. Mallick

Phulbani is one of the backward districts of the State in which 58 per cent of the total population belong to Scheduled Castes and Scheduled Tribes. In this paper an attemt is made to explore the following areas, particularly in a tribal concentrated district like Phulbani.

(1) To examine the growth of area, production and productivity of principal crops in Phulbani district during 1971-72 to 1981-82 and 1971-72 to 1985-86 and to compare it with that of the State.

(2) To estimate the productivity gap of principal crops in the district with that in the North-Eastern ghat Zone, Orissa, national average and yield of the research field.

(3) To identify the constraints on agricultural production creating a wide gap in productivity.

Materials and Methods

The data pertaining to the area, production and productivity of the principal crops during 1971-72 to 1985-86 of Phulbani district as well as the State are collected from the Directorate of Agriculture and Food production, Government of Orissa[1]. In order to have a more dependable perspective of growth, the triennial averages of area, production and productivity are worked out and the averages computed for the series covering the years, 1971-72 to 1985-86.

The compound growth rates are calculated by using a log-linear function, namely $\log y = a + bt$, where, y is area / production / productivity, 't' represents time variable and growth rate is given by $(e^b - 1) \times 100$. Time series of area, production and productivity used for such estimation are the series of three yearly moving averages.

Yield gap can be obtained by using the formula, i. e.

$\frac{(Y_1 - Y_2)}{(Y_1)} \times 100$, where Y_1 is the yield achieved in the North-Eastern ghat Zone / State / Nation / Research field, and Y_2 is the yield obtained in the Phulbani district. Productivity gap is expressed in percentage.

Results and Discussion

The compound growth rates of area, production and productivity of principal crops in the Phulbani district and the State have been calculated for two periods of time. The growth rates of area under principal crops during 1971-72 to 1981-82 and 1971-72 to 1985-86 in Phulbani district and the State have been presented in Table-1.

The growth rates of area under total rice and cereals in the state have declined significantly over the period.. It is mainly due to substitution of pulses and oilseeds by the growers in the State. The growth of area under summer rice was negative during 1971-72 to 1981-82, but increased significantly in 1981-82 to 1985-86. The trends in area under winter rice, summer rice and total rice which were negative during 1971-72 to 1981-82 in Phulbani district their growth rates are positively significant during 1971-72 to 1985-86 recording a sizeable rise in area under these crops during 1981-82 to 1985-86. Area under pulses, food-grains and total fibres made a higher growth rate in Phulbani district as compared to the growth observed in the State during 1971-72 to 1985-86. The growth rate of area under groundnut is less than the State during both the periods under study. However, the area under sugarcane records a negative growth rate during 1971-72 to 1985-86 recording a decline in area during 1981-82 to 1985-86 in Phulbani District.

The compound growth rates of production of principal crops during 1971-72 to 1981-82 and 1971-72 to 1985-86 in Phulbani district and the State are displayed in Table-2. Production of Autumn, Winter, Summer and total rice in Phulbani district has made a significant growth during 1971-72 to 1985-86. It is mainly due to a rise in area and productivity during 1981-82 to 1985-86. But the non-significance in the growth of rice in the State implies that the scenario of rice production in the State has remained stagnant over the period. The growth in production of cereals, pulses, food-grains, groundnut, oil seeds, fibres and sugarcane is statistically significant in both the Phulbani district and the State during 1971-72 to 1985-86. Further, the growth rates are higher for all the crops, except for groundnut in Phulbani district as compared to the growth recorded in the State during the period. The growth rate of production of groundnut has increased from—0.019 (1971-72 to 1981-82) to 7.795 (1971-72 to 1985-86) due to a significant rise in area and productivity of groundnut in the Phulbani district during 1981-82 to 1985-86.

Productivity growth of principal crops during 1971-72 to 1981-82 and 1971-72 to 1985-86, both in Phulbani and Orissa State, are presented in Table-3. The productivity of all principal crops of Phulbani district recorded a positive and significant growth during

1971-72 to 1985-86. The State indicates a positive and significant growth only for food crops during the period. Groundnut and fibres record negative growth for the State. It is mainly due to lack of a suitable technology for these crops. Non-significance in the growth of oilseeds and sugarcane in the State indicates that the scenario for oilseeds and sugarcane productivity has remained stagnant over the period. Thus the Table-3 indicates that the productivity of all principal crops in Phulbani district has registered a significant rise during 1981-82 to 1985-86 as compared to the State.

Productivity of principal crops of the Phulbani district is shown in Table-4. This is compared with the average yield of North-Eastern Ghat Zone, State, Nation and the yield obtained in the research field of Regional Research Station, G. Udayagiri and presented in Table-4. Phulbani district contributes 2.5 per cent of the State's Paddy area. But the productivity level of kharif rice, Summer rice and total rice are less than the average yield of North-Eastern Ghat Zone, State and significantly less than the national average and yield obtained in the research field. The yield of total cereals, pulses. food grains, oilseeds, potato, rabi and mustard in Phulbani district are less than the Zone, State and National level. Although, this district contributes only 1.9 per cent of the State's wheat area, its yield level (22.19 Q/ha) is significantly more than the Zone (13.76 Q/ha), State (17.94 Q/ha) and National average (18.73 Q/ha) during 1984-85. Phulbani district contributes about 66 per cent of the total turmeric area of the State. But its yield level (10 Q/ha) is significantly less than the national average (30.97 Q/ha) and yield obtained in the research field (72 Q/ha) during 1985-86.

Percentage of productivity gap of principal crops in Phulbani district with reference to the yield of North-Eastern Ghat Zone, Orissa, National average and the yield obtained in the research field of the Regional Research Station, G. Udayagiri (Phulbani) is presented in Table-5. Table-5 indicates that this district is still to achieve the yield levels of its agro-climatic zone and the State for all crops except for maize, wheat, ginger and termeric. The productivity gap of this district is still 20 to 68 per cent of the national average yield of all principal crops except for maize and groundnut. Its productivity gap varies from 26 per cent (wheat) to 88 per cent (ginger) with reference to the yield obtained in the research station.

Phulbani district contributes 16.5 per cent of the State's area under mustard. But its yield gap was 31 per cent (zonal yield) to 48 per cent (National yield) in 1984-85. Even the gap in the productivity of oil seeds varies from 32.57 per cent (zone) to 40.30 per cent (State). Rice being the principal crop of the zone, its gap is till to the extent of 36.28 per cent (National average) to 76.11 per cent (research field) in 1984-85. Turmeric is the important cash crop of the tribals in the Phulbani district, sharing 66 per cent of the State's area under turmeric. Still its productivity gap is to the extent of 67.71 per cent and 86.11 per cent respectively to the yield obtained at the National level and research field.

Constraints on Production

A number of socio-economic and technological factors are associated with the creation of a wide gap in productivity and agricultural growth compared to the State and national average. These may be explained :

(1) The areas of Phulbani district excepting the northern part of Boudh have elevation of 300 to 800 metres (M. S. L). Such wide and high elevation with specific soil type, climate and rainfall pattern which significantly differ from other parts of the State affect the cropping pattern, type of crops and its operation [2]. Mustard is the important oil-seed in the State and is widely grown in Phulbani district sharing 16.5 per cent of the area under mustard in the State. It can be grown successfully in the district if the crop is sown within 15th October to 30th October [3]. Therefore, the new varieties developed in the State should be tested and verified in the research station before adoption in the farmer's field.

(2) Irrigation is the important pre-condition for adoption of high-yielding varieties. The extent of irrigation facilities available was to the extent of 4.48 per cent and 3.39 per cent of the areas under cereals and total foodgrains of the district as against 27.86 per cent (cereals) and 22.35 per cent (foodgrains) in the State during 1984-85. Table-6 clearly indicates that the entire district mainly depends upon rainfall for crop growth except 16 per cent of the total cropped area.

(3) Adoption of high-yielding varieties is associated with use of fertiliser. The fertilizer use is only to the extent of 3.61 kgs per hectare as against 49.83 kgs/ha in Sambalpur. 30.71 kgs in Ganjam and 15.74 kgs per hectare in the State during 1985-86. Unless irrigation facilities are extended or dryland technology is developed, fertiliser use cannot be increased for increasing productivity. As Canal irrigation is very costly and it comes about to the extent of Rs. 60,000/- per hectare, which is further associated with the problems of waterloging, alkalinity and salinity of the soil, lift-irrigation should be encouraged.

(4) The existing marketing structure is quite inadequate for providing price incentives for agricultural produce in the district. As for example, turmeric and ginger are the important cash crops of the tribals in the Phulbani district. In the absence of a dependable market support, the tribals of this district pledge their crops to the money-lenders even before it is harvested[4]. In the present marketing framework the tribals who are mainly turmeric growers fail to recover their cost of production. A remunerative farm price for tribals will help to raise farm incomes and productivity through adoption of more efficient technology.

(5) Lastly, this district has a high concentration of Scheduled Caste and Scheduled Tribes population. This stands in the way of rapid transformation of technology. Therefore, for development of agriculture, particularly in tribal areas, the above areas should be taken care of during the process of planning.

Notes and References

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Table—1

Compound growth rates of Area under Principal crops in Phulbani District and Orissa State.

Crops	1971—72 to 81—82		1971—72 to 85—86	
	Phulbani	Orissa	Phulbani	Orissa
1. Autumn Rice	0.02	1.742∝	3.30*	0.601
2. Winter Rice	(—) 0.01	(—) 2.165*	0.90θ	(—) 1.414*
3. Summer Rice	(—) 0.001	(—) 0.457	4.86∝	1.018θ
4. Total Rice	(—) 0.004	(—) 1.321*	1.46∝	(—) 0.833*
5. Total Cereals	0.02	(—) 0.0076	2.64*	(—) 0.232*
6. Total Pulses	0.07∝	0.082*	7.33*	6.88*
7. Total Foodgrains	0.04β	0.012	4.23*	1.251*
8. Ground Nut	(—) 0.03	0.102∝	2.83	11.53*
9. Total Oilseeds	9.09∝	0.092*	7.94*	8.918*
10. Total Fibres	0.14*	0.017	8.22∝	1.777*
11. Sugar Cane	0.01	0.033*	(—) 0.83	2.825*

* Significant at 0.1% level of Probability.

∝ Significant at 1 per cent level of Probability.

β Significant at 5 per cent level of Probability.

θ Significant at 10 per cent level of Probability.

Table–2

Compound growth rates of Production of Principal crops in Phulbani District and Orissa State.

Crops	1971–72 to 81–82		1971–72 to 85–86	
	Phulbani	Orissa	Phulbani	Orissa
1. Autumn Rice	0.055β	3.039β	7.523*	4.424∝
2. Winter Rice	0.004	(–) 1.181β	3.729∝	(–) 0.009
3. Summer Rice	0.048β	(–) 0.009	8.468*	2.094θ
4. Total Rice	0.013	0.624	4.424∝	0.695
5. Total Cereals	0.038*	0.003	6.586*	1.337∝
6. Total Pulses	0.146*	0.088*	13.815*	7.869*
7. Total Foodgrains	0.054*	0.027θ	7.69*	3.395∝
8. Ground Nut	(–) 0.019	0.079∝	7.795∝	11.249
9. Total Oilseeds	0.154*	0.075*	13.841*	9.622
10. Total Fibres	0.265*	0.003	17.761*	1.599
11. Sugar Cane	0.066∝	0.029	2.778θ	2.849

* Significant at 0.1 per cent level of Probability.

∝ Significant at 1 per cent level of Probability.

β Significant at 5 per cent level of Probability.

θ Significant at 10 per cent level of Probability

Table—3

Compound growth rates of productivity of principal crops in Phulbani Distric and Orissa State.

Crops	1971-72 to 81-82		1971-72 to 85-86	
	Phulbani	Orissa	Phulbani	Orissa
1. Autumn rice	0. 034β	0. 029β	4. 238*	3. 586*
2. Winter rice	0. 021θ	0. 017β	2. 873$\propto$	2. 447*
3. Summer rice	0. 045*	0. 009	3. 419$\propto$	2. 518
4. Total rice	0. 012θ	0. 015	2. 92$\propto$	1. 538*
5. Total cereals	0. 026β	0. 007	4. 160*	1. 524$\propto$
6. Total pulses	0. 063*	0. 006	5. 269	0. 98θ
7. Total foodgrains	0. 015θ	0. 003	3. 371	1. 111β
8. Groundnut	0. 032	(—) 0. 023	4. 448β	(—) 0. 212
9. Total oilseeds	0. 049$\propto$	(—) 0. 016	5. 536*	0. 601
10. Total Fibres	0. 034	(—) 0. 011β	7. 177$\propto$	(—) 0. 265
11. Sugar Cane	0. 051*	(—) 0. 002	4. 472*	0. 046

* Significant at 0. 1 per cent level of probability.

$\propto$ Significant at 1 per cent level of probability.

β Significant at 5 per cent level of probability.

θ Significant at 10 per cent level of probability.

Table—4

Comparison of productivity of Important crops (Q / ha) of Phulbani district with the average of North-Eastern Ghat Zone, State, Nation and in the research Station during 1984-85.

Sl. No.	Crops	Phulbani	North-Eastern Ghat Zone.	Orissa	India	Research field*
1.	Kharif rice (Autumn+Winter)	9. 07	9. 87	9. 32	13. 75	34. 50
2.	Summer rice	10. 48	9. 52	18. 55	23. 54	42. 00
3.	Total rice	9. 08	9. 87	9. 69	14. 25	38. 00
4.	Maize	13. 87	11. 72	10. 48	14. 41	—
5.	Ragi	6. 55	7. 57	7. 57	10. 61	22. 50
6.	Wheat	22. 19	13. 76	17. 94	18. 73	30. 00
7.	Total Cereals	9. 36	9. 45	9. 53	12. 33	—
8.	Pulses	4. 22	5. 16	5. 12	5. 37	—
9.	Total foodgrains	7. 57	8. 09	8. 43	11. 54	—
10.	Groundnut	9. 75	12. 30	13. 01	8. 70	28. 00
11.	Mustard	3. 56	5. 17	4. 56	6. 88	7. 84
12.	Total oilseeds	4. 43	6. 57	7. 42	6. 60	—
13.	Potato	49. 69	69. 31	85. 19	148. 15	221. 50
14.	Ginger	20. 00	8. 70	14. 42	24. 90	170. 00
15.	Turmeric	10. 00	8. 80	11. 60	30. 97	72. 00

* This refers to the trials conducted in the Regional Research Station, G. Udayagiri during 1984-85 to 1986-87 for recommendation of North-Eastern ghat agro-climatic Zone of Orissa.

Table—5.

Productivity Gap of Important Crops in Phulbani District with the average of North-Eastern Ghat Zone, State, Nation and of research field.

Sl. No.	Crops	Percentage of Productivity Gap*			
		North-Eastern Ghat	Orissa	India	Research Field.
1.	Kharif Rice (Autumn+Winter)	8.11	2.68	34.04	73.71
2.	Summer Rice	—	43.50	55.48	75.05
3.	Total Rice	8.01	6.30	36.28	76.11
4.	Maize	—	—	3.75	—
5.	Ragi	13.47	13.47	38.27	70.89
6.	Wheat	—	—	—	26.03
7.	Total Cereals	0.95	1.78	24.09	—
8.	Pulses	18.22	17.58	21.42	—
9.	Total foodgrains	6.43	10.20	34.40	—
10.	Groundnut	21.31	25.06	—	65.18
11.	Mustard	31.14	21.93	48.26	54.59
12.	Total Oilseeds	32.57	40.30	32.88	—
13.	Potato	28.30	41.67	66.46	77.56
14.	Ginger	—	—	19.67	88.23
15.	Turmeric	—	13.97	67.71	86.11

* The productivity gap is estimated in percentage with reference to the average yield of North-Eastern ghat zone, Orissa, India and the yield of research trials conducted in the Regional Research Station, G. Udaygiri, Phulbani (Orissa).

Table—6

Percentage of area under different crops and the percentage of irrigated area to total area of the crops in Phulbani district and State average.

Sl. No.	Crops	Percentage of area (1985-86) *	Percentage of irrigated area to total area (1984-85)	
			Phulbani	Orissa
1.	Rice	2. 6	32. 57	31. 39
2.	Maize	12. 6	0. 40	3. 23
3.	Ragi	5. 8	1. 55	4. 68
4.	Total cereals	3. 0	4. 41	27. 86
5.	Green gram	3. 3	2. 60	14. 18
6.	Black gram	3. 1	4. 48	4. 99
7.	Total pulses	4. 7	1. 50	5. 77
8.	Total foodgrains	3. 5	3. 39	22. 36
9.	Rape seed and mustard	15. 0	0. 85	11. 97
10.	Ground nut	0. 9	3. 59	16. 35
11.	Total oilseeds	6. 7	7. 48	15. 40
12.	Ginger	18. 94	—	—
13.	Turmeric	65. 80	—	—
14.	Total cropped area	3. 98	16. 13	23. 93

* Percentage of the State's area in 1985-86

Table – 7

Consumption of Fertiliser (N+P+K) in kgs. per hectare in different districts of the State.

Districts	1983–84	1984–85	1985–86
Balasore	9.81	12.97	15.24
Bolangir	8.96	9.75	12.44
Cuttack	12.29	14.10	13.48
Dhenkanal	6.02	6.61	7.79
Ganjam	17.12	23.78	30.71
Kalahandi	0.89	1.07	1.35
Keonjhar	4.30	6.70	9.13
Koraput	3.07	4.50	5.96
Mayurbhanja	4.53	5.54	5.66
Phulbani	2.63	2.87	3.61
Puri	13.64	15.73	19.37
Sambalpur	36.83	41.64	49.83
Sundargarh	11.13	10.06	13.62
Orissa	10.84	12.99	15.74

Agricultural Extension Service in Orissa

Dr. Santi Das

The aim of this paper is to show, on the basis of an empirical investigation, that among the factors responsible for the backwardness of agriculture in the State of Orissa, the chief one is the inadequate and ineffective extension facility in the domain of agriculture.

Orissa is considered to be an agriculturally backward State. A single crop, that is rice, still dominates the cropping pattern of the State. The yield rate of this crop is very low when compared to those of the developed areas of our country. It appears as if the green revolution in rice has bypassed the area which is normally considered to be the homeland of this crop. The H. Y. V. rice has not yet gained popular acceptance. Low level of irrigation, credit constraint, inferior taste of H. Y. V. rice compared to traditional varieties, unsuitability of the straw of H. Y. V. rice for various purposes vis-a-vis the straw from traditional varieties of rice and predominance of small farmers account for its limited adoption. Moreover, H. Y. V. rice is usually cultivated for the market. The agrarian economy of the State is dominated by small farmers, who produce rice mostly for self-consumption. Thus the area under H. Y. V. rice constitutes a small proportion of gross cropped area put under rice. The yield rate of the traditional variety of rice is also low. Dependence on the vagaries of monsoon, appalling poverty, non-adoption of improved farm practices have resulted in low yield rates not only in the case of rice but also in the case of most other crops grown in the State. Such poor performance on the agricultural front is being attributed to the backwardness of the farmers in Orissa. Resource constraint is no longer a problem, since credit is beimg made available to different categories of farmers and to unprivileged ones at concessional rates. Non-availability of irrigation is an important factor that limits the scope of increasing productivity. Yet yields obtained in irrigated tracts in the State are not satisfactory compared to the yields obtained from similar lands in developed parts of the country. It has been noticed that acquisition of inputs does not pose serious problems to the farmers. Thus backwardness of farmers may be the largest single factor which accounts for the present State of affairs in agriculture in the State.

But is it correct to say that farmers in Orissa are backward and tradition-bound ? Are the farmers solely responsible for this state of affairs ? How is it that the farmers who were considered to be intelligent and good (Maddox) have become backward ? The answer seems to be that as most of the farmers are small ones and produce crops for maintaining their families, they adopt such practices as are time-tested. They do not adopt

modern farm practices because they are not convinced of their results. Their behaviour is very rational. Wharton (1969) observes : "The adoption of new technology is liekly to be slow where the crop is a basic food staple, which the farmer produces for family consumption. They are reluctant to experiment with the very survival of their families.....Unless appropriate extension measures are taken to educate farmers with respect to the new farming complexities the higher yields will not be obtained". Thus agricultural extension assumes special importance in case of a backward agricultural economy like that of Orissa.

The following studies will indicate the far reaching importance of agricultural extension activities. The impact of agricultural extension has been highlighted by Roy *et al* (1968). They point out that extension helps to open the way for increased adoption of innovation. A study made by Singh and Vijayaraghavan (1978) reveals that the knowledge about new agricultural technology is positively associated with development. This lack of knowledge explains the backwardness of farmers in Orissa and development of the Punjab and Tamil Nadu. According to Maji and Haque (1978) expenditure on agricultural extension has contributed to the consumption of fertilizers, spread of H. Y. V. and increase of gross value of output per hectare. Barnabas and Pelz (1970) point out that lack of communication stood in the way of achieving the target. Therefore, Jha (1980) suggested a judicious combination of extension and infrastructural investment for reducing inter-regional disparities.

Some quantitative studies have also been made to show the impact of extension on the growth of output. According to Ram and Sirohi (1979) a rupee invested in extension work produced a net return of seventeen rupees. An estimate made by Singh and Bhullar (1979) showed that increase in value productivity per hectare on account of extension input was eighteen per cent. A study made by Singh *et al* (1979) reveals that cost-benefit of extension was 1 : 11.

In India continuous research is being undertaken on dry-land and wet-land farming with fruitful results. But such innovative practices are not being adopted by farmers in the State due to inadequate extension efforts. An analysis of the extension activities in the State since the inception of the first Five Year Plan lends support to this statement.

Prior to the implementation of the First Plan, extension work was done under 'Grow More Food Scheme'. Yet the impact of extension was not quite perceptible in view of the fact that a very small proportion of the cultivated area was put under improved seed and farmers in general did not use fertilizers and did not adopt plant protection measures.

The Agricultural Personnel Committee suggested a ratio of one V. L. W. for five villages. But according to N. C. A. E. R. (1962), a V. L. W. had to cater to large number

of villages. Therefore, Hunter (1970) pointed out that the V. L. W. was so much burdened with other types of work that he had little time to spare for agricultural work. In order to make extension work more effective the State Government created a separate cadre, namely Village Agricultural Workers (V. A. W.). Inspite of such reorganisation the provision of extension services was found to be inadequate (Orissa Credit Project, Banking Plan, 1976). A.V. A. W. had to attend to a large number of farm families. As a result, the extension effort became diffused and weak (Mahapatra, 1978). In order to improve the efficacy of extension work the World Bank Project fixed a norm, i. e., there should be a V. A. W. for a compact area of 400 to 1000 farm families. Now a V. A. W. has to attend to 600 to 800 farm families. But the norm fixed by the World Bank and the Government may not be suitable for tribal areas as these farmers are more backward compared to their counterparts in the advanced areas in the State. A study made by Misra and Mohapatra (1980) revealed that in the tribal areas of Koraput a V. A. W. had to attend to large areas as a result of which proper supervision could not be made. Hence a different norm should be set up for tribal areas and a V. A. W. should be assigned a smaller number of farm families in these areas.

In addition to fixing up different norms for tribal and non-tribal areas, the quality of extension services needs improvement. This writer came across an incident where the supply of poor quality seeds dampened the spirit of farmers. A similar incident was reported by Tripathy (1978). Thus in order to improve the efficacy of extension services good seeds should be supplied to farmers. Moreover, the quality of ex tension service should be improved. The extension officer should be able to diagnose the attack of pests and diseases to crops and render timely help. It was found that the failure on the disease affecting green gram in a village resulted in loss of faith in extension personnel.

Another problem of extension work in the State is the absence of rapport between farmers and extension personnel. There are instances where large number of farmers of a locality were not aware of demonstrations carried on by extension agents, new farming practices and up-to-date machines. Many farmers are not convinced of their usefulness. In some cases certain machines not suitable for local conditions are recommended. All these factors force the farmers to lose confidence on extension agents. Hence it is essential that after careful study of a locality appropriate farming practices should be recommended.

The following findings emerge from the present study :

(1) The present practice of a V. A. W. catering to a large number of farm families dilutes the extension effort. Hence a V. A. W. should attend to a smaller number of farm families and this would necessitate the creation of more posts of village Agricultural Workers than the existing ones. This finding is reiterated by Ghosal (1989) who writes: "What is needed is an effective forward looking extension service to spread these technologies far and wide."

(2) The qualifications of extension personnel need improvement so that they can provide timely help and guidance in times of need.

(3) Only such machines as are suitable for local conditions should be recommended.

It is evident from the foregoing discussion that the extension officer would serve as the most important link between the farmer in the field and experimental laboratory at the State level, so that the former would transmit his problem to the latter through the extension officer for getting solutions and vice-versa.

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Problems of Agriculture in the Tribal District of Phulbani

Dr. S. N. Tripathy

Agriculture constitutes the most important source of livelihood of about 80 per cent of the tribal population in the district of Phulbani. It is one of the most backward districts of Orissa with 39 per cent of tribal population. Majority of them belong to *Khonds*, the marginal farmers and landless labouters. The cultivable area of this district is 2.37 lakh hectares, out of which cultivated area is 2.09 lakh hectares. [1] The soil of the district, particularly in Khondmals and Balliguda sub-divisions, belongs to red laterite group with a low water-holding capacity. The major portion of land is on a plateau with altitudes varying from 1600′ to 3000′ above the sea level. Therefore, the methods of cultivation differ from place to place on the basis of the height of the land cultivated. [2] The extent of high, medium and low lands is 1.42 lakh hectares, 0.40 lakh hectares and 0.27 lakh hectar e respectively.[3] Thus, both settled and shifting cultivation is practised in the district.

Problem of Uneconomic Holdings :

The tribal farmers of Phulbani depend on agricultural holdings which are small scattered and uneconomic. The average size of the land holding for cultivating house-hold s is 0.95 hectare, 0.66 hectare and 1.33 hectare among the scheduled tribes, scheduled castes and non scheduled population respectively[4] Obviously, the income from such uneconomic holdings is meagre. As a result, the tribal cultivators remain below the poverty line.

Shifting Cultivation

Shifting cultivation locally known as '*Podu*' is practised in hill slopes mostly by the tribal farmers. The method addopted in shifting cultivation is to select a patch of the hilly region every year, clean the forest slopes, burn the fallen trees and bushes and finally prepare the field in the ash-covered soil for cultivation[5]. Due to lack of sufficient arable lands and ploughing equipments the *Khond* farmers are habituated to *Podu* cultivation. Usually crops, like 'harada', 'biri', 'kandula' and minor millets are cultivated under '*Podu*' cultivation.

Reasons of Shifting Cultivation

Tribal farmers of Phulbani have resorted to shifting cultivation since most of their flat lands have gradually been snatched away from them by the non-tribals by dishonest

means. The money-lenders from the plains adopt various dishonest methods such as signing blank promissory notes in which the thumb impression of the debtors are taken without any mention or sanction of the amount of the loan lent. Again, by using false weights they inflate the debts in kinds given to the tribal farmers. All these result in keeping them in perpetual indebtedness. The tribal farmers are forced to cultivate all available tracts, raise produce and pay in kind to the moneylenders. In a sense, therefore the money-lenders have impelled the *Kondh* farmers to continue the practice of shifting cultivation.

Shifting cultivation causes multifarious damages to the forests and the tribals. Destruction of valuable forests causes the erosion of the top soil, with consequent floods in the plains, drying up of streams, silting up of reservoirs and destruction of wild life.[6] However, in recent years, the government is taking measures to discourage them to follow the practice, by popularising the plantation activities among them. Settled cultivation is practised by the *Kondh* farmers in the terraced land down the hill streams and in the high lands to a limited extent. The presence of hills, mountains, undulating terrains and forests in large part of the district creates obstacles in the implementation of better farming practices.

Lack of Irrigation :

The average annual rainfall in the district is recorded at 1200mm. [7] The quantity of rainfall would have been adequate for good kharif crop, but due to its uneven distribution during different seasons, in addition to occasional dry spells, the district often faces drought conditions. Irrigation facility is utterly inadequate in the district especially in Khondmals and Balliguda sub-divisions which are predominantly inhabited by the tribal people. Only 13 per cent of the cultivated lands get irrigation facilities from all available sources as against the State average of 26 per cent. [8] Paddy is the major cereal crop of Phulbani district which is grown over an area of 1.01 lakh hectares, which constitutes hardly 48 per cent of the total available area. [9] In the absence of a well-planned irrigation system, the agricultural working force depends exclusively on nature for agricultural production. The per acre agricultural production in the district is low due to lack of adequate irrigation facilities, low level of soil fertality and lack of application of improved agricultural practices.

Problem of Implementation of High-Yielding Variety Programme :

The high-yielding variety programme calls for assured supply of water, substantial investments through fertilisers and pesticides, which are beyond the means of the majority of small and marginal tribal farmers of Phulbani. Therefore, the high-yielding variety

programme has not made much headway in Phulbani. The reasons are lack of capital with the tribal farmers, alongwith inadequate irrigation facilities. Tribal farmer's inability to purchase chemical fertilisers, his traditional attitude towards the use of fertilisers, the system of mono-cropping, poor live-stock, lack of modern implements are the reasons responsible for low productivity of agriculture in Phulbani.

Problems of Marketing :

The unorganised economy of Phulbani has given rise to different kinds of exploitation and the tribal farmers even now do not get a remunerative price for the agricultural produce which they sell in the market. In the absence of adequate transport facilities and market facilities, a substantial portion of agricultural produce and minor forest produce is sold by the tribal farmers in the villages at low prices. Middlemen travel from village to village collecting and purchasing these produce at nominal prices.

It has been pointed that even the government institutions mostly consisting of the co-operatives have been able to procure only about 10 per cent of the total market arrivals of minor forest produce and surplus agricultural products.[10] It is also observed that there has been very wide erratic fluctuations in collection of tribal products by government agencies.[11]

Thus, the low proportion of irrigation area, erratic distribution of rainfall, high periodicity of droughts and infertile nature of the soil are the significant factors responsible for the backwardness agriculture in Phulbani.

It may be emphasised that decline in forest area due to '*Podu*' or 'shifting cultivation', restriction imposed by the government on the use of the forest by the tribal people, decline in the agricultural productivity, large-scale transfer of land to the non-tribals, uncertain rainfalls, frequent crop failures—all these entangle the tribal farmers in the web of poverty and misery. Drink, disease, mal-nutrition and debt are at work to retard their economic development.

Policy Implications :

The Union and the State governments have been taking various measures to eliminate the socio-economic exploitation of the tribal farmers. There has been increasing emphasis on ameliorating their economic condition, breaking the isolation of the tribal society and integrating them into the national mainstream.

The new approach to tribal development was evolved during the Fifth Five Year Plan Period. With focus on development of tribals, the new strategy adopted was the

preparation of a sub-plan for tribal areas with more than 50 per cent tribal concentration. The main thrust of tribal sub-plan, (otherwise known as Integrated Tribal Development Programme) is to raise the income and standard of living of tribal farmers by providing their basic minimum requirements. During the Sixth Plan Period, 580 families were given financial assistance in income-generating schemes like supply of plough, bullocks, goatery and agricultural implements, land reclamation etc. [19]

Apart from the developmental scheme analysed above, some other development programmes like Drought Prone Area Programme (DPAP), Kutia Khond Development Agency (KKDA) are in vogue for alleviation of poverty and to bring about a change in the socioeconomic life of the tribal farmers. But, so far, these agencies have not produced any visible transformation in the socio-economic life of the tribals of Phulbani.

It is, therefore, imperative to study the physical and agro-climatic features of the area, socio-economic conditions of the tribal farmers, physical and human resource potentialities before the implementation of development schemes. Special agricultural development programmes like dry-farming practices, development of minor millets and other special crops should be taken up.

A comprehensive programme for the rehabilitation of shifting cultivators has to be evolved which will cover items like afforestation on the hill tops, horticultural plantation on the slopes, terraced cultivation on the foot-hills with possible irrigation facilities.

A master plan of irrigation development in Phulbani with flow irrigation, lift irrigation and ground water irrigation should be prepared.

Credit and marketing facilities should be streamlined in order to provide consumption-cum-production credit and to provide support prices for tribal produce.

In fact, to make the tribal farmers lead a better life and thereby to enter into the main-stream, a fresh look at the tribal problems is indispensable.

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Development of Agriculture in Ganjam

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Sri Kishorhari Badatya

Ganjam is one of the thirteen districts of the State of Orissa. It has a geographical area of 12,531 Sq. Km. It comprises of 29 blocks, 466 Gram Panchayats and 4670 villages. Geographically the district has been divided into five natural regions—the coastal area, the plains, the uplands, the hilly regions and the agency area. Total cultivable area of the district is 4.79 lakh hectares, of which 1.72 lakh hectares comprise partially bunded and unbunded high land, where non-paddy crops are mostly grown. The bunded high land of the district covers 0.65 lakh hectares, medium land 1.28 lakh hects. and low land 1.14 lakh hects. where mostly paddy is grown. [1]

For administrative convenience and the agricultural development, the entire district has been divided into four agricultural districts *viz.*, Berhampur, Chatrapur, Aska and Parlakhemundi. Besides there are 2 A. D. A. O. circles at Digapahandi and Bhanjanagar in the district. There are 58 A. E. O. circles per Block, and 384 V. A. W. circles in the district.

By and large, agricultural development depends on irrigation, fertiliser consumption and the use of improved seeds and techniques.

Irrigation

In the district the behaviour of the monsoon is very peculiar. It is highly erratic and uneven. Irregular and inadequate rainfal under-scores the importance of irrigation. Rushikulya Irrigation system is the only major irrigation project in the district. In addition there are 9 medium irrigation projects and 1402 minor irrigation projects in the district. Table-I reveals the year-wise area irrigated from all sources in the district.

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1. Office of Deputy Director of Agriculture, Ganjam.

Table—1

Total Area irrigated in Ganjam

Year	Total Area Irrigated from all sources. (Area in' 000 hectares)	
	K	R
1975-76	190.3	39.6
1976-77	209.4	16.2
1977-78	212.7	17.4
1980-81	243.0	27.9
1982-83	246.2	224.2
1984-85	255.2	248.6
1985-86	246.9	30.1
1988-89	228.2	50.6

Source—1. Orissa Agricultural Statistics, Director of Agriculture and Food Productio n, Orissa (Figures compiled)
2. Deputy Director of Agriculture, Ganjam.

The area irrigated is 58% of the total cultivable area of the district. The rest of the areas mostly depend on rainfall.

Fertiliser Consumption

Facts relating to consumption of fertiliser, such as nitrogen, phosphate and potash, in the district are furnished in table 2.

Table—2

Consumption of fertiliser in Ganjam from 1983-84 to 1988-89 (in '000 tonnes)

Sl. No.	Year	Nitrogen	Phosphate	Potash	Total
1.	1983-84	15. 5	2. 5	0. 9	18. 9
2.	1984-85	13. 8	2. 8	1. 1	17. 7
3.	1985-86	18. 6	3. 6	1. 7	23. 9
4.	1986-87	17. 5	2. 7	1. 5	21. 7
5.	1987-88	12. 9	1. 3	1. 3	15. 5
6.	1988-89	17. 8	4. 5	2. 3	24. 5

Source : Office of the Dy. Director of Agriculture, Ganjam Range, Berhampur.

Consumption of fertiliser has increased from 6.6 thousand tonnes to 18. 9 thousand tonnes in 1983-84. After 1983-84 there is a rise and fall between 1984-85 to 1988-89. It is 24. 4 thousand tonnesi n 1988-89.

High Yielding Varieties Programme

This programme has been introduced in the district in 1966-67. The area coverage under different crops in the H. Y. V. programme is shown in Table—3.

Table—3

Area covered under H. Y. V. Programme (in '000 hectares)

Sl. No	Plan Period	Area
1.	2nd and 3rd Annual Plans.	55. 3
2.	4th Five Year Plan.	236. 2
3.	5th Five Year Plan.	332. 2
4.	6th Five Year Plan.	766. 5

Source—Sls. 1 to 3, Office of the Deputy Director of Agriculture, Ganjam Range, Berhampur.

Sl. 4, Orissa Agricultural Statistics (figures compiled.)

The area under H. Y. V. programme has increased from 236.2 thousand hectares in the 4th plan to 766.5 thousand hectares in the 6th plan. The H. Y. V. paddy area was 228.3 thousand hectares during the 4th plan and 320.2 thousand hectares in the 5th plan.[2] The area under H. Y. rice in the 6th plan was 741 thousand hectares. Wheat, maize, jowar and bazra came next in order of importance.

Introduction of New Crops

Cotton has been introduced as a new crop in the district in 1976-77. It will replace ground-nut which is not as remunerative as cotton, and which fails during drought.[3] Production of cotton was 160 bales. in 1976-77. It has increased to 500 bales in 1985-86.[4]

Mixed Cropping

It is advocated in unbunded and semi-bunded land where moisture retention is less. Ground-nut mixed with arhar is widely accepted by the farmers of the district. In hilly areas arhar with other millets is recommended. Table—4 depicts the progress of mixed cropping between 1985-86 and 1988-89. The achievement was more than the target fixed during 1987-88. It was 11. 2 thousand hectares against the target of 7. 2 thousand hectares. In 1988-89, the target was 12. 4 thousand hectares, but the achievement was 10.1 thousand hectares.

Table—4

Target and Achievement of Mixed Cropping in Ganjam from 1985-86 to 1988-89.
(in '000 Hectares)

Year	Target	Achievement
1985-86	10. 7	10. 6
1986-87	11. 0	10. 2
1987-88	7. 2	11. 2
1988-89	12. 4	10. 1

Source—Office of the Deputy Director of Agriculture, Ganjam Range, Berhampur.

2. Office of the Deputy Director, Op. Cit.
3. A note on the visit of Addl. Production Commissioner, 1978. Office of Deputy Director of Agriculture, Ganjam Range, Berhampur.
4. Orissa Agricultural Statistics, 1985-86 .

Diversification of Cropping Pattern

Due to irregularity and uncertainty of rainfall, the area under high land paddy was reduced and diverted towards the production of ground-nut, pulses and til. Similarly the minor millets like '*suan*' were replaced by ragi, pulses and ground-nut. The area under diversification of different crops from 1985-86 to 1988-89 is shown in Table—5.

From 1985-86 to 1988-89, every year more and more area was diverted towards the production of mung, biri, arhar, ground-nut, til, millets and other crops. In each year more or less the target was achieved. In 1988-89 the achievement was less than the target fixed.

Table—5

Area under diversification of different crops from 1985-86 to 1988-89. ('000 Hectares)

Sl. No.	Year	Target	Achievement.
1.	1985-86	3. 83	3. 77
2.	1986-87	6. 69	6. 58
3.	1987-88	0. 83*	6. 20
4.	1988-89	10. 43	6. 99

* Excludes the area under millets.

Source— Office of the Deputy Director of Agriculture, Ganjam Range, Berhampur. (Figures compiled.)

Consumption of Improved Variety of Seeds

There is a good demand of certified paddy seeds particularly varieties like Parijata, IR-36, Daya, Udaya CR. 1030 etc. They are supplied to the farmers through the Seed Sale Centres which are located in each Block Headquarters of the district. It is noticed that the demand for improved varieties of seed is gradually increasing every year.[5]

Area under Principal Crops

Rice is the most important crop in the district. Ragi comes next. Pulses, oil seeds, vegetables are also grown. Table—6 reveals the total area under rice, cereals, oil seeds and food-grains of the district vis-a-vis the State of Orissa from 1974-75 to 1985-86.

5. Office of the Deputy Director of Agriculture, Ganjam Range, Berhampur.

The area under rice has decreased from 1974-75 to 1985-86. It was 363 thousand hectares in 1974-75 and 320 thousand hects. in 1985-86. The same trend has also been noticed in the case of the State as a whole. It is revealed that though rice is the major crop, only 59. 1% of the total area for food grains was under rice in 1974-75. It decreased to 48. 9% in 1985-86. It was 43. 3% in 1983-84. Only 8.2% of the total area of the State for rice was available in Ganjam in 1974-75. It decreased to 7.3% in 1985-86. The area under ragi had increased from 52 thousand hects. to 65 thousand hects. in 1985-86. It was highest in 1983-84. With the increase and decrease in the area under rice and ragi there is also rise and fall in the total area under cereals both in Ganjam and in Orissa. The total area under foodgrains also fluctuates in Ganjam as well as in the State of Orissa during the period under study. The area under pulses increased in Ganjam in between 1974-75 and 1985-86, except in 1976-77, 1981-83 and 1984-86. The area under pulses was highest in 1983-84 (292 thousand hectares) and lowest (155 thousand hectares) in 1984-85. The obove feature is also noticed while comparing the percentage of area under pulses with the total area under food-grains. The area under oil seeds also fluctuates both in Ganjam and Orissa. In Ganjam the area under oil-seeds was more, i. e., 92 thousand hectares in 1983-84. The same is also true in case of Orissa, where the area was highest during that period.

Production

It is revealed that there has been an increase of 38. 3 per cent in the production of foodgrains in Ganjam during the period 1975-76 to 1985-86. But under cereals and pulses in the same period the increase is 34.8 per cent and 54.0 per cent respectively. About 45 per cent increase is noticed in case of rice production from 1975-76 to 1985-86, while the increase is only 22 per cent in Orissa. But the levels of production of rice and cereals fluctuate between the years in case of Ganjam. The production of ragi has decreased in the district compared to the State. In case of pulses there is a rising trend from 1975-76 to 1983-84 except in 1976-77. After that there was a sharp fall of 50 per cent in 1984-85 in comparison to 1983-84. Thereafter it increased to about 57 per cent in 1985-86. It is more or less true in case of Orissa. The same trend is also noticed in the total production of oil-seeds in the district and the State. About 170% increase in the production of oil-seeds is found from 1975-76 to 1985-86 which is very much significant. It exceeds the State level (157%) increase in production of oil-seeds.

Yield-Rate

Though the yield rate of rice has increased from 7.8 quintals per hectare in 1974-75 to 16.9. quintals per hect in 85-86, it is noticed that there is fall during 1976-77 and from 1981-82 to 1984-85. It is more than the State average in all the years except 1977-78, 1983-84 and 1984-85 while the State average is 11.9 quintals per hectare in 1985-86, it is 16.9 quintals in case of Ganjam. In case of ragi, the yield rate decreased from 1974-75 to

1985-86. It was 9.1 quintals per hectare in 1974-75 and 6.7 in 1985-86. In between 1974-75 and 1978-79 the yield rate of ragi in Ganjam was more than the yield rate of the State. But there is a fall in this respect in the district between 1980-81 and 1985-86 except in the year 1981-82 in comparison with the State average. For total cereals, pulses and foodgrains, there is an increase from 1974-75 to 1985-86. It is seen that in the yield rate of pulses, foodgrains and cereals the district of Ganjam is higher compared to the State average in all the years except 1977-78, in case of cereals and foodgrains, and in 1985-86 in case of pulses. In oil-seeds, the district yield rate is higher than the corresponding State figure.

Over-all View

Taking an over-all view of the development of the agricultural sector of Ganjam, it is revealed that the level of irrigation is inadequate in the district. The district has a favourable place in the consumption of chemical fertilisers. Introduction of new crop viz., cotton has taken momentum in production. High-yielding varieties programme seems to be successful. The process of mixed cropping has been widely accepted. Diversification of cropping pattern has taken place. Demand for consumption of improved varieties of seeds has increased. Yet the production of rice is not impressive in the sense that there has been fluctuations in between the years under study. This fluctuation may be due to irregular, and erratic rainfall, lack of irrigation facilities and diversification of crops. The production of ragi has also decreased in some years though the area under ragi has increased. The yield rate of foodgrains is higher compared with that of the State except in the year 1977-78 and 1984-85. In case of oil seeds, the yield rate is impressive.

An attempt has been made to determine the level of agricultural development of the district of Ganjam vis-a-vis the other districts of the State. As many as 10 (ten) major indicators relating to agricultural development have been taken and determined the position of Ganjam. All the indicators have been ranked in a descending order taking the highest as first rank. It is revealed that Ganjam occupies top-most rank in the three indicators, viz., percentage of area sown more than once to net area sown, yield rate of paddy and yield rate of pulses, second place in one indicator, viz., fertiliser consumption, fourth place in three indicators, viz., percentage of gross irrigated area to gross cropped area, yield rate of ragi and oil-seeds and nineth position in two indicators, viz., percentage of cultivable area and per capita availability of cultivable area. Puri, Balasore and Sambalpur occupied first rank only in one indicator. Similarly Cuttack has first and 11th place in two indicators. Puri and Balasore have 10th place in one indicator and Sambalpur 11th place in one indicator.

In recent years some special programmes[6] /schemes have been implemented in the district in order to increase agricultural productivity and production. The programmes / schemes are as follows:—

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6. Agenda note for special Agricultural Strategy Committee meeting for Rabi 1938-89, held on 15.11. 88. Office of the Deputy Director, Agriculture, Ganjam Range, Berhampur.

1. Special Rice Production Programme (S. R. P. P.)

Since 1985-86 this scheme was complemented in the district in order to increase the productivity of rice through adoption of improved technology. Under this scheme training programmes and demonstrations are conducted in the fields of the farmers to show the impact of using quality seeds, recommended fertilisers, pest diseases' management, weed control, water management and suitable agronomical practices.

2. Prime Minister's Massive Programme (P. M. M. P.)

This programme is in operation since 1983-84. Under this programme pulses and oil-seeds kit are distributed to the small and marginal farmers covering 30% of S.C. and S. T. beneficiaries.

3. National Oilseed Development Programme (N. O. D. P.)

This programme has been introduced in the district in 1984-85 with a view to increase the production of oilseeds through extension of area as well as reaching the level of yield potential.

4. Oilseed Production Thrust Project (O. P. T. P.)

This programme was initiated during Rabi 1987-88 giving benefits like free supply of pesticides etc. to get higher production from ground nut crop.

5. National Pulse Development Programme

This programme is in operation since 1986-87. It aims at increasing production and productivity of pulses.

6. Cotton Development Scheme

Under this scheme assistance on important inputs like fertiliser and pesticides are given in the shape of a package to the cotton growers for adopting improved technology to increase the production of cotton.

7. Sugarcane Development Scheme

The aim of this scheme is to popularise sugarcane cultivation in a few potential blocks around the sugar factory area.

8. H. Y. V. Programme in the Tribal Cultivators' Field

Since 1986-87 this programme is in operation in the district. The main objective of the programme is to improve the production and productivity of H. Y. V. crops like mustard and groundnut in the tribal areas through adoption of technology approach.

9. Implementation of Special Food-Grains Production Programme (S. F. P. P.)

During the year 1988-89 this programme is implemented with 100% assistance from the Central Government to increase production of rice in the district.

10. Drought Amelioration Programme

Under this programme seed-kits and fertiliser kits are supplied to small and marginal farmers whose Kharif crop was lost to the extent of 66%, to grow crops like mung, biri, niger, fieldpea and til.

Conclusion and Suggestions

Considering the over-all agricultural scene, it may be mentioned that the district is mostly dependent on monsoon for cultivation. Heavy or scanty rainfall badly affects the agricultural production. In almost all the years the production of agriculture decreases in some parts of the district where no irrigation facilities are available. Hence it is suggested that more and more irrigation facilities are to be provided in the district.

It is revealed that the farmers are very much aware of the use of chemical fertilisers, but they are ignorant about the use of balanced fertilisers and the quantity in H. Y. V. programmes. So demonstrations and training programmes are to be conducted about the use of fertilisers.

As the demand for improved varieties of seeds is gradually increasing, the requirement must be supplied through seed sale centres.

Presently all the agricultural programmes are implemented through the block officials and all the responsibilities are vested in the Block Development Officer who is responsible for the failure or the success of the plan programmes. As he is overburdened, in practice the agricultural schemes/programmes are implemented by the A. E. O. and

V. A. W.s at the grass-root level. It seems the supervisory work is done by the B. D. O.. In order to develop agriculture the B. D. O. is to be relieved of other burdens except agriculture.

In the hill areas of the district, the practice of 'Podu cultivation' or 'shifting cultivation' is widely accepted by the tribals which affects badly the productivity and production. So steps should be taken to dissuade them from shifting cultivation and accept settled cultivation.

Recently for the purpose of decentralised planning, the District Planning Units have been set up in each district of the State. Under the district planning unit, a separate sub- committee namely, agricultural sub-committee is functioning in the district of Ganjam. It is hoped that this sub-committee will take steps to develop the productivity of agriculture by removing the lacuna in the formation and implementation of agricultural programmes.

Toning up Agriculture in Kotpad Block : A Case Study

B. Eswar Rao Patnaik

Dr. P. C. Mohapatro

Introduction

Agriculture continues to play a predominant role in the economic development of the State. The existence of wide diversities of physical, soil and rainfall conditions in different parts of the State necessitates micro study of the problems of development of agriculture in different districts and even in smaller regions like blocks. Such studies can help us to appreciate the deeper problems of development and enable us to frame a concrete set of solutions to a definite set of problems.

A. Background of the Study Area

The purpose of the present paper is to make an appraisal of some of the developmental programmes initiated by the Government of Orissa in Kotpad Block in recent times. Kotpad block is one of the best rice producing regions in Koraput district, situated on the southern part of Jeypore town. There is a greater concentration of Scheduled Castes and Scheduled Tribes in the Block. The ratio of S. C. to total population is 19.424%, while the ratio of S. T. to total population comes to 64.08% in the block. In contrast the percentage of S. C. and S. T. to total population of the district comes to 14.06 and 55.21 respectively in 1981.[1] The average size of population per household is staggeringly high, i. e. 7.3980.

Agriculture is the main stay of the economy of Kotpad. Agriculture accounts for 79% of the income of the people, while business and service sectors contribute 6% and 10% of the income of the people. Industries occupy a low area in the map of the economy and a meagre 5% of the income of the economy is accrued from industry.[2] This would give an evidence of the lack of the growth of the much needed non-agricultural avocations in the growth retarded economy of Kotpad.

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1. Souvenir : 18th All Orissa Economics Conference.
2. Sample survey conducted by authors with the help of B. Chandra Sekhar, a student-Investigator.

A glance at the infrastructural facilities available to the people of the region, is imperative as it enables us to appreciate whether there is percolation of the benefits of development or not. The economy of Kotpad is well served by a block office, one Post Office, one State Bank branch, a regulated market and a co-operative society, Kotpad block is inextricably linked with the State of Madhya Pradesh, by railway lines and National Highways. This renders the commercial and market prospects of the study area bright. There are gaps in the supply of social overhead capital, notably transport services and road works. It is distressing to glance at the inaccessibility and geographical isolation of backward villages like Prinji and Korlahandi, which do not have any access to metalled roads. These sampled villages are deprived of transport links with their respective panchayat and Block Offices as well as other developing villages.

B. Methodology

The present study is based on the sample survey of Kotpad Block conducted in the year 1987-88. The study is based on desk work as well as field work. Simple random, multi-stage sampling technique has been used for study purposes. Based on a 5% sampling of the villages in the block, the survey has covered 5 villages and 103 rural households by taking into account 20 randomly sampled households. The head of the household was approached by the authors with the help of a structured Questionaire on problems of agriculture. The field data is supplemented by official figures for diagnostic purposes. The sample survey is not free from limitations. It was based on memory based replies and human memory is not defect-proof. Nevertheless, the study may be useful for diagnostic purposes and policy related reasons.

Family farming rather than collective farming characterises the economy of Kotpad. The total cultivable land of the block comes to 33211.97 hectares. Out of this the area cultivated is 27248.63 hectares.[3]

The productivity of land is determined by many variables. The flow of a tributary of Indravati River named Damayanti along the region, the abundance of rains throughout the year and the alluvial and red nature of the soil, makes the economy of Kotpad ideally suited for growing food crops like paddy, ragi, wheat and cash crops like sugar cane, moong, bengalgram, soyabean, castor, groundnut and niger. The average size of land holding per cultivating household comes to 6.6 acres in sampled villages. The agricultural enterprise of the region is characterised by the presence of settled cutivation and the absence of the disastrous practice of shifting cultivation.

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3. Interview with the Officials of Block Office, Kotpad on 27. 6. 88.

Irrigation

Irrigation facilities, act as a catalystic agent in an agricultural area, by providing insurance against erratic and uncertain rain fall. Agricultural enterprise in Kotpad is rain-fed. Out of a total of 625.2 acres, only 10% of land is served by irrigation facilities. The villages of Korlahandi and Pirinji, are flood prone. The wheels of agricultural progress of the region are pushed backwards due to floods. To abate the ravages of flood, government can hasten the completion of the on-going projects like Indravati. More of dug wells may be initiated in the economy, with follow up action. The development oriented five year plans have initiated M. I. P.s. in several villages. But the tribal cultivators are unable to avail themselves of these facilities, as they are steeped in abysmal poverty. So, to give an upward thrust of the economy, the irrigation rates may be subsidised by policy makers.

Land Reforms

Up to 1987, 450 acres of land had been distributed among 210 backward families. Several loopholes were noted in the implementation of institutional reforms. These pertain to antiquated nature of land records and lack of supply of land records to the beneficiaries. Till to-day 10% of the sampled households are landless.

Seed subsidy programme is notable among the State-sponsored schemes. This has been introduced in the economy of Kotpad in the plan period. 6 cultivating households of Gumunda village have received from D. A. O., 30 Kgs. of improved strains of seeds of paddy and pesticides in the year 1987. The per acre yield of paddy has shot up by 7%. This goes only to confirm the view that the efficiency of the output enhancement strategy of the package programme is high.

The response of the cultivators in the villages Piringi and Korlah andi to green revolution is unimpressive. The crop yield for soyabean, could not exceed 2 qtls. per acre, inspite of free supply of the seeds. The fate of soyabean cultivation was sealed partly due to lack of market. So, the impact of green revolution is uneven among the different regions of the economy of Kotpad.

In order to make the package programme a success, the following measures may be adopted.

(i) The cultivating population is not able to secure scale-neutral inputs at the right time, i. e., during the sowing season. Hence, they switch on to the use of local seeds.

(ii) At present demonstration facilities are provided for a brief preiod. Scholars have opined that, demonstration facilities should be provided to the peasants on a perennial basis, for a longer period.[4]

4. Mohapatro, P. C., Economic Development of Tribal India

(iii) The frequency of visits of V. A. W.s to farmers' fields is not high.

(iv) Reasonable supply of water, fertilizers and quality seeds, especially chemically treated and hybridised seeds, are of crucial importance.[5] So endeavour has to be made to provide these facilities to farm population.

Credit Facilities :

Bulk of the farmers have little or no owned funds. Hence credit is needed for production and consumption purposes. The average annual credit requirement of a cultivating family in Kotpad block comes to Rs. 2510.14.

The S. B. I. occupies the pride of place among the institutional sources of lending for farmers in the study area. 47.8 per cent of the total loans made by farmers of Kotpad was supplied by the State Bank in 1987. Co-operative societies have catered to the credit needs of the farmers to the extent of 31.2 per cent. Agriculture, the age-old occupation of mankind is endeavoured to be renovated and revitalised by the regionally sponsored Rural Banks, which have supplied only 14% of the credit needs of the farmers in this block. The Koraput Panchabati Gramya Bank, which was opened on 13th November, 1976 has two outstanding merits : (i) close rapport with the population it serves, (ii) excellent customer service is rendered by it. Further additional 0.5% interest is payable by it on deposit.[6]

Among the non institutional sources of finance, first comes the Landlords, who have provided 5.455% of the credit needed by the peasantry community of Kotpad Block. Eventually, mention may be made of the Shylock-like money lenders, and relatives, who have supplied 5.455% and 0.216% of the total credit needed by the tribal and nontribal cultivators of the enonomy.

Of late, institutionalisation of credit facilities has grown in scope and content. Nevertheless, money lenders & relatives are dominating the rural scene even today. Money lenders lend money to the peasant in the form of paddy and the borrower has to return the loan in the form of paddy by 50% more than what they had borrowed from the lenders. Due to these impediments, the agricultural progress of the economy is halted.

The recovery of loans by farm population, is only 22% in respect of the State Bank.[7] 25% of cases of non-recovery of loans was ascribed to lack of follow-up action by the Bank, 30% of the cases of non-repayment of loan was due to natural hazards; 10% had

5. Bharat Ram : Agriculture in Private Sector by S. C. Jain., P. 49-50.

6. Kishore Ch. Padhy "Koraput Panchabati Gramya Bank" Performance and Prospects:— Vision—July—September 82, Page 21 – 25.

7. Interview of B. Chandra Sekhar with Bank employees.

their origin in factors like lack of supervision over the use of loan. Lastly 35% of cases of non-recovery of loan may be due to willful default.

A notable achievement of State Bank's lending to agriculture is the advance of loans to agriculture in terms of working capital, i. e., 35 Sprayers, 2 Pumpsets and dusters. Nevertheless, there are gaps in the supply of credit to different regions of the economy. The benefits of branch banks have not been accrued to the people in in-accessible regions, like Pirinji and Korlahandi. So, Banks should launch an action oriented programme, by which the benefits of branch expansion will percolate into distant villages. This will help converting "static credit into dynamic credit", so that at the end of the credit period there is an improvement in output and income, or in assets.

Technological Progress

Thechnological progress is the key to productivity increase in agriculture. Because "self accelerating growth in agriculture in a country like India is incompatible with static agriculture". The number of Diesel Pumps supplied by public authorities in selected villages of Kotpad block came to 9. Only 11 Pumps are being used by private persons. The number of tractors in use comes to 2, out of a total of 94 households. Till today, wooden plough, dharmuni, sickle and hand-axe continue to hold their sway in the economy. It follows that there has been no technological development in the block.

Agricultural Marketing

It is said benefits are likely to accrue from linking supply of farm requisites to farm credit and marketing, by increasing the amount which can be bought, ensuring better prices and quality, and making better provision for repayment. Currently a weekly market is held at Kotpad on every Tuesday, where buyers and sellers assemble together for sales and purchases. In addition, weekly market and biweekly markets are held in villages like Barasema and Marthahandi on every Sunday, Monday and Thursday.

The marketing prospects of the region are retarded by inadequacy of transport facilities including bus services. The existing market facilities available in the sampled villages are inadequate and hence the market is spatially limited. Backward villages like Pirinji and Korlahandi do not enjoy metalled roads and transport links, with the other marketing centres of the block. Hence the lack of development of market facilities and transport services is a constraint on the development of the region.

The working of I. R. D. P.

I. R. D. P. is notable among the government sponsored schemes, which has been introduced in the block in the year 1981. The focus of the beneficiary oriented programme,

was to lift up the target group with an annual income below Rs. 3,500/- per household. "The core of anti-poverty programme lies in endowment of income generating assets, on those who have little or none of these". Based on a 50:50 sharing by the Central and State Governments, the programme introduced in this tribal dominant block covers three areas : (a) Land improvement, (b) Milch animals and (c) Industrial services. 18 out of 103 sampled households were benefited by I. R. D. P. in Kotpad block. 11 families belong to S. T., 5 hail from S. C. and the rest of the 2 families belong to general caste category.

The total value of assistance provided to the target group in the study area comes to Rs. 22,260/- in the years 1987-88. Lion's share of the benefit (Rs. 10,480) was claimed by assistance under milch animals. A sum of Rs. 8,780 was provided to 5 backward families under land improvement schemes. Likewise, one low income family was covered under industrial services scheme, with an assistance of a sum of Rs. 3,000/- in the year 1987.

The progress achieved in respect of the Animal Husbandry Scheme, was not commensurate with the resources and energies devoted to it. 2 milch cows worth Rs. 3,520/- were provided to 2 families. Out of these, one cow died of Cholera, for want of veterinary care. Only one beneficiary had utilised the loan fruitfully, could maintain his family at the subsistence level and redeemed part of the loan made.

Dr. N. K. Rath rightly observes "the I. R. D. P. experience of giving cattle and other assets come too little." Similarly a farming family, which has received 7 goats from government reported that all the goats died of disease. The loan too was not cleared. The experience is no more thrilling, in respect of assistance in the form of 6 Buffaloes to 4 families. Inspite of the recovery of a fraction of loan, sizeable portion remains uncleared.

These schemes are intended to benefit the weaker sections but they in actuality serve the rural better off. Out of 9 families, only 4 families belonged to low income group. The rest of 5 families had an annual income above Rs 3,500/- per annum.

The only silver-lining in the situation was the notable success achieved by the land improvement scheme, under which 2 dugwells were installed for benefitting 2 families. Three farm families have received 3 Bullock Carts. The crop yield was reported to be improving and 600 rupees loan was recovered, out of a total loan of Rs. 4,600/-.

Eventually, one artisan family has received a sum of Rs. 3, 000/- under TRYSEM. One shop was opened with the loan and a worker was trained in carpentry. Tarlok Singh refers to these schemes, as relief measures rather than permanent solutions either for poverty or unemployment. In order to make a dent on poverty and accelerate the pace of development of rural areas, the focal points of plans should be skill formation and training of rural artisans in local skills.

Conclusion

Agriculture, like other production processes, is neither a single-person nor a single-point operation. Any farmer, how so 'ever hard working, cannot be an efficient producer, unless he is supported by backward and forward link-ages, manned by non-farmers, who are very much part of the system. Without such help, the farmer would be reduced to penury. He needs scientists to 'evolve improved seeds. 'He needs extension workers to serve as the links between the laboratory and land. In addition, he needs efficient marketing facilities and transport services. It is on the quality and availability of these multifarious services that efficiency and prosperity of the farmers depend.

Similarly, crop insurance measures which have been introduced in other blocks of the district have not been introduced in this tribal dominant block. These measures may go a long way in stabilising the income of the farmer in times of capricious monsoons. Agriculture till to day is a way of living and not a mode of business, as in the west. So, there can be shift in emphasis in the matter of cropping pattern from food-crops to commercial crops which will minimise the cropping imbalances of the economy.

In the near future, the economy of Kotpad is not likely to undergo a structural change from an agrarian economy to an industrial one and hence concerted action has to be done for relieving the excessive pressure of population of land, by creating non-agricultural avocations and productive enterprises like cottage industries and agro-based industries like khandasari. Then only the economy can realise the hope of our five year plans, namely, maximisation of "food, work opportunities and productivity".

Working of Cuttack Gramya Bank—A Study

Dr. R. K. Panda

Agriculture occupies an important place in the economy of Orissa. It provides employment to about 70 per cent of the work-force and contributes 60 per cent of the gross domestic product of the State. Yet agriculture in the State is very much underdeveloped. The predominance of small and marginal farmers in the agricultural sector and the vast stretches of unirrigated land are the twin bottlenecks in the agricultural development of the State. In such a situation majority of rural households adhere to cultivation as a way of living rather than a profitable business proposition. Singh has worked out the magnitude of poverty among rural cultivating households in different States by correlating the holding size with poverty-line income. According to his calculation, for Orissa, an average cultivating household must have the holding size of 1.73 hectares to cross over the poverty line income. But according to 1981 Agricultural census the average farm-size in the State comes to 1.59 hectares. This obviously speaks of prevalence of widespread poverty among majority of cultivating households in the State. Thus, poverty among the farmers and agricultural underdevelopment go hand in hand in the State. This calls for adequate external credit assistance to farmers particularly to marginal and small farmers (as they constitute predominant section of the rural community) for developing agriculture in the State.

It is no doubt that there has been significant development in the sphere of institutional credit to agriculture in the State after the nationalisation of 14 major commercial banks in the year 1989. Particularly to provide credit assistance to marginal and small farmers the Regional Rural Banks have been working since 1976. At the end of June 1988, 9 RRBs are operating in all the thirteen districts of the State with 791 branches. And some of these RRBs have completed more than a decade of their working. Hence it is now time to examine the working of these banks taking into account, their viability and the role they have played in accelerating the pace of agricultural development in the State through their credit financing.

In the light of above consideration the present study examines the working of the Cuttack Gramya Bank (the second largest Regional Rural Bank in the State from the point of view of branch expansion) between 1977 and 1987 with the following objectives :

Objectives

i. To study the purpose-wise deployment of credit of Cuttack Gramya Bank between 1977 & 1987.

ii. To examine the viability of the bank as a credit-financing agency.

Result and Discussion

Table-I shows the pattern of credit deployment of the Cuttack Gramya Bank towards different purposes between 1977 and 1987. As it is observed, out of the eleven years taken under study only in four years i. e. 1977, 1979, 1980 and 1981 the bank has provided higher percentage of credit towards crop loan than towards either agriculture-term-loan and allied activities or services. In all other years, the crop loan financing of the bank forms only a meagre percentage of its total credit deployment to different purposes. Particularly after 1980 there has been continuous decline in the percentage share of crop loan out of the total credit distributed by the bank for different purposes. On the contrary after 1980 credit financing of the bank towards services has continuously increased. Credit advanced by the bank towards agriculture-term-loan and allied activities has shown an uneven trend between 1977 and 1987.

Taking into account of the pooled data, the overall picture of the credit distribution of the bank for the eleven years (1977-1987) shows that among the sectors, the service sector comes out as the first choice of investment by the bank. Out of the total credit distributed 37.85 per cent has gone to services. Agriculture term loan and allied activities come as the second choice of credit investment by the bank. 31.62 per cent credit of the bank is allocated towards this purpose. Crop-loan financing forms the third choice of credit investment by the bank. Out of the total credit distributed, 25.67 per cent goes to crop loan financing.

From the above analysis it is to be inferred that the credit flow of the Cuttack Gramya Bank is more biased towards services than towards either crop loan or agriculture term-loan and allied activities. In a district like Cuttack where agriculture is the dominant sector and where marginal and small farmers dominate the agricultural scene, the crop loan requirement of farmers is very much great. In such a situation the bank's credit deployment pattern goes against the interest of agriculture.

The credit deployment pattern of the Cuttack Gramya Bank going contrary to agricultural development is further highlighted when a comparative analysis of the flow of credit of the bank for schematic vis-a-vis non-schematic purposes is analysed. It is seen that now-a-days the banks are increasingly involved in financing a number of government directed schemes. As a result the traditional sectors like agriculture are neglected due to

lack of adequate time and resources at the disposal of the banks. Many scholars have observed that because of too much involvement in financing a number of directed schemes, the attention of commercial banks including RRBs towards agricultural financing is not only vitiated but also results in increasing default and mounting overdues due to poor recovery from the beneficiaries of different schematic programmes.

In this light, a perusal of the credit distribution of the Cuttack Gramya Bank between schematic and non-schematic purposes reveals a continuous decline in the percentage of its credit towards the latter and increase towards the former between 1985 and 1987. The increasing credit investment of the bank towards schematic purposes shows its apathy towards agricultural financing.

One important aspect of credit financing of an institutional agency is that it must be financially at a sound position. Unless an institutional agency is financially sound it cannot be able to cater to the credit needs of its clients. In this context a number of studies have shown that RRBs in our country suffer from weak financial disposition. They do not have adequate resources at their disposal and look upon the sponsor bank, the State Government etc. to get funds. Besides poor recovery of the loan has further eroded the profitability and viability of these banks. In this context, in the present study an attempt is made to have some knowledge about the viability of the Cuttack Gramya Bank taking into account its recovery and profit position.

Table-3 shows the credit recovery of the Cuttack Gramya Bank between 1983-1987. It is observed that the percentage of recovery to the total loan demand of the bank has continuously declined from 49.89 per cent in the year 1983 to 14.02 per cent in the year 1986. In the year 1987, there has been an improvement in the recovery of credit of the bank to the extent of 37.66 per cent of the loan demand. In other words, for the years taken under study it is revealed that the bank is faced with the problem of mounting overdues. An overall picture of overdues position of the bank between the years 1983-1987 shows that nearly 73 per cent of its loan demand remains as overdues.

With regard to profit position it is observed that (Table 4) there has been continuous erosion of net banking profit of the bank from 1983 to 1987. Particularly after 1985 the bank has been incurring increasing negative net profit uptill 1987.

Conclusion

From the foregoing analysis the following conclusions are emerged :

1. Credit deployment of the bank is biased more towards non-agricultural purposes than towards agricultural purposes, particularly crop loan purposes.

2. Loans for schematic purposes form a major proportion of credit financing of the bank.

3. Recovery of loan of the bank is very much disappointing. The problem of overdues is quite acute with the bank.

4. The bank is operating at a declining net banking profit. After 1985 the net banking profit has been increasingly negative.

Policy Implications

1. Cuttack district being predominantly an agricultural district, the Cuttack Gramya Bank should formulate its credit policy mostly to cater to the needs of agriculture. As small and marginal farmers constitute a sizeable section of the rural community of the district and their crop loan requirement is very great the bank should give first priority to crop loan financing in its credit policy.

2. Further after credit, follow-up action should be strengthened by the bank to improve its loan recovery position.

3. As the bank is incurring increasing losses year after year steps should be taken to invest bank's resources in better income generating schemes so that it (the bank) can meet its increasing liabilities due to rise in cost of deposits, refinance and borrowing.

Table—1

Purpose-wise distribution of outstanding credit by the Cuttack Gramya Bank between 1977 and 1987.

(Rs. in lakhs)

Year	Total Amount of outstanding credit	Crop loan	Agriculture Term loan & Allied Activities	Service	Others
1977	30.79 (100)	14.43 (46.86)	2.47 (8.02)	13.44 (43.64)	0.45 (1.48)
1978	131.53 (100)	23.12 (17.58)	46.33 (35.22)	58.65 (44.69)	3.40 (2.61)
1979	303.50 (100)	147.84 (48.71)	60.00 (19.77)	83.56 (27.53)	12.10 (3.99)
1980	522.23 (100)	256.23 (50.78)	113.84 (21.80)	124.39 (23.82)	18.87 (3.60)
1981	804.50 (100)	287.64 (35.75)	240.51 (29.89)	237.32 (29.50)	39.03 (4.86)
1982	1311.84 (100)	396.11 (30.19)	440.32 (33.57)	403.80 (30.78)	71.61 (5.46)
1983	1971.80 (100)	512.38 (25.99)	667.31 (33.84)	688.73 (34.93)	103.38 (5.24)
1984	2465.19 (100)	665.94 (27.00)	836.08 (33.93)	842.40 (34.17)	120.76 (4.91)
1985	2904.03 (100)	785.45 (27.04)	932.52 (32.11)	1045.36 (36.00)	140.70 (4.85)
1986	3429.60 (100)	766.30 (22.34)	1064.27 (31.03)	1436.39 (41.88)	162.64 (4.75)
1987	3915.12 (100)	711.79 (18.18)	1222.55 (32.22)	1800.94 (46.00)	179.84 (4.60)
Pooled	1617.28 (100)	415.20 (25.67)	511.47 (31.62)	612.27 (37.85)	78.34 (4.86)

Table—2

Distribution of Outstanding Credit of the Cuttack Gramya Bank for Schematic and non-Schematic purposes between 1985-1987.

(Amount in lakhs)

Year	Amount of credit for Schematic purpose	Amount of credit for non-Schematic purpose	Total amount
1985	643.59 (22.16)	2260.44 (77.84)	2904.03 (100)
1986	1154.55 (33.69)	2275.05 (66.31)	3429.60 (100)
1987	1890.91 (46.13)	2024.21 (53.87)	3915.12 (100)

Table—3

Recovery of loans of the Cuttack Gramya Bank between 1983 and 1987.

(Amount in lakhs)

Year	Demand Amount	Recovery Amount	Overdue Amount
1983	1012.42 (100)	505.17 (49.89)	507.25 (50.11)
1984	1324.82 (100)	276.74 (20.88)	1048.08 (79.12)
1985	1748.66 (100)	247.93 (14.17)	1500.73 (85.83)
1986	2083.47 (100)	292.30 (14.02)	1791.17 (85.98)
1987	2943.14 (100)	1108.65 (37.66)	1834.49 (62.34)
Pooled	1822.50 (100)	486.15 (26.67)	1336.35 (73.33)

Table—4

Gross and Net Profit of the Cuttack Gramya Bank between 1983 and 1987.

(Amount in lakhs)

Year	Gross Banking Profit	Percentage of total working expenses	Net Profit
1983	4.12	3.89	0 23
1984	3.74	3.62	0.1
1985	3.41	4.02	(—) 0.61
1986	3.76	4.44	(—) 0.68
1987	3.62	4.44	(—) 0.82

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Orissa Agriculture In the Age of Biotechnology

Sri Naba Krushna Sahu, I.E.S

If Green Revolution (GR) symbolises a marked change in the characteristic of Indian Agriculture in the field of intensive use .of 'HYV-Fertiliser-Irrigation Technology: Orissa lags behind by roughly twelve to fourteen years. From the given table one can mark that Orissa reached the all-India level in the field of Irrigation after 12 years. Per hectare fertiliser consumption level reached the all-India level after 14 years, and same in the case if we compare the yield of rice,

Table

:Green Revolution : Position of Orissa vis-a-vis. India.

	India	Reference Year	Orissa	Reference Year
Extent of Irrigation (p. c.)	22.2	1968-69	21 0	1980-81
Fertiliser consumption per-hectare (k. g.)	13.1	1970-71	13.7	1981-85
Yield of rice per hectare (k. g.)	1112	1971-72*	1112	1985-86*

* Triennial Ending.

Source : Calculated from different issues of "Indian Agriculture in Brief" Deptt. of Agriculture and Co-operation. Ministry of agriculture, New Delhi.

Now India is preparing itself to reap the benefits of Bio-technology (BT). It is not only difficult to predict the exact mode of agricultural operation in the age of BT, but it is also difficult to say when the Indian farmers as well as the farmers of Orissa would enter this age. Orissa's lagging behind the rest of the States in GR era was due to the very nature of this technology, but BT is quite different. It is capable of spreading in all agro-climatical regions—with irrigation and without irrigation. Thus, for the farmers of Orissa very little scope is left for adjustment. The Seventh Five Year Plan declares that "by the close of this century the process of transformation implicit in the prospective plan would take agriculture to a level where its uses be far more science-based and industry-linked than it is now. Emerging areas like Bio-technology, Genetic engineering, Photosynthesis, Tissue culture, Bio-Insecticides and Pheromones would be the new fields of research for

aiding the growth of agricultural productivity" (Govt. of India, 1985, page—51, volume—I, emphasis Mine). But the answer to hunger and malnutrition is not that simple. The socio-economic forces that are working at the national and international level to give the Indian agriculture in general and Orissa's agriculture in particular a new look and the problems attached with it are the subject matter of this paper.

Nature

The main characteristics of the BT revolution are as follows : Firstly, BT is a recent phenomenon. The basic difference between GR technology and BT is that the former is the outcome of the scientific crossing of two different breeds to get an improved breed, whereas the latter is the outcome of the scientific manipulation of seeds and other parts of plants at molecular and cellular level. BT would not only affect the plant kingdom but also it would change the animal products, environment, energy and others. Under-developed countries (UDCs) are the main gainers of the GR, but the gain from the BT revolution would be for all countries, both developed and under-developed. GR technology displaced none of the crops but BT is capable of displacing some of the crops. Secondly, BT is highly knowledge and skill intensive rather than capital intensive. Thirdly, private sector and Multinational Corporations (MNCs) are more active in bringing about the BT revolution to the field when, on the other hand, the national and international research organisations are becoming less and less active in the field of agricultural research. Fourthly, the BT revolution is an international revolution in the true sense of term. The distance between developed and under-developed countries is narrowing down and this process is accelerating with the advance of information technology.

Problems

1. The most crucial problem that stands on the way of development of BT in UDCs and their transfer from outside is the increasing commercialization and privatization of BT. The evils of privatization would manifest itself in different ways ; according to Kenney and Buttel "This privatization will occur in three distinct ways. First, plant varieties will be protected through legal means such as plant variety protection laws or patents; second, many of the techniques of plant breeding and the tools of genetic engineering including genes themselves, will be patented. The third and perhaps most ominous implication is the growing prevalence of trade secrecy, which will likely erode free flow of scientific information among scientists and laboratories in developed countries to those in developing countries. As both germplasm and scientific information become increasingly valuable, their flow will be interrupted. Increasingly, these items may be accessible only through purchase by payment of royalties." (Kenney and Buttel, 1985, Page.68). As a result of privatization, there is a massive flow of brains from universities to private organisations.

2. It is claimed that BT would solve food problem of every country if judiciously utilised. But, with the success of BT in certain fields and failure in certain others, the food production of India as well as Orissa might become Highly Unbalanced. The first type of imbalance would take place due to uneven success of BT in the field of animal science vis-a-vis plant science. Recombinant DNA, Cynogenic techniques for preservation of embryos and monoclonal antibodies are being used to develop effective vaccines and diognostic tests. Vaccines for the foot and mouth diseases are becoming a reality and this combined with increasing use of animal growth hormons would result in high profit for those persons who go for animal husbandry. On the other hand, the impact of BT on plant science is not that effective and this would lead to unbalanced food production. Another type of imbalance in food front might arise as success of BT is more easy in the lower order plants than that of higher order plants. Success in the root products is more than that of cereals like rice and wheat.

3. Another high claim made is that, the BT is scale neutral and as a result the gain from it will be distributed evenly across different sections of the society. But a close observation would reveal that BT research is neither scale neutral nor the technique at the field level. BT needs more investment in inputs and more inputs of information, it would help those farmers who are rich and whose farm size is above critical size. Yoo-chi Lu observes that "Commercialization of new technology would further stimulate expansion of farm size and accelerate resource concentration in agriculture for two reasons : (a) the biasedness of technology adoption and (b) the downward slope of the average cost curve" (Lu, 1985 Page 1158). This means large farmers would be the gainer vis-a-vis small farmers—at least in the short run. Fourthly, the new varieties of seeds and plants that are developed by BT are reproductively unstable, so that the farmer can not save his seeds and plants into the next growing season. This means that the farmers would be forced to come to the market place every year and the worst affected would be the small farmers.

4. Scientists and policy-makers are more enthusiastic about BT, because they think it would not affect environment and natural resource balance adversely. Office of Technology Assessment in U. S. A. and other Social Scientists go into this problem and come out with a mixed feeling. Quoting Feldberg in an article Yoo-Chi Lu wrote, "However, not all new technologies are environmentally enhancing. New tillage technologies that reduce erosion could threaten wild-life because of increasing dangers from use of agricultural chemicals. For example, genetically engineered new herbicide-resistant varieties of crops will allow farmers to employ much higher levels of herbicides that can presently be used in weed control (Lu, 1985, Page-1160). Secondly, the environment and ecology might face difficulties due to the displacement of certain varieties of plants and animals and introduction of certain new types of plants and animals.

Political Economy

The farmers of Orissa have no choice but to succumb to the International division of labour. The indications are positive. The recently passed seed import policy of Government of India combined with the FICCI's support for joining Paris Convention is a definite pointer towards this (Economic Times, Dec. 5, 1988). The new seeds policy which comes into effect on October 1, last year basically inaugurated the next phase of structural dependence of Indian Agriculture on trans-national corporations ..... apart from the traditional dependence of these agrarian classes on the monsoon, now their fortunes will also be decided by fluctuating exchange rates, imported proprietary pesticides, monopoly pricing of hybrid seeds and TNC control of the 'parent lines' of these seeds. The rich peasant and capitalist land-lords will not grow their own seeds—most of them did not, any way—but will have one more middleman (the TNC) in the labyninth of agents". (EPW, 1989, Page-5). The Indian Government is well aware of these problems and has set up National Biotechnology Board (NBTB) in 1983 to look after these problems. NBTB has chosen the priorities and worked out the action plans both for short run and long run (NBTB, 1983). But the "Long Term Plan in Biotechnology in India" as drawn by the NBTB is more suitable for the fulfilment of the scientific aspiration of the country rather than the socio-economic requirements. The pressure of international capital combined with the national capital over the farmers are so over-whelming that, little escape root is left.

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Prospect of Rubber Cultivation in Orissa.

Sri Surendra Nath Behera

Rubber is a commercial crop and a unique raw material which is vital and indispensable for the production of a wide array of strategic, industrial, agricultural and household goods. The world today uses as many as 50,000 different rubber products.

There are two sources of rubber supply : (1) Natural rubber (2) Synthetic rubber. Natural rubber is derived from the milky juice or latex extracted from the bark of rubber trees. Synthetic rubbers are produced mainly from Petrochemical feedstocks. Although synthetic rubber accounts for about 68 per cent of the total rubber used in the world today, natural rubber is gaining importance because it is a renewable resource non-polluting in its production, cheaper, qualitative and can be progressively modified through chemical means. Natural rubber now contributes 78% of the total domestic use in India. There has been a growing demand for rubber because of rapid industrialisation and India is now spending Rs. 45 crores in foreign exchange for import of natural rubber. The scope for stepping up rubber production is vast and needs urgent attention. Since independence the area under rubber cultivation in India has increased from 65,000 hectares to 3,84,000 hectares, the national average yield per hectare per year from 300 kg. to 936 kg and the production from 15,000 tonnes to 2.20 lakh tonnes. Countries which have gained importance in plantation of natural rubber are Malaysia, Indonesia, Thailand, India, China, Nigeria, Brazil, Mexico etc.

There are broadly two areas of rubber cultivation in India. (1) Traditional areas, (2) Non-Traditional areas. Traditionally rubber has been grown in the hinterlands of the south-west coast, mainly in Kerala and adjoining districts of Tamilnadu and Karnataka Kerala, the highest rubber producing State, produces 92.07%. of total producton in India. Owing to extreme pressure on land, the scope for expansion of cultivation in traditional areas is limited and hence intensive efforts have been made over the last two decades to indentify non-traditional areas which includes Orissa, Madhya Pradesh, Assam, Andhra Pradesh, West Bengal etc., providing agroclimatic conditions for economic rubber cultivation.

Rubbar plantation and production have attained high levels of sophistication. The immaturity period of rubber is about 7 years. The direct agricultural cost of land preparation, planting and maintenance up to maturity at 1987-88 rates can be estimated to be an amount of Rs. 20,000 to Rs. 22,000 per hectare in the non-traditional areas like

Orissa. It excludes the cost of engineering infrastructure and management overheads. Well managed rubber plantations in traditional areas yield an average of 1,500 kg of dry rubber per hectare per year. Economically productive period is 25 years starting from the eighth year of planting. But a good yield in non-traditional areas can be on an average 1,200 kg. per hectare per year, which is less than the average yield per hectare in traditional areas. At the prevailing steady price of Rs. 17.00 per kg. the gross income will be Rs. 20,400 per hectare. The net income before tax can then be Rs. 7,000 to Rs. 8,000 per hectare.

The Rubber Board of India has estimated the yearwise cost of rubber plantation in traditional and non-traditional areas as given below.

Table

Costs of Rubber Plantation in the Immaturity period (in Rs.)

Rubber Plantation/maintenance Year	In Traditional areas	In Non-traditional areas
1st year (Plantation)	10,400	7,600
2nd year (Maintenance)	4,200	3,200
3rd year (—do—)	3,400	2,500
4th year (—do—)	2,800	1,900
5th year (—do—)	2,500	1,300
6th year (—do—)	2,300	1,200
7th year (—do—)	2,100	1,100
Total	27,700	18,800

Source : Rubber Board Zonal Office, Bhubaneswar.

It is evident from above Tablethat the cost of maintenance is declining in the different years of the immaturity period and the cost of plantation and maintenance in traditional areas is higher than the non-traditional areas.

Economic and social benefits of rubber plantation can be summed up as the following :

(1) It enables productive and economic utilisation of cultivable fallows and underutilized lands.

(2) It generates rural employment opportunities at the rate of 0.7 person per hectare.

(3) Provides viable alternative to shifting cultivation (Jhumming)

(4) Affords soil conservation.

(5) Brings about environmental improvement.

(6) Opens up avenues for new rubber based industrial ventures.

(7) It supplies timber. The resale value of the old trees cut down after 32 year cycle can be additional terminal income. Rubber timber is easily degradable soft wood, but by easy chemical treatment it can be converted into light, hard wood fit for furniture, light construction work, packing cases etc.

(8) Rubber seeds are oil bearing. The oil is of non-edible type largely used for soap making and other industries. The oil-cake serves as a good cattle or pig feed.

(9) Another by-product of rubber plantations is honey obtained through bee-keeping.

(10) Adds revenue to the public exchequer.

(11) Conserves foreign exchange resources.

Among the States in non-traditional regions Orissa possesses vast potentiality for successful rubber cultivation. The surveys so far have revealed that island regions of Mayurbhanj, Balasore, Cuttack, Puri, Ganjam and Dhenka nal districts have agro-climatic conditions present which are suitable for successful growth of rubber. Upland areas having deep, well drained soils could be selected for rubber plantation. Fallow lands or wastelands or degraded or irregular forests are lying in extensive areas. The annual rainfall in the above areas generally varies from 1400 mm to 1800 mm which is inadequate for growth of rubber plantations, since rubber is a rainfed commercial crop. But since it is distributed over different seasons, it is favourable for rubber cultivation. Drier climate of Orissa as compared to other rubber growing areas in India minimises the risks of fungal diseases to rubber. Since coastal Orissa is known to experience typhoons, cyclones and hailstorms young plants in nurseries are easily susceptible to heavy damages and hence, it is imperative that rubber plantations are raised only as far inland and away from the likely paths of strong and cyclonic winds as is feasible.

It is reported that rubber had been planted in about 6 hectares near Baripada as long ago as 60 years. The Rubber Board observed that the trees though badly neglected had comparable growth with that of traditional rubber growing areas. New trial plantations of rubber were established by the Soil Conservation Department of the State Government in 1966-67 at Aiginia near Bhubaneswar, at Nilagiri in Balasore district and at Chhenadhua near Baripada. Trial Plantation at Nilagiri failed due to poor site selection. These could not be carried on subsequently owing to lack of maintenance. However about 170 tall and healthy trees without any signs of disease at Chhenadhua are indicative of potential growth of rubber in Orissa.

Cost of production of rubber in Orissa could be relatively low in view of good availability of land, infrastructural facilities and reasonable labour cost etc. In view of the proximity to Calcutta which is the second biggest consuming centre in the country, rubber produced in Orissa can enjoy a better market than rubber-produced in the traditional producing areas.

The Government of Orissa has already seized the excellent potential for development of rubber plantation in Orissa and has accordingly adopted a policy resolution for its allround exploitation. Three public sector corporations, namely, Orissa Forest Corporation Ltd, Orissa Plantation Development Corporation Ltd., and Similipahar Development Corporation Ltd. have decided to develop rubber plantations in 1000 hectares each. Preliminary steps have been taken in phase-wise manner. Orissa Forest Corporation Ltd. has suceeded in planting in about 70 hectares during 1986 and 1987. A number of local private entrepreneurs have also come forward and started rubber planting on a small scale. To promote rubber cultivation and production in suitable areas in Eastern India, the Rubber Board of India working under the Ministry of Commerce, Govt. of India, has established a zonal office at Bhubaneswar to look into the production aspect, a Regional Nursery at Khandagiri near Bhubaneswar and a Field office each at Dhenkanal and Berhampur. To promote extensive research, a Regional Research Centre at Kamakhyanagar in Dhenkanal district has been set up, where there is a big plantation. This Research Centre is one among 14 Research Stations in India. Steps are being taken by the Rubber Board, India, with its head office at Kottayam, Kerala State, to give priority to local Oriya people in different fields, starting from field workers to Research officers and Agronomists. The Board has recruited the first Oriya Agronomist last year as an encouraging step.

Provisions have been made for various Technical and Financial Support to promote rubber plantation and replantation. The Rubber Board is implementing an Integrated Scheme from 1980-81. Under this scheme a package of assistance and incentives is granted.

If all these facilities are availed of, the prospect of rubber cultivation will be bright in Orissa.

Summary

Aricultural Progress of Orissa

Shipra Sarkar

The present paper is an attempt to throw some light on the agricultural progress of the State of Orissa, the association of area under the crops with their production, and the relationship between production of the crops and fertilizer consumption. The study based on secondary data for the period from 1979-80 to 1982-83 and has used Bank Correlation method to study the relationship between the area under crops and its production as also between fertilizer consumption and production of the crops. The main findings of the study are as follows

(a) Area under cereals declined after 1980-81, while area under pulses declined only in 1982-83. Area under groundnut and sesamum decreased in 1980-81, (b) production of cereals increased in all the years under study, (c) where as production of pulses decreased in 1981-82, production of castor seed and linseed declined in 1982-83, (d) Fertilizer consumption increased in all the years under observation and (e) There is no association betweenfertilizer consumption and production of cereals, pulses, castor seed, rapeseed, mustard and linseed etc.

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Debt Crisis in Developing Countries

Debt Crisis in Developing Countries : Keynote Address

Dr. K. M. Patnaik

Features of the Debt Problem

The debt of the U. S. government at the end of September, 1988 was 2.6 trillion * (or, 2.6 lakh crores) dollars . It is the biggest of the world at the present time. Half of this amonat is $ 1.3 trillion and this is the estimate of the total debt of the Third World by the end of 1988. The external debt of the developing countries amounts to $ 1.3 lakh crores and at this figure it is one-half of the combined GNP of these countries. The highly indebted middle .income countries of the Third World accounted for a debt of 5.3 thousand crores of dollars or 40 per cent of the total debt. The world had never in the past witnessed such huge magnitudes of debt. The indebted developing countries have to pay huge amounts every year by way of interest payments, which adversely affects their balance of payment position and capacity to invest in the domestic sphere to push up their rates of economic growth. The resource transfers that indebted countries have to undertake to service their debts are too heavy, in relation to their GNP and exports, to be maintained year after year. This can be illustrated by a few examples. Interest payments on external debt of Argentina constituted 55 per cent of its exports in 1983, 51 per cent in 1985 and 46 per cent in 1986. The corresponding percentages for Brazil were 42 per cent in 1983, 38 % in 1985 and 29 per cent in 1986. In the case of Mexico the relevant percentage is a little more than one-third of its exports. This ratio for Chile has come down from 42 per cent in 1985 to 33 per cent in 1986. In India, this debt-service ratio (i.e. the ratio of total debt service payments to total gross current receipts, i. e. exports plus gross invisibles) was estimated at around 27 per cent in 1987-88. In view of the high level of debt servicing by debtor countries the international financial institutions are becoming less relevant and effective.

Two interesting features of the outstanding foreign debt of the developing countries are worth noting. First, the rate of interest charged on loans to developing countries is variable. Debtors are always unsure about how much they would be called upon to pay in any given year. Interest rates are pushed up by leading countries, so that inflation and other problems faced by them are passed on effectively to debtor countries. This is clear from the fact that real interest rates that averaged 0.7 per cent during 1973-80 increased to 6.7 per cent in 1980-85. [1] Second, there is every reason to believe that the debt has been fully repaid. If we add to this debt any reasonable fixed interest rate,

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* One billion=One bundred crores, One trillion=One lakh crores.

1. Arjun K. Sen Gupta. "Remedy for Debt overhang", Mainstream, Annual 1988, p.49.

say six per cent, the debt incurred and the interest charges at this fixed rate have been fully cleared. In 1980, the debt disbursed and outstanding from U. S. banks stood at $ 429.0 billion. Between 1980 and 1986, Third World countries repaid $ 658 billion. This total amount repaid by 1986 was 53 per cent more than the outstanding debt in 1980. Yet, in 1986, the amount outstanding became $ 775 billion. As a consequence, the debtor countries have now become net exporters of capital to the creditor countries. From Latin Amreica alone there was net transfer of $ 125 billion of capital during 1980-86. Even Africa had to pay $ 14 billion during the same period. In spite of this, the outstanding amount of debt of Africa increased from $ 26. 3 billion to $ 40.5 billion.

The connection between this debt trap and the deprivation of the people is simple to understand. If a large part of the budget is devoted to debt-servicing, the resources available for domestic programmes of development would become smaller. Austerity measures taken at the behest of the IMF to cut down social benefits enjoyed by the people results only in their greater degradation. If a substantial portion of the export earnings goes away towards debt-servicing, the capacity to import necessary goods to speed up the process of development becomes severely limited. As a result, economic hardship not only engulfs the present but also the future.

Causes of the Debt Crisis

The causes responsible for the debt crisis may now be analysed. The oil-importing developing countries were hit hard when the international price of oil first went up four-fold during 1973-74 and again when it doubled in 1979. The hike in the price of oil resulted in a distressing turn in the balance of payments of these countries. The sharp rise in the oil prices brought about a recession in the industrial activity in the OECD (Organisation for Economic Co-operation and Development, formed in 1961) countries. As a result of this recession, the exports of the developing economies declined considerably, aggravating their balance of payment deficits. It is in this situation that large-scale debts were incurred by the oil-importing developing countries.

The oil-price hike at the same time enriched members of OPEC (Organisation of Petroleum Exporting Countries). Since their absorptive capacity was limited and as they did not have their own financial network, the OPEC members placed the huge amounts of funds received in the banks of OECD countries. These banks, flush with funds, began to seek opportunities for investment of the same in the newly industrialising countries like Brazil, Mexico, Argentina, South Korea, Chile, Yugoslovia, Phillipines and the like. The borrowing countries of Latin America have incurred these debts to a large extent on account of lack of discipline in their fiscal policies, as is clear from their astronomical budgetary deficits with rates of inflation running to three-digit figures year after year. Therefore, "these countries clearly overborrowed or the banks overlent". As a consequence, the lending banks were caught badly, with major clients unable to meet their

repayment obligations. Moreover, no one anticipated that during the period 1980-82 there would be drastic changes in policy in the industrial countries like tightening of monetary policies, increase in interest rates and contraction of demand resulting in recessionary trends. These changes worsened the position of the debtor countries. High interest rates charged pushed up their burden of debt-servicing. It has been estimated that each one per cent increase in interest rate adds about 4 billion or 40 crores dollars to the gross debt repayments of the developing countries. No wonder that the burden of debt was felt in 1982 when most of the developing countries, especially the Latin American countries, whose loans matured were unable to meet their debt services. Debt servicing burden went up from 11 billion in 1971 to 112 billion in 1982 and 85 per cent of the debt servicing in 1982 was for private interest and redemption payments and only 15 per cent was for servicing official development financing. This sudden and unbearable increase in debt servicing and the inability of the Latin American countries to meet their obligations in this regard in 1982 brought the international debt crisis into limelight.

External indebtedness in this context includes government debt, private debt, short-term debt (grade credit) and obligations to the IMF. IMF credit forms a small proportion of the outstanding debt of the developing countries. Tight monetary policy followed by the industrial countries in the eighties pushed up the debt overhang to around $ 500 billion by the end of 1981, or fifty thousand crore dollars. The outstanding debt of the oil-importing developing countries went up to $ 787 billion in 1983 which roughly amounted to 155.4 per cent of their total exports The situation was worst in Latin America where the external debt represented 300 per cent of her exports. Brazil's foreign debt is the largest in Latin America and it stood at around $ 120 billion in June 1988.

An important cause of the debt overhang is that private financial flows have been much larger and have overtaken official flows. Disbursements of funds from official and private sources clearly show this [2]. In 1978, the total disbursement was $ 76 billion; official sources contributed $ 21.2 billion and private sources $ 55.1 billion. In 1979, the total disbursement was $ 76.8 billion; official sources contributed $ 16.9 billion and private sources $ 59.9 billion. In 1980 and 1981, disbursements were estimated to be of the order of $ 94 billion and $ 113 billion respectively and private sources shared three-fourths of th e same. It follows from these data that nearly three-fourths of the credit comes from private sources and the rest from official sources. This underlines the fact that development financing has been relegated to the background as a means of transferring resources from the developed countries to the less developed ones. The marked trend towards privatization of capital flows has made the position of the low-income countries very difficult. As a corollary of this trend, the debtor countries, paradoxically enough, have now become net exporters of capital to the creditor countries. This net flow of funds from the

2. S. V. Bokil, *Commercial Borrowings*, The Economic Times, August 5, 1983.

World to the developing countries in 1984 was $ 12.5 billion. In 1985, the outflow of funds from the developing countries to the advanced countries totalled $ 67 billion as against a flow of credits, investments and aid from the latter countries of around $ 36 billion. The total debt servicing payments by all developing countries had increased to $ 123.4 billion in 1987. Ironic as it may seem, heavily indebted nations transferred net resources to the developed world to the tune of some $ 130 billion in the last five years.[3]

Thus the oil-price hike of the seventies and early eighties aggravated the balance of payments difficulties of these countries forcing them to borrow. They were also encouraged to borrow on account of the low or negative real interest rates of the seventies and without observing discipline in their fiscal policies. This euphoria of easy borrowing turned into an unbearable shock in 1982 on account of the high real interest rates of the early eighties which suddenly raised the cost of servicing the outstanding debt in many cases. These causes of the debt crisis have been accepted also by the economic advisers of the U. S. President. But they have added two more factors to this list of causes. These are as follows :

(a) "A common cause of debt problems has been the use to which the loan proceeds were put in some countries. In some cases, poor investment projects simply failed to pay off. Some of these projects, such as the building of minor roads, had low expected pay-offs at the time the investment was undertaken. Others were initially promising projects that ultimately never yielded the expected return. In many cases. consumption rather than investment was the destination of the funds."

(b) Another cause of the debt problem "was the further deterioration of economic conditions within these countries. Barriers to trade and financial transactions, price controls and fixed exchange rates coupled with high domestic inflation rates, high marginal tax rates, and the nationalisation of private industry handicapped these countries as they entered the difficult passage of the eighties".

Role of IMF in Solving the Debt Crisis

Initially the IMF treated the debt crisis as a liquidity problem and tried to resolve it by rescheduling the debts, stretching them out over longer periods and thereby reducing the annual cash-flow requirements. This was followed by enforcing austerity economic programmes overseen by the Fund. Austerity programmes enforced by the latter refer to a disciplined fiscal & monetary policy with credit squeeze, cut in public expenditure, balanced budgets, abolition of subsidies, and the inevitable devaluation of currency. These are the standard prescriptions made and imposed on any situation of this type by the IMF.

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3. Charan Wadhva, *Fund-Bank Meeting*, The Economic Times, November 14, 1988.

This procedure was followed by it in the case of Latin American countries. It sanctioned fairly large credit limits to these countries in difficulty by stipulating conditions which were intended to help them to put their external payments back to equilibrium gradually. In this process, the countries concerned had to undergo sacrifices on account of reduced imports which adversely affected their growth process. For a while, the crisis management by the IMF seemed to work. But it did not provide any real remedy for the situation faced. The steps taken for rescheduling enabled banks to lend money to debtors to help them meet a part of the accumulating and rising interest charges, and amount lent was added to the principal. This increased the debt overhang. Bill Bradley, U. S. Democratic Senator has remarked, "IMF has served to finance debt payments and not stimulate economic growth with the result that living standards have sunk and capital flight has continued unabated".

Baker Plan

The Baker Plan announced by the U. S. Treasury Secretary, James Baker, in 1985 aimed at attacking the disease rather than some of the symptoms of the problem. It suggested additional financing to these countries to support growth-oriented adjustment programmes. James Baker felt that it was necessary to boost the capacity to pay of the indebted countries by ensuring their increased output growth. For this, he suggested a moderate in crease in new lending of 2.5 per cent a year over the banks' current exposure. But his proposal received luke-warm reception from the banks. The market did not believe that the modest growth in output and the consequent increase in exports would generate enough income to fully service existing debt. As a result, there was very little additional lending. The total debt of developing countries reached $ 795 billion in 1986 and that of 17 highly indebted middle income countries (mostly in Latin America) $ 382 billion. During the period of the previous three years, these 17 countries had received disbursements of new credits totalling U. S. $ 75.7 billion but their debt service payments totalled $ 148.7 billion thereby resulting in a negative transfer of $ 73 billion.

Fund-Bank Annual Meeting, 1988

An important item discussed in the annual meeting of the IMF and World Bank held in West Berlin in 1988 was the ways and means of reducing the burden of the huge debt of the Third World to the creditor developed countries. Two initiatives were announced in this matter in the said meeting. West Germany annouced a plan of debt relief which would benefit 34 low income countries of Africa with a total debt of $ 62 billion. These countries could benefit upto $ 500 million a year in debt relief. The West Germany offer is a small gesture and is very inadequate to solve the huge debt problem of Africa.

The Finance Minister of Japan announced a scheme of debt relief applicable to middle income indebted countries of Latin America. Japan is prepared to make resources available out of its own surpluses by recycling the same to such middle income indebted countries which implement the structural adjustment programmes prescribed by the Fund. The details of the scheme regarding the amount of resources to be made available and the procedure to be followed have not yet been announced. Japan has been cautious in announcing a debt relief which is to be within the existing framework of debt relief stralegy so as not among the U. S.

This initiative of Japan was not liked by Nicholas Brady, U. S. Treasury Secretary, who described the new scheme as illusory. The debt relief approach so far has been dominated by the U. S. for the last three years through the Baker Plan.

The Managing Director of the IMF, Michel Camdessus, stated in the West Berlin meeting (1988) of the Fund that the debt relief measures would be based on a growth oriented strategy for the indebted countries. This would necessitate massive transfer of real resources from the developed to the developing countries. The French President Mittarand very rightly put emphasis on a new Marshall Plan for the developing countries. But the political will for such a bold step is absent among the developed countries, particularly the U.S. The U.S. Treasury Secretary, Nicholas Brady, made it clear in the Fund-Bank meeting that the U.S. will not favour any debt relief measures which may transfer the risk of default to official creditors or lead to tax increases on the citizens of the creditor countries. Thus, "it is political economy rather than pure economic logic that dominates the approach of the Fund as well as the World Bank to the problem of the Third World debt."

The promise of the Fund and World Bank to base debt relief on a growth oriented lending policy should be complemented by a policy of symmetric process of global adjustment. The stern discipline that the IMF is able to enforce on countries that go to it cap in hand contrasts with its marked inability to influence the policies of the strong, advanced and powerful industrialised countries like the U. S.. Adjustment cannot be a unilateral process. The policies of the developed countries affect the developing economies. The Fund is ineffective in calling for receiprocal adjustments by the surplus countries by way of expanding their economies, giving up protectionism, avoiding undue reliance on monetary policy and limiting the effects of fiscal deficits. The developed countries probably think that the Fund is an organisation for disciplining the countries in the developing world but the industrialised nations themselves should be free to pursue their own policies irrespective of the advice given. This attitude was also evident when in 1971 President Nixon unilaterally delinked the dollar from gold in flagrant disregard of the IMF charter. At that time the U. S. neither consulted the Fund, nor did it callfon any advice from it.

It follows that the developed countries are opposed to any basic structural change in the adjustment process. As a result, the entire burden of adjustment falls on the less developed countries. Unless the developing countries are allowed to expand their exports and trade, their ability to maintain payments on their financial obligations would be adversely affected. Debt-servicing, trade and development are all interlinked & this makes it imperative that the international community should evolve ways to ensure consistency between the trading environment on the one hand and the monetary and financial system on the other. The IMF is not able to maintain its proper role in this regard in the face of opposition of the stronger nations to align their policies more in keeping with their international responsibilities.

Conclusion.

Given the resource constraint of the international financial institutions like the IMF and the World Bank, the marked trend towards the privatisation of capital flows and the high rates of interest charged on such capital, the unwillingness of the industrialised countries to roll back protectionism, the virtual subjugation of the Fund and the Bank by the U. S., the position of the developing countries in general and the low income countries in particular has become precarious. The U. S. with most acute structural problems of fiscal and current account deficits could not be subjected to the Fund-Bank discipline. But the developing countries are asked to undergo austerity measures even though the debt originally incurred has been more than repaid, As a writer appropriately mentions : "Within national boundaries, there are laws against usury. But, in the international arena, where the banks have been organised as lending cartels, the only laws are those made by the lender". From this point of view and in the interest of justice, the case for writing off a large part of the debt overhang is justified. The Fund and the World Bank cannot be free from the pressures of the developed countries which hold 72 per cent of effective voting power and the U. S. the veto power by virtue of its quota exceeding 20 per cent. It may also be pointed out that the IMF cannot be expected to do all the financing of balance-of-payments deficits running into billions of dollars, especially in the unconditional manner in which member countries in general would like to have such assistance. The IMF probably was not designed to tackle the kind of surpluses or deficits which have arisen in the wake of the rising oil prices. In the light of these severe limitations of the Fund, made prominent by the debt crisis, there appears to be an urgent need for reform of the present international monetary system in order to increase its usefulness in the changed circumstances. The provision of 50 : 50 voting rights to the developed and developing groups of countries is necessary to put an end to the imbalanced structure of management at present found in the international monetary system.

In the earlier decades, particularly the decade of 1950's and 1960's, world prices, exchange rates and interest rates were reasonably stable and were regulated by the IMF

and other official lenders. These are no longer stable and are determined by private international financial markets. The currency and credit markets and to a lesser extent stock-exchange markets of industrialised countries have all been fused into well integrated international financial markets dominated by transnational banks and other financial institutions in search for profits through hedging, speculation and other purely financial transactions. These markets have completely relegated the IMF and the World Bank to the background and are beyond the control of national central banks of different countries. The fluctuations in exchange rates are no longer related to movements in goods and services. Similarly, the changes in interest rates have little to do with the supply and the demand for international funds for productive purposes.

The stable exchange rate was the device in the past by which each country managed to keep its domestic price and cost structure insulated from changes taking place in the rest of the world. The floating exchange rates have changed all these and the changes in the exchange rates have become powerful channels of transmission of risk and uncertainty from abroad to the domestic economy. As a writer puts it, "the fluctuations in the exchange rates have emerged as the major comparative cost advantage factor which is totally beyond the control of individual businesses or individual actions".

The trends in world trade have been equally discouraging for the developing countries. Compared to the average annual growth rates 8 per cent in the 1960s and 5.5 per cent in the 1970s, the volume of world merchandise trade has dropped to 3 per cent in the 1980s. The performance of the developing countries in this field has been very distressing. Their share in the total world exports has been shrinking on account of a drastic fall in primary commodity prices, intensification of protectionist trends in industrialised countries and deterioration in their terms of trade. Arjun K. Sengupta writes, terms of trade that improved at a 2.2 per cent average per year between 1973 and 1982 declined steadily at 2.68 per cent during 1983-1987. Low growth of world output and slow expansion of world trade show that the era of prosperity through rapidly expanding markets has come to an end. In the emerging scene, growth and for that matter survival can only be ensured by improving efficiency, productivity, quality and cost reduction of the entire national productive system. Moreover, the structure of trade is also rapidly changing with exports of knowledge and skill based on services like consultancy, banking, insurance, data processing, are becoming as important as exports of goods. It is interesting to note that the U. K. earned £ 14 billion (roughly equal to Rs. 3,900 croses) from invisibles during 1987. The trade in services is expected to be an important part of world trade in the coming years. The developing countries as a group are placed at a great disadvantage in the process of these structural changes taking place in world trade and finance.

All these changes underline the important fact that the Bretton woods twins can not help the developing countries any longer in their present stage. A new international monetary system has to be devised, taking into account all these structural changes, not merely to overcome the debt crisis but also for helping the largest majority of people in the world. This remains a far cry in view of the strong opposition of the U. S. at present to any fundamental change in the world's trading and monetary system. The solution of the problem of the debt overhang largely depends upon a change in the attitude of the U. S.

Genesis of Debt Crisis And Inicidence of Debt Overhang In Asian Developing Countries

Dr. Kumar B. Das

The present paper examines the main issues of the debt crisis under three separate sections. First section portrays the gravity and dimension of the debt crisis, the second section deals with the causes and consequences of debt crisis and last section suggests some relevant measures to avert / contain the problem of debt overhang in Asian developing countries.

1. 1.Debt problem of the developing countries constitutes an integral facet of the world economic crisis. The distribution of external debt burden is extremely skewed. The burden of external debt is heavily concentrated in most of the third world countries. The staggering 1.2 billion dollar external debt of the developing countries poses a formidable challenge & admits of no single, simple solution. For most of the highly indebted countries the situation is so gloomy that low commodity prices, high real interest rate, sluggish growth rate in industrialised countries and their own macro-economic and trade policies indicate that their present debt situation can not be reconciled with their present levels of growth.

Before analysing the causal factors it is pertinent to recognise the nature and magnitude of the debt problem. It is a fact that the debt problem is not a temporary nor accidental occurence linked to a particular phase of the business cycle. It must not be regarded as an unexpected event that occurred in late 1982. It is rather the result of deep structural maladies that persist in the functioning of the developing economies. Therefore, it is correct to believe that it will take many years for most of the countries to return to the normal situation in which market resumes its role as the principal regulator of financial flows and international trade.

There is no single criterion to measure the external debt or determine whether a given level of indebtedness may be considered excessive or reasonable. There is considerable difficulty of defining and measuring the bebt crisis. Nevertheless in case of doveloping countries, even though the gravity of the problem is not uniform among all countries, it seems very clear that they have faced with an unprecedented crisis, regardless of the index one uses. For instance, the percentage of debt to GNP constituted 20.6 in 1980. It has suddenly risen to 35.4 % in 1986. It may be argued that it is not the size of the debt either in absolute terms or in relative terms (as a percentage to GNP or exports) that

matters but whether it can be serviced. It implies a comparison of debt-service obligations (principal and interest payment) with export of goods and services. Similarly debt-export ratio, which was 90 % in 1980, sharply increased to the extent of 144.5 % in 1986. This scenario is no lese dramatic. It means debt has grown at a faster pace as compared to GNP and exports. Debt service ratio has increased from 16% to 22.3% during this period.

Table—1

Debt Indicators for Developing Countries (1980—1986)

Indicators	1980	1981	1982	1983	1984	1985	1986
D—G Ratio	20.6	22.4	26.3	31.4	33.0	35.8	35.4
D—E Ratio	90.0	98.0	117.6	134.8	121.2	143.7	144.5
D—S Ratio	16.0	17.0	20.6	19.4	19.5	21.4	22.3
Rate of debt service to GNP	3.7	4.0	4.6	4.5	4.9	5.3	5.5
Total debt out standing and disbursed	428.6	490.8	551.1	631.5	673.2	727.7	753.4

—Data based on a sample of 90 developing countries.

—Figures indicate Percentage unless otherwise stated.

Source : World Development Report, 1987.

Table—2

Net lending flows to developing countries in billions of dollars

Country Group	1975	1980	1981	1982	1983	1984	1985	1986
Low income countries	4.8	8.8	7.9	8.3	7.2	7.2	7.0	13.0
Middle income countries	25.1	49.5	67.8	60.6	47.2	33.6	18.6	12.6
All developing countries	29.9	58.3	75.3	68.9	54.4	40.8	25.6	25.6

Source : World development report, 1987.

Table—2 indicates that net flow of lending has declined. It reached the peak magnitude of 75.3 billion dollars in 1981, after which it steadily decreased to the level of $ 25.6 billion in 1986 for all developing countries.

All Asian countries are experiencing precipitous defcit in their current account. China has the highest deficit of 11,417 million dollars in 1985. India's deficit has increased from 394 to 2,481 million dollars during 1970 and 1988. Long-term public debt of India has increased from 8,209 to 29,743 million dollars which constitutes 1.4 per cent of the GNP during the period (Table—4 and 5) 1970—1985.

Table—3

Balance of payment and reserves of Asian developing countries (in billion dollars)

Country	Current Account Balance 1970 — 1985		Gross International Reserves 1970 — 1985	
India	−394	−2481	1023	9,494
China	—	−11,417	—	16,881
Pakistan	−667	−1092	195	1,429
Srilanka	−59	−559	43	471
Bangladesh	—	−543	—	353

Source : World development report, 1987.

Table—4

Total External Debt of Asian Developing countries
(Million Dollars)

Country	Long-Term Debt				Short-Term Debt	IMF Credit		Total
	Public		Private					
	1970	1985	1970	1985	1985	1970	1985	1985
India	8,109	26, 650	100	3,093	1,516	10	4,202	35,460
China	—	7,020	—	—	—	0	0	—
Pakistan	3,081	10,681	5	26	722	45	1,266	12,695
Srilanka	321	2, 815	—	99	299	79	321	3,534
Bangladesh	—	5, 968	0	0	135	0	424	6,526

Table—5

Total External Public & Private Debt and D—S Ratio

Country	Total Long-term debt (Million Dollars)		Total interest Payment of long-term debt (Million Dollars)		Total long-term debt Service as percentage GNP		Export	
	1970	1985	1970	1985	1970	1985	1970	1985
India	8209 (15.4)	29743 (15.0)	202	1066	1.1	1.4	25.1	12.7
Pakistan	3086 (30.8)	10707 (31.7)	77	30.8	1.9	3.2	23.5	30.0
Srilanka	—	2914 49.2	—	113	—	4.1	—	14.7
Bangladesh	—	5968 (37.2)	—	89	—	1.3	—	16.7

Source : World Development Report, 1987. (Bracket indicates the % of G. N. P.)

Table—6

Terms of External Public Borrowing

Country	Commitment (in million dollars)		Average interest rate (Rate in percentage)		Average maturity (years)		Average Grace Period (years)	
	1970	1985	1970	1985	1970	1985	1970	1985
India	950	4668	2.5	6.4	35	26	8	6
Pakistan	943	1776	2.0	5.6	32	27	12	6
Srilanka	80	394	3.0	2 9	27	36	5	9
Bangladesh	—	772	—	1.0	—	41	—	10

Table – 6 reveals that during the period 1970-1985 the average interest rate has increased from 2.5 to 6.4% for India and from 2.8 to 5.6% for Pakistan. Average maturity period has on the contrary fallen from 35 to 26 years for India from 32 to 27 years for Pakistan.

1.2 Causes of Debt Crisis

External debt crisis stems from two basis sets of .factors : domestic and external.

1.2.1 Domestic Causes

The domestic causes of the debt crisis may be traced to the growing fiscal deficit that most countries faced between 1978 and 1982 and the expansionary monetary and credit policies that were largely used to finance them. Fiscal deficits give rise to increased external credit (borrowing or use of international reserves) and domestic credit. But there is a close and inseparable interdependence between internal and external credit, the former largely determining the pattern of external financing. Domestic credit for the public sector basically has two main sources, viz., the central bank and the private sector. It is quite impossible to predict the precise relationship between fiscal deficit .and 'monetary and credit policies on the one hand and balance of payment on the other but the direction and closeness of the relationship is unquestionable. For instance, the current account deficit in the balance of payments will vary according to the degree of openness of the economy to international trade, with smaller deficits where import restrictions are severe and larger deficits where restrictions are milder. On the other hand there will be ahigher degree of inflation in the first case and lower degree of inflation in the second.

Countries in question did not follow the appropriate policies to take advantage of the increase in external financing made available to them. The surprising fact is that in most of the cases the increased inflow of external funds was accompanied by a drop in domestic savings as a percentage of GDP. Thus given the imbalances created between the growth of external debt and domestic capital accumulation, a debt crisis was virtually inevitable.

1. 2. 2. External Factors

The external factors underlying the debt crisis may be classified into three groups. *The first* includes those that precipitated the 1982 crisis : the rapid rise in real interest rates in international financial markets, the world recession and the difficulties in expanding export markets. Those factors did not produce the crisis although they precipitated and certainly aggravated it. As it happened they coincided with a situation that was already precarious. Had the external debt levels not been high, these factors

could themselves have not brought such a crisis. *The second group* includes factors of a more permanent nature in contrast to the transient ones mentioned above and relate to what we call real as against pure monetary factors. The principal factor in this category was the decline in the terms of trade experienced by most of the developing ountries as a result of the oil price hike of 1973 and 1979. *The third group* consists of external financing flows, particularly those from international commercial banks. Were it not for financing from these sources, which was growing very rapidly and with ever-shorter maturities, an external crisis of the proportions experienced could not have happened.

The developed capitalist countries have adopted the practice of dealing with their economic crisis at the expense ot the developing countries. The economic crisis of the developing countries has been brought about, above all, by the artificial maintenance of prices of raw materials at low levels which the developing countries export, the prices of the finished goods at high level which they import, unfair financial policy of the developed capitalist coutries and the operation of the transnational corporations. In 1970's while the capitalist countries were passing through a period of turmoil and transition as manifested in the decline of their growth rate (from 5% in 1960 to about 3% in 1970's), mounting fiscal deficits, rising inflatian etc, the economic growth of developing countries remained largely unaffected. But over the years huge accumulation of external debt and growing domestic imbalances such as fiscal deficit, hyper inflation, over-valuation of currencies and distorted incentives for industry and agriculture, left developing countries more vulnerable to new external shocks. Two global inflations, primary commodity booms and busts, two oil shocks, huge current account deficts, cycling and recycling of petrodollars, changes in the structure and sources of international liquidity and lastly the protectionist policy of the industrial nations aggravated the debt problem to a considerable extent.

1.3. Consequences

The consequences of the strategy forced upon the indebted nations to deal with the debt problem is counter-productive. The macro-economic and trade policies of these countries aim at export maximisation and import minimisation. These countries are faced with problem of low commodity prices & high real interest rate. Such policies might help the debtor countries to stimulate domestic economic activity and achieve trade surplus. But in the long run the growth and productivity is adversely affected since whatever surplus is available is used for debt servicing rather than domestic investment. Sharp rise in debt service resulted in reversal of net resource transfers. Hence an unintended eventuality of this policy has been lower consumption and investment which impair the growth impulses. That means the present level of debt is incompatible with the present level of growth. This counter-productive consequence is referred to as "debt overhang." The developing economies have been experiencing sluggish growth in general which has been more pronounced in the Asian indebted countries.

Growing indebtedness and the enormous debt burden of the developing countries have profound effect on the acceleration of the pace of the world economic crisis. Many developing countries have to cut their imports drastically because a large part of the revenues in foreign currency is used for debt repayment. It may be argued here that countries cannot suspend their imports below a certain minimum level, which otherwise becomes incompatible with the effective operation of their economies. Reduced imports have not only affected the development possibilities of developing countries but also produced some deleterious effects on the dynamics of international trade by reducing LDC's demand for manufactured imports from advanced countries. The increasing foreign exchange burden of servicing foreign debt has also forced many developing countries to export goods which are urgently needed in their own countries.

This need to export goods at any price has aggravated the already existing unequal exchange of goods with the industrial countries and thereby has caused additional outflow of funds from the developing countries. Finally the outflow of funds from highly indebted developing countries has also been caused by capital flight. Such capital flight in the short run can produce destablising effect on domestic interest rates, exchange rates and on the international reserve position of these countries. In the long run, if the capital flight is permanent, there is a reduction in available resources to finance domestic investment. This in turn requires the Govt. to borrow more from abroad, thereby increasing the debt burden.

On the other hand the commercial banks have found that they could not go on lending large amounts for ever shorter periods. In addition to these, the countries are unable to meet their import payments as they suffer from large losses in their international reserves and are falling behind in their external payments. When commercial bank credit is suspended, lack of confidence in domestic currencies precipitates exchange crisis and then the gravity of the situation becomes very clear.

Had there been no debt rescheduling by private and official creditors, expanded lending by international agencies and substantial adjustment efforts in debtor countries themselves, the result might have been a financial collapse. Though the crisis was thus averted, the debt overhang remains an obstacle to growth in the debtor countries. It is a threat to the world economy as well. It is no more a matter of concern for the debtor only. With the borrowers, adopting stiff attitudes, not only the debtor but also the creditor are caught in the trap. It does not merely affect the developing countries. Financial collapse of the debtor poses a serious threat to the world monetary and financial system, because it ultimately results in bankruptcy of lending agencies especially the international banks. Hence dealing with debt overhang is one of the most serious problems facing the world economy. Its solution needs a comprehensive excercise.

1.4 Lessons of the Crisis

Though it is not very easy to draw correct inferences from the experience of debt crisis, a set of broad conclusions is possible.

First : Countries do not have an unlimited capacity to absorb external financing and to make proper use of all the funds they may be granted at a given moment. After a point more availability of additional financing does not guarantee the economic use of funds.

Second : Public sectors of the developing countries had neither the needed taxing capacity nor the domestic savings required to service, the external debt incurred by them. Fiscal deficit rarely contributes to higher total investment. Neither domestic nor externall debt can be permanent substitutes to fiscal deficit. Sooner or later total expenditure wi[l] have to be brought into line with the total resources available.

Third : Since external loans must be repaid in foreign exchange, external borrowing decision must be linked to a general economic policy framework that will guarantee both the profitability of the investment and the generation of sufficient foreign exchange for external debt service.

1.5 Future Prospects :

It may be useful to speculate on what the future will be like if a successful transition occurs.

First : The debtor countries themselves will manage their external positions more carefully and conservatively. More attention is likely to be paid to the structure of liabilities with more rational appreciation of the risks of excessive reliance on short-term floating-rate finance.

Second : There are likely to be fewer but more committed and active commerci al bank lenders.

Third : Future lending will be more through liquid instruments that are either tradable or self-liquidating over the short term. Long-term lending is likely to be linked to devices such as project finance that provide greater security to lenders.

Fourth : Lenders will insist on better information from borrowers on their economies and the likely use of the borrowed resources. Strict surveillance shall be tagged on to all financial aid.

Fifth : While an increase in net capital inflow in the short-term may in some cases temporarily worsen the debt burden, it may be justified if the expansion of exports

and investment can be expected to restore credit worthiness, increase self-reliance in financing growth and reduce the roll of official lending.

Sixth : The financing pattern that suported the upsurge in current account deficits of developing countries is unlikely to be repeated. In particular, new net lending through international banking system is likely to be much more constrained in the future.

1.6 Conclusion

Debt must not be analysed in isolation as something that occasionally becomes a crisis requiring an urgent (readymade) attention. Debt management should be viewed as an integral part of the overall policies of economic development. Magnitude of debt is not the problems, but *its management is inefficient. If debt assumes the proportion of a crisis, it is because we have mishandled the problem over the years.* Key to the debt problem lies in the combination of effective adjustment and a rapid resumption of durable economic growth. It has become apparent that restoration of growth in these countries requires additional financing and rescheduling by the commercial banks and greater co-operation between multilateral financial institutions. In order to make a real headway to contain the incidence of the debt overhang, constructive and well co-ordinated policies of these governments, the IMF, World bank and the private banks backed by the necessary political will is very much warranted. Remedial measures are : massive debt relief, low interest rate, liberal aid and credit flow, stable exchange rates and support for balance of payment stablization. Some changes in the outlook as well as functioning of the World Bank and IMF can help the developing countries to come out of the debt crisis. Global action is imperative. As long as this problem remains as a crisis, it will remain as an obstacle hampering world economic recovery. It must be recognised that the present situation is a collective problem that can only be resolved at the collective level by mutual co-operation and comprehensive policy.

In recent years, in the wake of world-wide problem of inflation, recession, high energy prices, and debt-servicing difficulties, there has been some questioning about the benefits of an integrated world economic system. Some economists suggest that perhaps greater economic independence might be preferable. However, the solution does not lie in measures to isolate the economies of individual countries to reduce the harmful effects of an integrated world economy. Dispensing the debt will imply then cutting off the head to solve the problem of headache. Given the nature and extent of mutual economic dependence, this would not be viable. Even if it were viable, any such relief would only be achieved at a considerable cost in terms of lower rate of economic growth, less efficient utilisation of resources and a more stagnant international economy and ultimately a lower standard of living for all. Hence instead of having a less integrated world economic system, a proper debt monitoring s ystem should be evolved.

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Third World Debt and Institutional Arrangements

Dr. Adwait Mohanty

1. Dimension of the Problem

The debt problem of the Third World has dominated the international economic and financial scene in the recent past, particularly since the early 1980s. As per the World Bank Debt Survey, 1987-88, the total external debt of the LDCs stood at $ 1,190 billion at the end of 1987, registering an increase of 6.25 per cent over the preceding year. OECD survey estimates the overall global debt at $ 1,240 billion by the end of 1988.

The total debt service payment amortization and interest for all the developing countries averaged $ 94 billion a year during 1980-85. This amount increased to $ 117 billion in 1986 and further to $ 123.4 billion in 1987. This figure reached the levelo f nearly $ 180 billion in 1988 owing to valuation effects, increased interest rates and, to a lesser extent, increased repayment to multilateral institutions. The significant increase in the debt service burden can be realised from the fact that total external debt of the Latin American countries, which was 143 per cent of their exports in 1971, rose to almost 400 per cent by 1986. The debt service payments were 23.8 per cent of export of goods and services from all developing countries in 1987.

The proportion of debt to the GNP of highly indebted countries rose from an annual average of 36.9 per cent in 1980-85 to 55.2 per cent in 1986 and 56.9 per cent in 1987. Increase in the ratio of debt to the GNP of these countries implies that the changes in debt service payment were more than proportionate to the changes in their GNP.

The restructuring of the external debt since 1982 has little beneficial impact on interest payment amount of the indebted LDCs, as there has been considerable increase in interest payments by all the developing countries for the period 1980-87. While it averaged $ 46.3 billion a year during 1980-85, the same shot up to $ 55.6 billion in 1986 and $ 56 billion in 1987.

The above statistics are good enough to highlight the magnitude and gravity of the debt problem the world has landed in. As a result of this past build-up of liabilities of the LDCs, a serious debt crisis erupted towards the end of 1982, when Argentina, Mexico and Brazil announced their inability to meet their external obligations. Most of the major borrowing nations have not been able to honour their repayment obligations during

the last few years. Because of their failure to repay loan liabilities on time, commercial banks have reduced their lendings to the large indebted countries. These countries have also felt the credit crunch from other sources, such as, IMF, export credit lines extended by governments and private banks. An increasing number of countries are being forced to carry out structural adjustments at the behest of the IMF/World Bank, though it lowers living standard and accentuates inequality.

II — Special Features

The current debt crisis is the aftermath of a massive international capital flow that took place in 1970s. Waves of foreign lending to the relatively poor countries have swept the world in the past. The present third world borrowing countries are not more indebted to-day than their 'the then counterparts such as Australia, Canada and U. S. in not too distant past, considering their debt-GNP proportions. Paradoxically, the third world external debt comes only to a tenth of the total world debt, covering two-thirds of the world's population and thus is hardly excessive in per capita terms. But the current debt situation is considered grave, threatening the international financial system because of its several notable features not traceable on earlier occasions.

Under indentical situations in the past, foreign borrowing was being financed mostly by public issues of shares and bonds. But from the late seventies onward, when the foundation of the debt problem was laid, the LDCs have borrowed heavily from the banks. The unspent cash surpluses of the oil rich countries were mobilised by the banks and lent out to the oil-deficient third world countries. Large medium-term Euro-currency credits guaranteed by bank syndicates began to supplement the traditional suppliers' and buyers' credit for the rapidly industrialising LDCs. Official supplies of foreign capital, both concessional and non-concessional, provided 50 per cent of the total capital inflow for developing countries in 1970. By 1983, this figure came down to 46 per cent. Equity creating private foreign investment, both direct and portfolio, also declined during this period. On the other hand, debt-creating financial flows, that is, commercial bank lending increased roughly from 15 per cent in 1970 to 35 per cent in 1983. According to a recent report, third world debt to the commercial banks alone totalled around $ 500 billion i. e. more than 62 per cent of the third world debt.

This difference has important macro-economic consequences. First, current bank-credit financed foreign investment as compared to such invetments out of accumulated savings as in the past have greater inflationary potential and have bearing on the liquidity-creation process in individual countries as well as at the international level.

Secondly, only a small group of large and medium sized international banks, mostly American, account for substantial international lending and, as such, the associated risks are not spread out and shared.

Thirdly, the banks, mostly dealing with short-term funds have dared into long term lending, thus creating a mismatch between asset maturities and liabilities. There has cropped up, as a result, transformation risks that did not occur in the direct finance process of the last century.

Fourthly, bulk of the total debt to the commercial banks is owep by a few Latin American countries. As a result, a unilateral and long-standing default by the few Latin American countries could wipe out the capital of the world's largest banks, with consequential damage to the entire world banking system.

Fifthly, the flows of finance from the advanced countries to the developing areas which had played a significant role in the economic development of the latter in the past, have been reversed.

III — Causes

How did the present debt crisis for the third world countries emerge ? The constant need for capital inflow by the third world countries cannot by itself explain the upsurge in their external debt over the seventies. Both external and internal factors have caused the crisis.

The external factors are as follows :

1. The present debt crisis, in a way, was the inevitable outcome of the contradictions of late capitalism, which constantly inflated credit in order to sustain long boom. For the reasons known, the trend has been reversed since the early seventies and the principal objective of the advanced capitalist countries has been to curb inflation, which resulted in recession and stagnation of demand in these countries. The banks of these countries, therefore, in their desperate search for customers turned to the third world countries to give loans.

2. Oil price rise in 1973 and subsequently in 1979 increased the import bill of the non-oil developing countries.

3. Depressed commodity prices and the deterioration of the terms of trade for the developing countries led to lower their export earnings and raise import-spending.

4. The cost of bank loans to the developing countries is determined primarily by the rate of interest in the world financial market, which is spread over the London Interbank Offered Rate (LIBOR). A steep rise in the level of interest rates in the international credit markets lead to a sudden increase in debt service payments.

5. Exports from the developing countries declined steadily due to recession in industrial nations and rising trade barriers.

6. A part of the inflow of foreign capital into the developing countries finds inroads into the external accounts of indigenous elites due to financial repression at home. A recent study based on OECD, IMF and World Bank statistics, for instance, shows that capital flights from Argentina and Mexico between 1976-82 were $ 17 billion (80.5 per cent of its foreign debt) and $ 13 billion (54 per cent of its foreign debt) respectively. The corresponding percentages for Egypt and India are 44.13 and .33.33 respectively. The situation has been compounded in many instances by large fiscal deficits 'crowding out' credit from the private sector.

Turning to the internal factors, mismanagement of the domestic economies of these developing countries has been cited as the most important determinant of the crisis. Over-spending and mismanaged public enterprises have led to large fiscal deficits causing rampant inflation and loss of export markets. The debtors brought the crisis upon themselves through bad policy and wasteful spending. Build-up of debt did not have a counterpart of real investment a significant proportion was dead-weight debt, Increase in debt was equally paralleled by the increase in armaments spending.

IV — Present Arrangements

The present debt crisis poses a threat to the international financial system, Non-payment of debt obligations would affect the debtor countries' future credit-worthiness and hence, supply of credit to them. Non-collection of interest on loans would endanger many of the big international banks in the creditor countries, thereby leading to a financial crisis.

There have been various initiatives, both regional and global, such as. frequent meetings under the auspices of the IMF / World Bank, Baker Plan etc. to solve the problem. The onus of adjustment, under these initiatives rests on the debtor countries, as evidenced from the IMF conditionality.

The main objective of these adjustment measures is to reduce fiscal deficits considered to be the major source of the debt problem. These measures consist in : (1) curbing aggregate demand through austerity measures, elimination of deficits of public enterprises and reduction of social spending and subsidies ; (2) devaluation to increase exports; and (3) increasing interest rate to encourage domestic savings.

The pain of this structural adjustment prescribed is known to be severe. It would lead to stunted economic growth, domestic misery, worsening income distribution and poverty in the indebted countries. Again, such a policy may work for one or two countries at a time and only for a while. But if a number of countries follow the same path for a somewhat long period, the export of developed countries would suffer due to contracting demand in the indebted developing countries. Furthermore, a liberalized policy regime stipulated under the programme would make the debtor economies much

more susceptible to the working of the global market where the more powerful nations have much more influence. More importantly, this policy makes the debtor countries to pay for the follies, as mentioned above of the rich banks. In the past, when such things happened to countries like Britain, France, Germany and the U. S. the creditors were made to bear the brunt as part of political settlement.

Example of another initiative in this direction is the Baker Plan announed by the U. S. Treasury Secretary Mr. James Baker in 1985. The plan ruled out write-offs and concessionality on the existing obligations. The plan ruled out write-offs and concessionality on the existing obligations. The plan visualised providing fresh liquidity to the extent of $ 29 billion by,the commercial banks and development institutions in a period of three years and the borrowers accepting the growth-oriented IMF conditionality mentioned above. The plan was specifically meant for 15 large debtor countries.

Borrowing to pay debt service obligations helps neither the debtor nor the creditor. The actual amount owed to the creditor banks increase and its exposure on the debtors gets extended. A recent study pointed out that the new loans do not really protect the value of each bank's portfolio as their value in the secondary market keeps going down with additional issues as in case of Latin American debt. The new loans are certainly of no paramount value to the debtor since they are only buying time with the repayment burden to be still higher in the years to come. Hence, the need arises to look beyond this plan.

In the face of declining export prices, growing protectionist tendencies in developed countries and rising interest rate, the borrowing countries find it increasingly difficult to meet their debt service obligations. Therefore, there have been demands from debtor countries for debt forgiveness—partial or full—covering both principal and interest.

But the creditors, both countries and banks oppose this on several grounds. They apprehend that it would be difficult to keep debt relief selective as undeserving countries could not be resisted from making such demands, leaving little scope for the creditors.to retrace their steps. Furthermore, because of 'debt forgiveness', the debtor countries will have no compulsion to observe financial discipline and implement economic adjustment policies beneficial for their economies. It is also argued that the net effect of 'debt forgiveness' may be negative as this may discourage inflow of private funds from abroad and result in actual outflow of resident capital, which together, may outweigh the debt-relief secured.

On the other hand, financial analysists opine that there is no escape for the creditors from granting debt relief. The debtors are quite unable to meet their external debt obligations.

They further argue that those responsible for the accrual of the debt crisis should pay for it. The creditor banks, when flush with surplus funds between 1975 to 1981, prevailed upon the borrowing countries to borrow extensively, violating the canons of prudent lending. They mismatched liability and asset maturities, cared little for the market value of their loans, ignored safety margin and over-exposed themselves to a few clients.

Nor the creditor indusrial countries have played the game fairly. Not only they extended credit more than asked for, when it suited them, but also, indirectly encouraged the borrowers, at times, to reschedule their debt bypassing the IMF.

The creditors now recognize the need for negotiated settlement under which the debt and interest thereon can be scaled down to a realistic level with the assurance from the borrowers to honour the revised terms. One such arrangement calling for sharing of debt burden between creditors and debtors is what is known as debt-swaps. Of the different types of swaps, debt-equity and debt-peso swaps are important. Debt-equity swaps enable foreign residents to purchase LDC debt at a discount to acquire equity in the debtor country. Purchasers include creditor banks, multi-national corporations and, more recently, closed end funds that pool the resources of private investors. Debt-peso swaps enable residents of a debtor country to purchase their country's foreign bebt at a discount and to convert this debt into domestic currency. Residents use for their purchase funds of hard currency held abroad after acquiring the same through international commodity and financial trade.

But this arrangement has a limited success because it can meet only a part of the debt. The secondary market for trade in equity in the indebted third world countries is narrow due to limited investment opportunities. Policies on investment (investment priorities, maximum equity ownership and divided remittances), impact on domestic inflation through increased money supply and possibilities of capital flight from the countries are some of the constraints on debt equity swaps.

Very recently two systematic proposals have been put forth one by Robinson III, chairman of the American Express Company and the other by Dr. Arjun Sengupta, Indian member of the Board of Executive Directors of the International Monetary Fund. These proposals envisage to private co-ordinated debt relief to the third world countries and permit them the benefit of discount on their impaired debt. These proposals stipulate a guarantee in one form or another from the international community to repay the creditors. This guarantee entails actual or potential cost. While Robinson proposes a new agency named Institute of International Debt and Development, Sengupta's proposal would operate within the existing institutional arrangement. The countries gaining from the write-offs will need to work with IMF in reshaping their economies. These proposals differ from the debt swaps as they expect real cost to accrue to the international community.

V — Suggestions

The proposals mentioned above are better than the existing ,IMF/World Bank or debt-swap arrangements as they stipulate that the real cost of the solution to the debt problem would very appropriately be borne by the international community, which has benefited in terms of increased output, efficient production and larger trade from these financial flows. Though effective in reducing the total debt burden, these plans do not ensure inflow of new money over an extended period, without which the third world indebted countries would be in no position to meet the two-fold targets—steady growth within the countries and external financial solvency.

The present negative flow is to be reversed. It would be foolhardy to expect the official financial flows to come forth adequately when large-scale international bank financing has been necessitated due to the inadequacy of the tormer, The financial requirements of the developing countries are to be met effectively from commercial sources. But this would push private finance into fulfilling a (international) public purpose for which it is profoundly ill-suited. Therefore, the international community should see to the reconciliation between the private and public interests. This is possible through subsidisation of the interest costs of the international financial flows. The subsidy is to be funded by an international organisation, new or an existing one.

Such an aerangement would have a further salutary effect in reducing the gap between the requirement and availability of loan for the third world countries by raising rate of return for the creditors. A form of insurance akin to the export credit guarantee schemes operating in many a country would go a long way in facilitaing the financial flows across the national boundaries. Further, the market forces would promote larger flows of finance to the third world countries, if the official development assistance, in stead of going direct for investment there is use as subsidy component of the interest payment on their loans, commercial or otherwise. The proposal envisages collaboration between banks and international financial institutions for co-financing of the third world borrowing.

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World Economic Crisis and International Debt

Dr. B. Sahoo

The most important unresolved crisis facing the world economic order falls in the areas of money and finance. The volatile exchange rate system emerging since early 70s constituted serious disorder. There are the problems of misalignment of currencies and increased prominence of a single currency i. e. the U. S. dollar whose changing value cause havoc in world money market. Besides, there are problems created by the unusual growth of the Eurocurrency markets and the internationalisation of private capital flows subject to hardly any known discipline.

Over the years, the developing countries have been at a comparative disadvantage due not only to stricted access to markets, technology and information and more crucially due to burging debt liabilities and reverse transfer of net resources but also on account of inadequate strategy / decision support system of their own international forums. [1]

As is wellknown, the Fund went on insisting on devaluation as a major cure for temporary dis-equilibrium in the balance of payments without considering the need for assistance by World Bank. It also avoided Keynesian concept of creating liquidity and emerging as an international bank till 1970 when it created under pressure SDRS. Even then, the SDRS were not properly and eguitably distributed. The views of Sir Joseph Stamp and Mr. Colombo that a part of the SDRS belonging to the developed countries should be segregated and linked with development finance were not carried out due to stiff opposition from USA and Germany. Prof. Arthur Buins, the Economic Adviser to the White House feared that such a move on the pressure of the developing counties would lead tremendous excess of international liquidity causing world wide surge of inflation.

Countries have different notions about the authority of IMF and their obligation to it. Some of the developed countries have the idea that the Fund is an organisation for monitoring and disciplining the countries in the developing world, but the industrialised countrised themselves should be free to pursue their own policies irrespective of the Fund's advice. U. S. A.s delinking its dollar from gold in 1971without consulting with IMF is an example.[2]

Two issues have bothered for the last several years, the competitive currency depreciation and the unilateral imposition of restrictions on trade and payments.

Continuously increasing and heavy debt burden of several LDCs suggests that the nature of payments problem is different from the purely cyclical problem. This has blurred the distinction between balance of payments finance and development finance for the LDCs.

Debt of the Less Developed Countries

The LDC's external debt has reached critical proportions. 'The total sum required to service foreign debts now would be about 50 billion dollars, as compared to 25 billion dollars of international public assistance'.[3] The Seventh Special Session of the U. N. General Assembly called for the debt relief to the LDCs observed, "The burden of debt on LDCs is inceasing to a point where the import capacity as well as reserves have come under serious strain". The situation calls for not a 'Safety net' for lenders, but 'new' facilities to help the indebted LDCs. To quote Peterkenen, "Debt relief is one of the new policy domains in which developed countries can be forthcoming rather than reluctant in responding to demands from the LDCs. The debt relief is not a zero-sum game, it can confer. economic and political benefits on grantors and grantees and on the international system"

To meet the situation the search for a new frame-work for orderly transfer of resources from rich to the poor countries has been felt essential. Bilateral lending being short-term and subject to several interuptions, long-term multilateral lending to LDCs is desirable. Though there was an international deal to effect resource transfer to the tune of 1 per cent of GNP of the rich countries, the reality has been quite disappointing. The official development assistance from 17 countries of Development Assistance Committee of the OECD actually fell from 0.52 per cent in 1960 to 0.30 per cent in 1975 and on the then World bank projections, was expected to decline to 0.22 per cent by 1982.[4]

The World Bank Report 1981 calculated that the debt outstanding to the Third World Oil Importing Countries would be 48 billion dollars in 1970, 301.3 billion dollars in 1980, 577.3 billion dollars in 1985 and 1047 billion dollars in 1990. Hence, it is imperative to evolve new ideas for increasing the quantity and quality of aid flows to LDCs. For the purpose, it has been suggested (a) to give substantial share of liquidity created by IMF through SDRs of gold sales to LDCs, (b) taxing international pollutants, MNC activities and non-renewable resources, and (c) imposing one dollar per barrel development levy by the OPEC countries and creating about $ 10 billion development pool a year.

The short fall in official development assistance from the levels targeted in the International Development Strategy has been a major deficiency in the structure of cooperation for development. Though this aid rose at the rate of 5% per annum since 1960 to 1975, in real terms it showed no progress. The LDCs' needs for concessional finance vary widely. The UN listed 33 LDCs as being most in need of aid. These countries have per capita income less than $ 200. India is one of them. LDCs are increasingly taking resort

to short term market borrowings on bond markets or direct investment by MNCs. Private capital flows are becoming prominent. The net receipts by LDCs of loans from multilateral institutions at market rates rose from average of $ 130 million in 1960 to $ 690 million in 1975-76 and $ 900 million in 1982. The share of regional banks in total 'hard' lending by multilateral agencies that was just 1 per cent in 1961 rose to 42 per cent in 1982. The share of private debt in total debt of LDCs over 1967-80 period has gone up from 21 per cent to 46 per cent.

The unprecedented expansion of International Capital markets could be deemed as a counter-part of the increased trade imbalances among major trading countries. But the bulk of private investment in LDCs tends to be concentrated in a few countries only. The UNCTAD could take up to workout an international code for private investment in LDCs.

The LDCs also have taken resort to increasing amount of commercial borrowing over the last one and half decades. The LDCs' net borrowing from DAC sources (excluding the Eurocurrency loans) was on an average $ 1.65 billion in 1961 to 1969 or 18% of net total resource flows from DAC countries. By 1975, it was $ 9.01 billion or 39% of net resource flows. The LDCs' borrowing from Eurocurrency which was only $ 1.5 billion in 1971 shot up to $ 25 billion in 1982. In general the Eurocurrency borrowing is expensive, yet, its increasing popularity is due to lack of alternative finances.

The Eurocurrency deposits have increased about more than 10 times over 1969 and 1980 period. The Eurocurrency revolving medium-term credit is for 3 to 8 years with floating rates. The Euro bank system is nothing more than a net-work for distribution of liquid dollar funds from surplus regions to deficit ones in the World economy. The growth of these deposits has added less than 1 per cent to the developed countries monetary growth.

The Euro market is very sensitive both to speculative monetary investments and to change in the economic and financial policies of the capital exporting countries. The Euro-market loan made on floating interest rated make the base volatile to finance long term industrial and infrastructure projects. Further private investment is important to LDCs as it brings with it technology management and training. The Euro-currency loan brings with them none of these. To quote Sir Ale Douglas Home "The key word for the future economic development is partnership. But there is no partnership between lenders and borrowers in the Euro-currency market, not only because the lenders and borrowers are remote from each other but also because the lenders have no direct involvement in the enterprises in which their funds are ultimately invested."[5]

Private external financing became more popular in 70s due to greater flexibility, convenience and the lower rate of interest. This has increased the vulnerability

of the developing countries to the events in world financial markets. The increasing bank lending at variable interest rates, has transmitted the effects of industrial countriesmonetary and fiscal policies to the developing countries through interest changes. [6]

In 1960's the real interest rate, that is market rate less the rate of inflation in the Eurocurrency markets averaged only 2.5 per cent. The marginal efficiency of borrowed capital, the rate of return over cost from the use of additional capital was high. The current receipts could meet the debt obligations. In 1970s the spiralling inflation caused by oil shocks of 1973 and 1979, altered the matrix of economic relations and the international payment patterns witnessed sharp imbalances. The developed countries misconceived cost push inflations and demand-pull inflation and adopted restrictive policies —tight money supply, higher interest rates and trade barrier to remedy the situation. Consequently, the debt cum growth strategy of developing countries suffered a severe jolt. Interest rate shot up to 10 to 12 per cent. The export earnings of the developing countries failed to meet the repayment obligations. In 1960 the recessionary trend worsened and the industrialised countries adopted stringent measures to control the growth of money and credit. Official Development Assistance (ODA), grant and soft loans declined. The assistance became more and more bilateral, governed more by commercial and political interests than by development interest. The real interest rate of OECD rose from 2% in 1981 to 6% in 1983.

The advanced countries met their deficits by attracting capital at higher interests. In seven largest industrialised countries U.S. a Japan, W. Germany, Canada, France, Britain and Italy, the ratio of Govt. debts to their GDP doubled from 21% in 1971 to 41% in 1983. As the relative size of the debt increased, interest expenditure also grew. To maintain minimum development programme, developing countries had to go for commercial loan. The long term rate of interest rose steeply. About 85 per cent of debts of the debtor countries are transacted through US dollars and US dollars buoyed by 40 per cent. The UN statistics shows that more than one third of the export earning of the developing countries is spent on interest payment alone.

The IMF in order to achieve the balance of payment and stability in the economies of the developing countries has been recommending "austerity .and sacrifice-oriented financial discipline".

Debt Crisis and the Low Income Countries

The debt crisis of the Low Income countries causes special concern. Though their debt constitutes only 11 to 12 per cent of the total debt of the Less Developed Countries,

its steady growth against their weak repaying capacity is a serious matter. The nature and magnitude of the debts are given below.7

Low Income Countries	1973	1983
Outstanding debt	$ 25 billion	$ 88 billion
Ratio of debt to export	22%	14.9%
Share of official creditor	85%	83%
Debt Service Ratio	14.3%	13.3%
Interest Ratio	6.1%	5.5%

Of the total debt of $ 88 billion, about $66 billion belong to Africa. Most of the debt is official, multitaleral or bilateral, for which. the interest is not that high. But then the debt hangs heavy on the LIC due to various reasons.

(i) Firstly, the LICs suffer from structural rigidity. They are not able to shift the resources to produce tradable goods. As a result, foreign loan does not lead to quick increase in export earning.

(ii) Secondly, these countries lack dynamism and diversification.

(iii) Thirdly, the terms of trade have gone against the LIC in recent years. With 1980 = 100, the terms of trade for LIC stood at 108 in 1979, but came down to 87 in 1983. African countries suffered 25 per cent decline in their terms of trade during the period. Thanks to the declining terms of trade, net transfer of resources declined by 30% for India and Pakistan.

(iv) Finally the loans are mostly tied to a country or to a project. These countries having low absorptive capacity, they cannot disburse the funds for which they are sanctioned.

Interest payment and the Debt

The problem of debt assumes seriousness because of the increasing burden of interest. It is estimated that the annual interest payment at present is larger than the annual increase in world income. The real rate of interest is higher than the rate of growth of output and the stock of debt is larger than GNP of the world.

Henry Kaufman estimated the outstanding debt at $ 14.3 trillion at the end of 1981. It grew at the rate of 15 per cent during last decade. The world GNP was estimated to be about $ 10 trillion at the end of 1931.

World GNP in real terms grew at the rate of 2 per cent and average price grew at the rate of 4.5 per cent in dollar terms in early 80s. So world GNP in money terms is estimated to have grown at the rate of 7 per cent. World debt being 1.4 times of GNP, interest payment becomes almost twice the increment of world income.

Riskless long term interest in 1983 in Japan was 7.2 per cent, 11.8 per cent in U. S. A., the average being 9.4 per cent. In USA 60 to 80 per cent long term commecial loan in early 80s was on floating rate. This makes indexation loan contracts impossible.

The Global Picture

The outstanding world debt presents the following picture :

Type of Debt	Outstanding World Debt. (in trillion dollars) 1971	1981
Domestic Bank claims of 141 countries	1.7	6.6
Other domestic Financial institutions	1.1	4.2
Domestic & International bond	0.8	0.3
Total :	3.6	11.6

Credit market debts as per cent of various countries were as follows :

Counties	1973	1981
U. S.	159.7	167.3
Japan	155.4	201.3
Germany	102.2	132.4
U. K.	132.0	104.3

Source : "Money and Finance in World Economic Order" editing Panchamukhi and others 1987 p. 71.

More than half of the debt of the developing countries owe to commercial banks and most of them are in dollars. The average interest rate is 12 per cent. The interest rate has doubled during 1976-82. When their commodity prices are falling year after year, the real interest rate is bound to be more than the nominal 12 per cent. For non-oil developing countries, the proportion of export absorbed by interest payment was 23 per cent during 1979-83.

The upward shift in interest is not due to high profitability or uncertainty premium. It is due to budgetary deficit of the lending countries. Inflation is said to be beneficial to the debter. But this has not been a fact in case of international debt. Deregulation of interest rate, widespread use of floating rates and shortening of maturity eliminated the benefit from inflation.

At low rate of growth of world economy depressed level of capital formation and high interest, demand for loan is dictated by the need to pay interest. A growing proportion of income is absorbed by interest payment. This has affected redistribution of income and asset ownerships.

Interest payment forms about 42% of the export earning of Latin American countries and 12 per cent of other developing countries.

Measures suggested

It was apprehended that by the end of 1988, the debt of LDCs would reach $ 1.2 trillion. There is need for formation of debtors' clubs for different regional and Sub-regional groups to focus on the enormous debt that inhibit growth.

Paris club and Aid Consortium have come out with massive loans to help the LIC, UNCTAD sanctioned debt relief of $ 5.7 billion by 1981. The Commission on International Development (Pearson Commission) in 1964 observed that debt relief is a legitimate aid. The common wealth study group wanted complete writing-off of debt and asked ODA to make multi-year rescheduling of debt.

Time has come when steps should be taken to strengthen south-south cooperation and promote collective self reliance to overcome attitudinol barrier and information gap.

There should be greater access for the developing countries value-added products in developed economies, long term contracts, buy-back arrangements and joint import procurement and market sharing arrangements.

Payment arrangements through inter-regional banks extension of settlement period etc. may be made.

High capital intensive technology of MNC may not be economical to the LDC. Hence, the investment of Korea, Hongkong, Indonesia and India in other LDCs may be appropriate. India has undertaken 190 joint ventures in 35 countries providing investment of $ 100 million. 160 projects have become operational.

"By combining their resources, technology and experience, the developing countries can overcome problems of trade and technology transfer and speedier development".8 There should be uniform Investment Guarantee Schemes end Foreign Investment Promotion Centre for Asian region for the purpose.

The developing countries account for 30% of world trade. south South trade has been less affected by recent economic changes in the world. South-South trade in 1985 was more important in agricultural rawmaterials (28%), fuel (27%) and manufactures (24%), West and South-West Asia have been more oriented to developing regions. The potentiality of this trade should be exploited.

Provisions of development banking facilities among developing countries is another necessity for the purpose.

A new doctrine which may be called "the doctrine of the reciprocal ties" needs to be advanced and practised by the LDCs. The basic idea of the doctrine is that if a lender ties a loan to purchase from specified sources, the borrower should tie debt service to particular exports of the borrowing countries chosen by the borrower.

The domestic development strategies which are responsible for excessive indebtedness of the LDCs have to be speedily changed. Unconditional opening to foreign investment should be discouraged as it increases the drain from LDCs.

Larger R and D expenditure and allocation of these among carefully chosen areas of concentration in the LDC, have to be stressed. Grant of Patent rights for innovations other than those developed by their own residents to the MNCs be refused.

Intra-regional trade among the LDCs ought to be promoted so that dependence on the DCs would come down.

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4. Ibid P. 108

5. Ibid P 119

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External Debt Burden of India —Problems and Prospects

Dr. S. N. Misra

The Volume and Size of External Debt

Since the beginning of plan era, India has received a sizeable amount of external assistance. The external assistance is available from three important sources : (a) International financial institutions like IBRD, IDA and EEC etc., (b) foreign governments, (c) private commercial agencies. The total external debt outstanding in India up to 1986-87 can be seen in Table-1.

Table-1

Total External Debt—Planwise outstanding amount.

(Rs. in crores)

External debt (Planwise)	Authorisation	Utilisation	Percentage of utilisation to authorisation
1. Upto the end of Third Plan (1965-66)	5712	4509	78.9
2. End of Annual Plans (1968-69)	3173	2955	93·1
3. End of Fourth Plan (1973-74)	4172	4182	100.2
4. End of Fifth Plan (1979-80)	9844	7258	74.0
5. End of Sixth Plan (1983-84)	13575	9901	72.9
6. At the mid-year of Seventh Plan (1986-87)	15895	8887	55.9
Total	52371	37692	72.0

Source : Government of India, *Economic Survey*, relevant issues.

Table-1 reveals that the total outstanding authorised external assistance by the middle of seventh plan was Rs. 52,371 crores. By that year, the total utilisation of outstanding advance was Rs. 37,692 crores. Ratio of utilised amount of the total authorised external assistance was 72 per cent. The external assistance is mainly received in the form of loans, grants and commodity assistance under public law 480 and 665 programmes. It is revealed that bulk of the assistance is received in the form of loans, followed by grants and commodity assistance. Loans alone account for nearly 84.4 per cent of the total outstanding assistance. Loans are usually made available in two forms; repayable in foreign currency and repayable in rupees. Bulk of the external assistance is available under the condition of hard currency rule, i. e., the repayment of loan is to be made in foreign currency. It is further revealing that the bulk of external assistance in the nature of tied loans. In other words, they are tied to some projects. Untied loans are extremely limited. The tie-loans are available for projects like transport and communication, power projects, steel and steel projects, iron ore projects, industrial development and agricultural development assistance etc. It is further observed that bulk of the assistance is available at medium term (2.5 to 5 per cent) and at high rates of interest (above 5.0 per cent). Besides, bulk of the assistance is in the nature of long-term loans varying between 11 years and 20 years and above. Loans for a short period of less than 10 years is much less. Likewise loans carrying concessional rates of interest, varying between 1 and 2.5 per cent account for a smaller proportion.

The increased burden of external debt

The increased external assistance has imposed serious financial burdens on India. There is the serious problem of servicing the debt. India experiences considerable amount of difficulty in repaying the loans. To this extent the economy of the country is severely affected. Table-2 indicates debt servicing effort of the country over the years.

Table-2

External Debt Servicing in India.

(Rs. in crores)

Year	Gross utilisation	Ammortisation	Interest payment	Total debt servicing	% of debt servicing to gross flows
1961-62	791	58	33	91	12.8
1971-72	834	299	180	479	54.5
1981-82	1869	538	311	849	45.4
1986-87	3596	1186	853	2029	56.4

Source : Government of India, *Economic Survey*, relevant issues.

Table-2 indicates that between 1961-62 and 1986-87, gross external aid to India increased by 406 per cent. During this period total amount of debt servicing increased by Rs. 1938 crores or 2129 per cent. Moreover, debt-servicing as a percentage of gross aid flows which stood at 13 per cent in 1961-62, increased to 56.4 per cent in 1986-87. This shows that a larger part of the aid is mainly claimed for debt servicing. Consequently, net inflow of aid, which is the result of gross utilisation of external aid minus the debt-servicing, was only Rs. 368 crores and Rs. 1332 crores respectively between 1970-71 and 1986-87. This shows percentage variation over the period to the extent only 261 per cent.

The burden of external debt is further pronounced when the ratio of debt servicing to national income is taken into consideration. This can be seen in Table-3.

Table-3

Debt-servicing and National income.

(Rs. crores)

Year	External debt Service	National income	Debt serivice as % of N. I.
1961-62	91.0	13987	0.7
1971-72	479.3	37019	1.3
1981-82	849.0	132615	0.6
1986-87	2029.1	250155	0.8

Source : Government of India, *Economic Service*, relevant issues.

Table-3 indicates the ratio of debt service to national income. It is observed that the share of debt servicing to national income was 0.7 per cent in the year 1961-62. In 1986-87, the ratio of debt-service to national income was 0.8 per cent. Over the years, therefore, the proportion is rising. The proportion of national income devoted to debt servicing is an important indicator of the magnitude of effort required to service the debt. The higher the debt service expressed in relation to income, the more the effort involved in making service payment.

When the ratio of external debt to national income is analysed, it is observed that the ratio stood at 5. 1 per cent in 1961-62. This declined to 1.4 per cent in 1986-87. When the amount of debt-servicing to national income is subtracted from the contribution of external debt to national income, the net gain to the economy is nominal. This has, therefore, increased the real burden of the economy.

The burden of external debt is further highlighted when the ratio of debt-servicing to domestic savings is considered. This is seen from the Table-4.

Table-4

Ratio of Debt-servicing to Domestic savings.

(Rs. crores)

Year	External Debt service	Domestic saving	Debt-service as a percentage of domestic saving
1961-62	91.0	2093	4.3
1971-72	479.3	7508	6.4
1981-82	849.0	33668	2.5
1986-87	2029.1	63413	3.2

Source : Government of India, *Economic Survey*, relevant issues.

Table-4 show that the ratio of debt-servicing to domestic saving was 4.3 per cent in 1961-62. This stood at 3.2 per cent in 1986-87. Higher debt servicing is impinging seriously upon the availability of savings for domestic capital formation.

The gravity of the external debt burden is further pronuonced when the ratio of debt service to export earnings is taken into consideration. Higher export earnings exhibit the credit-worthiness of the debtor countries to receive aid. But it is observed that export earning of India is not only declining but also a major part of it kept aside for servicing the debt. This can be seen in Table-5.

Table-5

Ratio of debt-servicing to export earnings

(Rs. crores)

Year	External Debt-service	Export earnings	Percentage of debt-service to export earning
1961-62	91.0	680	13.4
1971-72	479.3	1607	29.8
1981-82	849.0	7781	11.0
1986-87	2029.1	12567	16.1

Source : R.B.I. , Report on Currency and Finance, 1970-71 & 1986-87.

Table-5 indicates that between 1961-62 and 1986-87, the ratio of external debt-servicing to export earning has increased from 13.4 per cent to 16. 1 per cent. As a result, valuable foreign exchange reserves of the economy are diverted towards foreign repayment of debt. Besides, this also discourages the donor country to provide more credit on account of limited export earnings of receipient countries.

A final indicator of the external debt burden of India is the ratio of debt service to tax revenue of the government. This can be seen in Table-6.

Table-6

Ratio of Debt-Servicing to Tax Revenue.

(Rs. crores)

Year	External Debt-Service	Tax Revenue	External Service as per cent of tax revenue
1961-62	91.0	895	10.1
1971-72	479.3	4505	10.6
1981-82	849.0	24142	3.5
1986-87	2029.1	49522	4.1

Source : Government of India, *Economic Survey*, relevant issues.

The ratio of debt-service to tax revenue indicates the fiscal burden involved in servicing the debt. Although a major part of the debt service is met external earnings, its impact on the budgetary resources of the central government is no less important. If corrective measures are not taken at the appropriate time, it will certainly impose serious burdens on the exchequer.

The causes of the debt burden are not difficult to seek. They are the outcome of a host of factors, such as low growth rate and productivity in the economy, excessive reliance on primary products for export earnings, lack of diversification and modernisation of the industrialised sector, poor export earnings due to protectionist policies and procedures adopted by industrialised countries, growing competition in the international market, recession in the industrialised countries, inadequate availability of concessional finance from international financial agencies, growing inflow of external finance from private commercial agencies with high rates of interest, increased flow of external assistance on tied account, as for instance project tied assistance, increased oil prices charged by oil producing countries and the like. All these put a serious burden on India.

Some steps to reduce the burden

In the light of the growing external burden in India, a few realistic measures need be adopted to reduce the external debt burden.

It is suggested that the external assistance need be utilized for development activities in the economy. What is suggested here is that external assistance need be deployed mainly for improving the real growth of the economy. It must contribute towards the growth of real gross national product and export earnings. In the past this was broadly not followed. As a result, income generation could not take place on a large scale.

The developing countries need to diversify and modernise their economies This will help to substitute imports and at the same time meet the growing international demand for products. "Diversification of production and of exports is necessary to promote and maintain export earnings whose maximisation is the best way of meeting the debt service payment."[5] Broadly interpreted, the process of diversification of production including the accretion of capacity to produce manufactured goods becomes equivalent to the transformation of the structure of production.

The developed countries should make the terms of assistance more generous by scrapping interest charges on loans and granting pure aid. If loans are substituted by grants, the debt servicing obligation could be reduced. It is suggested that, grants in the total flow of aid should increase along with a softening of loan terms.

The developed countries should adopt more liberal trading policies. It has been suggested that the developing countries could be helped more not by getting loans on concessional terms but by obtaining for their products preferential treatment in the markets of the developed countries. Exports of the less developed countries to the developed countries can be encouraged if they are given preferential treatment in the matter of import duty. Trade not aid is the slogan which summerises this view. It is urged that the adoption of a more liberal trading policy by the developed countries will solve both the foreign exchange problem and the debt servicing problem of the less developed countries. It is further suggested that the developed countries should encourage the developing countries to repay loans in domestic currency. Besides, they need to utilize that currency for the repayment of debtor's exports to their countries.

Greater domestic resource mobilization adds to the absorptive capacity of a developing country. This approach refers to the capacity of an economy to use both domestic and external capital productively in order to obtain a positive minimum rate of

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5. Misra, D. K., Public Debt and Economic Development in India, Print House (India), Lucknow, 1985, p. 504.

return. Foreign loan is considered as a catalyst for mobilising internal resources for increasing production and productivity. Debt service problem can be lessened to a great extent if India enlarges her absorptive capacity through progressive improvement of all those conditions related to it. It is suggested that India should implement its economic policies and export policies properly to generate more savings.

Special encouragement should be given to producers and exporters of equipment for the development of infrastructure, industrial machinery, machine tools and consumer durables to meet the emerging needs of other developing countries. The government should initiate measures to improve competitiveness of Indian goods in international market. Attention should be paid to modernising our marketing and promotional techniques. An improvement in external market conditions for India's exports would contribute greatly to the solution of her debt servicing problem.

In negotiating loans in future India must try to obtain untied loans so that the could utilise them efficiently and speedily. To keep the debt servicing problems within manageable limits development aid should be utilised for export increasing and import substituting. India has to give more emphasis on agricultural development to conserve foreign currencies. Besides she should aim at self-reliant growth on all fronts.[6]

Industrialised countries are now passing through a recessionary phase. There is need for better policies for a structural change in developed industrialised countries. Such a structural change will improve the climate of investment and lead to a moderation of interest rates. As is rightly expressed by IMF : "The developing countries gain from lower interest rates in the industrial world which serve to reduce debt service burden and allow an increase in import volumes".[7]

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Third World Debt Crisis : Legacy of Neo-colonialism

Dr. Kishor Samal

The shift of capital from one country to another is an essential feature of the world capitalist system. Even prior to imperialism, the export of value in order to appropriate the surplus value produced in other nations was prevalent. The export of capital is based on the domination of monopoly. At home, some amount of capital cannot be invested profitably. This surplus capital threatens to affect the profit rate. This condition arising from the very nature of monopoly determines the objective necessity of exporting capital or other countries. On the other hand, in the developing countries, where capital is scarce, better conditions for the investment of this capital are found in the form of cheaper labour and raw material. This determines the possibility in addition to the necessity of exporting capital to other countries.

There are various forms of exports of capital. It may be in the form of functioning or loan capital. Functioning (entrepreneurial) capital is invested by its owners themselves. The export of functioning capital may be in the form of direct or portfolio investment. Loan capital, is exported to secure a fixed amount of interest to foreign manufacturers or government. The exporter of loan capital may be a private institution or government or a multilateral agency.

As neo-colonialism develops, changes occur in the relative strength of capital exporting countries; the volume, pattern, forms and specific purpose of the export of capital—both functional capital and loan capital—and its geographical distribution. These changes were specifically marked after the second world war and felt seriously in 1980s, since some developing countries fell into debt trap and others into debt crisis.

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The external debt of the developing countries rose to $1,320 billion—equal to about half of their combined gross national product (GNP) at the end of 1988 (Table 1). According to the world Bank report entitled "World Debt Tables—1988-89", disbursement of long-term loans to countries reporting the Bank's debtor reporting system amounted to $ 88 billion in 1988. [1] But a $ 5 billion rise in interest payment led to a record net resource transfer of $ 43 billion (net disbursement less interest payments) from developing countries to their creditors in 1988.

Table-1

Growth of Total External Debt of Developing Countries

(billion U. S. dollar)

Year	Total external debt
1982 ..	831
1983 ..	894
1984 ..	933
1985 ..	1051
1986 ..	1152
1987 ..	1282
1988 ..	1320

Source—I M F Survey Vol.18 No.1 Pg.9

The report also highlights developments for the two groups of debt-distressed developing countries—those in sub-Saharan Africa and the highly indebted countries—which have grown more slowly than the average rate for developing countries and have suffered from sharp decline in their investment ratios, relative to G. N. P., in the 1980s. The sub-Saharan Africa region's external debt grew by 6.5 per cent in 1988 to $ 138 billion compared with a rise of 18 per cent in 1987. The total debt of highly indebted countries including Brazil, Chile, Mexico and others, rose by $ 1 billion in 1988 to $ 529 billion. This compares with an increase of 9 per cent in the previous year.

India's total external debt has increased from $ 8, 128 million in 1970 to $ 41,088 million in 1986; and the average interest rate has increased from 2.5% to 5.1% during the same period.[2] (Table- 2).

Thus there is increase in debt of developing countries in real terms. The increase in debt in real terms was about 35 per cent from 1982 to 1985.[3] Decline in debtor country's export price has raised the value of debt in real terms (Table-3). Along with this, almost the whole burden of interest payment has fallen on the debtor countries in an international economic environment marked by (i) falling prices of their export, (ii) rising price of their imports, (iii) growing protectionism practised by developed countries, (iv) high interest rates, and (v) policy of liberalisation practised by them under duress.

Table-2

External debt of India : Selected Indicator

(Million U S dollar, if not mentioned otherwise)

	1970	1986
1. Total External Debt	8,128	41, 088
2. Total Disbursement	956	4,491
3. Repayment of principal	380	2,355
4. Net Flow	576	2,137
5. External public Debt outstanding and disbursed as a percentage of G.N.P.	15.0	14.0
6. Debt service as percentage of G.N.P	1.0	1.2
7. Total interest payment on external public debt.	198	1,115
8. Average interest rate	2.5	5.1

Source : World Development Report, 1988, Tables 16-20

Table-3

Export Unit Value Index of Developing Countries

Year	Export Unit Value Index.
1980 ..	100.0
1981 ..	106.4
1982 ..	102.1
1983 ..	91.8
1984 ..	90.9
1985 ..	87.4

Source : R I S occasional paper No. 12

The prevalence of these conditions is the legacy of neo-colonialism practised by the advanced capitalist countries through bilateral aid, multi-nationals and multi-lateral agencies like I M F and I B R D. We will analyse how these forces operating in developing countries, particularly in India, are able to appropriate the surplus value produced in India and thereby making the country unable to find sufficient fund to repay the outstanding debt.

II

The amount of loan drawn by India in 1981 under I.M.F.'s extended financial facility was SDR 5 billion of approximately Rs.5, 000 crores, half of which was at the commercial rate of interest. This loan was to meet the balance of payment difficulties.

In applying for assistance under the extended facility a member is required to present a programme for the whole period of arrangement and a statement of the policies and measures to be followed in each 12 month period to meet the objectives of the programmes. Two of the major conditions of this loan was (i) devaluation of Indian Rupee, and (ii) liberalisation and privatisation.

Indian Rupee was once devalued to get IMF and IBRD assistance in 1966. Indian rupee was devalued directly in June 1966 by 36.5 per cent. After devaluation, the new exchange rate at Rs.7.5= $1 was fixed on June 6, 1966. As a result of devaluation, India became more dependent on foreign aid, since instead of rise in export as expected earlier, India's exports fell by $ 206 million in the first post-devaluation year; and her external debt in 1967 alone increased by over $ 1,000 million. It is precisely devaluation which the I.M.F. keeps pressing on developing countries which are extremely dependent on imports, thus helping western industrialised countries to earn more. Due to devaluation, the developing countries' imports will be costlier and export will fetch less foreign exchange which will put a developing nation like India in a situation by which they will be unable to earn a surplus to repay their debt.

Not only Indian Rupee was devalued in 1966 at the instance of I.M.F—I.B.R.D, it was also devalued in 1981 through the back door. India was forced to devalue Rupee for the loan of S D R 5 billion. But for political reasons, the Govt. does not make conditionality public. Instead of one stroke devaluation as in 1966, it was possible to effect a substantial devaluation over a period of time. The value of rupee is worked out on the basis of major currencies of countries with which India has trade relation. In this basket, the American dollar has the largest weightage and the pound sterling is used as the currency of intervention. During the negotiation of loan from the I.M.F. Indian Rupee was devalued through the back door method. Thus by 27th July 1981, Indian Rupee had depreciated by 14.6 per cent against U. S. dollar since January 1981.[4] The value of Rupee fell from Rs.7.87= $ 1 in January 1981 to Rs. 9.02 = $ 1 in July 1981. During this

period there were 35 changes in the middle rate of Rupee resulting from adjustment made by Reserve Bank of India in the official Rupee—Sterling exchange rate.

Along with this, since export-import policy of 1981, there is also a trend towards liberalisation of import and multinational investment, and move towards privatisation under the pressure of the I.M.F. [5]

The role of I.B.R.D, the sister organisation of the I.M.F. is similar. Despite the special status of India in the organisation, the World Bank's overall policy towards India has been to concentrate on the creation of infrastructure. The hidden objective of this policy seems to be to obstruct development of industrial enterprise producing capital goods. The Bank's primary aim in India is to consolidate the private sector and to strengthen foreign capital in that sector.

Apart from growing importance given to the private sector, multinationals are allowed to have majority participation in the industry which was given aid by IBRD. The fertiliser industry is the best example in India in which World Bank showed favour to a U.S. firm C.F. Braun for Thal-Vaishat fertiliser plant. Similarly, in 1982, to give loan to S.E.B.s the World Bank insisted that India should accept a loan from Canada which was linked to the purchase of aluminium rods from that country at a price which was 45 per cent higher than the ruling market prices then in the country[6]. Thus the World Bank acts as the representative of multinationals of the advanced capitalist countries.

Thus the problem—the problem of finding surplus funds either for investment or for repayment of debt—are externally caused by fall in the price of export commodities or rise in prices of imported goods of India, which is due to devaluation of Indian Rupee and role of multi-nationals owing to liberalisation in the country under the pressure of multi-lateral agencies like the I.M.F. and World Bank.

Multinationals in India, import raw materials from its parent company at a price higher than the ruling price and export the finished products at a price lower than the ruling international price to its parent company who, in its term, sells the same product at a higher price in other countries thus earning a huge amount of profit by depriving the original producing country. They also siphon off a major portion of the profit in the form of royalties, dividends to their advantage, that too without revealing the secret of technology which they claim to offer. This will also happen in the Pepsico Project. [7] In the Pepsico Project the export of fruits and vegetables takes place in order to import soft-drink concentrate. It has been calculated that while the average cost of flavour per case of soft drink for the indigeneous one is only Re. 0 25 inclusive of all duties and taxes, the cost per case of the imported flavour is Rs. 2.50. The high cost of the imported flavour only means that they are over-valued in order to pay grand royalties.

The perfume and flavour Manufacturing Association has calculated that the Pepsico Project will lead to closure of at least 100 small-scale flavour units in the country. Similarly, food processing industry which consists of 2,525 units has capacity utilisation of only about 35 per cent, when Pepsico Project will add 15 per cent capacity, it will close the existing units. Thus, multinationals, not only drain the surplus out of the country but also destroy the productive capacity of the industrial units in the host country.

Not only multinational, but also bilateral aid from advanced capitalist countries has an in-built mechanisn of destroying productive capacity of the debtor countries and thus making them more dependent on external debt. For instance, the great symbol of American intervention in Indian economy was the enormous rupee debt to U.S.A. incurred in payment for gain shipment in 1960s under PL 480. The debt remained equal to a third of the Indian money supply. Far from being an act of generosity, the wheat had been dumped on India to sustain American farm prices and the larger purpose had been to injure Indian agriculture [8] The purpose of bilateral loan—which is mostly "tied"—is to further strengthen the bonds of technological dependence of developing countries on advanced capitalist countries under the guise of inter-dependence.

The capitalist countries not only appropriate surplus created in productive activities in developing countries directly through bilateral loan, and indirectly through multinationals and multi-lateral agencies, but also through import of human capital by way of brain drain. Due to brain drain, according to an UNCTAD study, the contribution of developing countries to professional services in U.S.A., Canada and Britain during 1961-72 was estimated to be around $ 46 billion. This amount was as large as the official development assistance flowing from these countries over the same period. While the income transferred through brain drain to U.S.A. in one year (1970) from the developing countries is estimated at $ 3.7 billion, the U.S.A. development assistance to developing countries in the same year was only around $ 3.1 billion. So in some quarters, there is suggestion for "Brain Drain Tax", in which developed countries should agree to share the revenue from the income of citizens of developing countries.[9]

Thus the world capitalist system has an in-built mechanism of appropriating the surplus value produced in developing countries by advanced capitalist countries through export of capital—both functional and loan—which is based on monopoly domination. This makes capital-importing countries more dependent on external debt. As neo-colonialism practised by advanced countries with monopoly domination develops, the volume of the external debt in the various forms of export-capital grows in developing countries drawing them into the debt trap.

But, in real terms, the developing countries are not indebted to developed countries, rather the developed countries are indebted to developing countries, though from the accountant point of view developing countries seem to be indebted to advanced countries.

Notes and References

1. *IMF Survey*, Vol. 18, No. 1, "World Debt Tables"

2. See, *World Development Report*, 1988

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4. For the details of repercussion of IMF loan, see, Kishor Samal, "IMF and India—I Back-door devaluation ?, II Toeing the line", *Business Standard*, Calcutta, 16. 10. 81 and 19. 10. 81.

5. For the trend toward privatisation and liberalisation in India ; see Kishor Samal, "Case against Privatisation", *Mainstream*, July, 1988.

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Debt Crisis in the Third World Countries

Sri Uttam Charan Nayak

I

Debt problem of the developing countries is an important aspect of the present-day global economic malaise. The debts of developing nations which stood at around $ 100 billions in 1971 have increased over the decade by more than six times to $ 626 billion at the end of 1982. This has further increased to $ 895 billion in 1984 and currently is nearly $ 1300 billion. Of this huge amount, as much as 50% is held by private lenders. Only 16 countries largely Latin American countries account for 58 per cent of the debt concentration. Four of them—Mexico, Brazil, Argentina and Chile—have recently had to defer repayment of principal. At the end of 1982 Mexico had a debt of $ 80 billion while Brazil's debt had reached a staggering figure of $ 87 billion. Venezuela and Argentina are the other two Latin American countries which have serious debt problems. While Argentina's debt is stated to be in the region of $ 43 billion, the debt of oil-rich Venezuela is of t he order of $ 28 billion. Nigeria incidentally is another third world country whose debt burden ($ 9.3 billion) will be aggravated by the down trend in crude prices. This character of the distribution of debt amounts in the developing countries has made the world financial system more susceptible and vulnerable to frequent shocks. With a continuing deterioration in their balance of payments, with the global recession showing no sign of tapering off and with their oil bill remaining the same, the poorer nations see no way of getting out of the debt trap.

II

Causes of Debt Crisis

The Present system of international capital flows to the developing countries took shape after the Second World War. Official intermediaries like the World Bank began borrowing from the capital markets and lending to credit-worthy developing countries. Official lending was supplemented by development assistance, grants and concessional loans from the governments of high income countries. Development assistance grew steadily in real terms over the last two decades until 1981 when it declined.

Developing Countries also have access to several types of commercial credit—export credit, direct foreign investment by multinational companies and commercial bank credit—which grew especially rapidly in the seventies. The expansion in commercial bank lending began before the oil price increase of 1973, but there was a surge of lending in 1974 and 1975 as commercial banks "recycled" OPEC (Organisation of Petroleum Exporting Countries) savings to oil-importing developing countries.

During the seventies, the net flow of capital to developing countries—official lending, aid, export credit, direct investment and commercial lending together tripled in real terms. This expansion in international investment contributed to and was supported by, the dynamism of the world economy as a whole. Commercial lending increased by eleven times in real terms, swelling from one-fourteenth to one-fourth of the total flow of capital to developing countries.

Very little commercial lending has been attracted to the low income developing countries. Even though individual investments in low income countries may yield high returns, the poverty and narrow economic base of the low income countries make it risky for them to rely much on commecial borrowing. Most low income countries still need to make basic public investments in infra-structure before industrialisation. Hence they depend on concessional assistance for the foreign capital they need. In contrast, some of the middle income developing countries have provided fertile ground for commercial lending. The economies of these countries are dynamic and diversified. The expansion of lending to some of the middle income countries and the resulting debt is due to their vitality and growing maturity.

The present payment system of the developing countries is not by solvency but by means of liquidity. Liquidity refers to the capacity to meet obligations in the short-term. If the price of a staple export falls or the prices of major imports rise, a country may have trouble in meeting its obligations on time. Liquidity problems can arise even for countries with no underlying solvency problems. Solvency refers to the capacity to carry a certain level of debt over the long-term. A country's ability to pay back debt depends on growth in its national income and long-run ability to export. So a growing economy can safely carry a growing debt. But the developing countries could hardly manage to achieve average growth rates between 5 and 6 per cent a year throughout the sixties and seventies. The only group of developing countries which suffered a major slump in the seventies was the smaller low income countries mostly in Sub-Saharan Africa.

In spite of slackening in the pace of development the LDCs were able to maintain fairly high saving and investment rates up to 1980; these rates declined after 1980. In low income African countries, the saving rate declined significantly after 1973.

The investment rates were more or less maintained at high levels with increased external borrowings. The net resource in-flow in all the developing countries increased from about 1 per cent of GDP in 1973 to 2.3% in 1980 and 3.2 per cent in 1981. But this net resource inflow declined after 1981 to 2.5 per cent in 1982 and 0.7 per cent in 1983. Because of the heavy burden of external debt, the debt service ratio has increased to almost 20 per cent of exports and even the interest payments have risen to 2.8 per cent of GNP in 1984 (Table-1).

The global recession has contributed greatly to current difficulties. Between 1980 and 1982, falling export income and rising debt service burden have together had a negative impact of about $ 70 billion on the balance of payments of the developing countries. For the oil-importing developing countries, the ratio between the payments on medium and long-term debt and export income jumped from 18 per cent in 1980 to 24 per cent in 1982. The ratio between debt outstanding and exports jumped too—from 1.1 to 1.3. The top 20 borrowers account for three-fourth of Third World debt and for them the ratio between payments on medium and long-term debt and export income has climbed from 26 per cent in 1980 to 34 % in 1982. The four big borrowers who had to delay payment of principal, had faced payments on medium and long-term debt that exceeded 50% of their export income in 1982. These high debt service ratios had their origins primarily in the recession. The exports of the developing countries were virtually stagnant in 1982. The terms of trade and export prices deteriorated for most developing countries, making the real burden of their debt even greater. The low income countries have been particularly affected by the fall in commodity prices. These nations suffered a 30% drop in their terms of trade between 1979 and 1982.

About half the increase in Third World debt service payments since 1980 has been due to higher interest rates. Real rates of interest averaged 2 % in the sixties, were negative in the mid seventies but then jumped to 5 % by 1981. The main cause of high interest rates has been the combination of anti-inflationary monetary policies and increased budget deficits in the industrial countries. A one-point increase in interest rates costs Mexico, Brazil and Argentina $ 1.2 billion a year. The same one percentage point increase in the interest rates of the developed capitalist countries would increase annual debt service cost of the LDCs by $ 8 billion by 1990. The burden of high interest rates has been especially onerous for the middle-income developing countries.

III

Among the several measures to combat the problem of international debt, discussed by the IMF's Interim Committee on April 9, 1986 was the Baker plan for bank lending to debt ridden countries and the one recent model plan initiated by the World Bank for every poor debtor countries.

(1) The Baker Plan

Former U.S. Treasury Secretary, James Baker, had presented a three-part new debt rescheduling plan for the less developed countries in 1985.

(i) Firstly, according to this plan, commercial banks should provide $ 20 billion in new money over three years to 15 big debtors who do not have acces to voluntary credit viz . Mexico, Brazil, Argentina etc. Some may be lent through semi guaranteed World Bank co-financing arrangements. Mr. Baker himself expects foreign banks to put up $ 13 billion and US banks about $ 7 billion. Second, an extra $ 9 billion over three years should be provided by the world Bank and Inter-American Development Bank to the big debtors. Third, a $ 2.7 billion in repayments due to flow back over the next 6 years to the IMF trust fund should be reserved for the poorest countries with chronic balance of payments problems.

The Baker Plan had been supported by the Bretton Woods Committee of large US banks and trusts.

(2) World Bank Model to provide succour to debtor nations

A scheme called "Model for Adoption and Growth" was formulated by the World Bank with a view to meeting the debt problems of these nations. This aimed at injection of resources into them and organising their economic rejuvenation. This was intended to enhance the credit-worthiness of these countries. The model was designed to handle specific cases of 17 particularly heavily indebted nations. On successful implementation, the plan was expected to yield a yearly growth of at least 1 % in domestic consumption and 4 % annual economic growth in real terms. Under the programme bank loans to the Third World were expected to increase substantially from $ 11.4 billion in 1986 to $ 17 billion in 1987, $ 19.5 billion in 1988 and to $ 21.5 billon in 1989.

(3) World wide Banking Cooperation

There was another proposal given by Prof. Alexander Lamfalussy, the General Manager of the Bank for International Settlements (BIS) and an authority on banking and finance. He called world wide co-operation between all banking systems involved in international lending activities. He dealt with two major aspects of the structural changes in international financial markets. These were the "global financial integration and financial innovation" in world money market.

(a) As evidence of global financial integration, he cited the growth of higher international financial flows, huge increase in the size of inter-bank market between the countries in the BIS reporting area, the rising number of participant countries, growth in the number of foreign branches of banks and the growing importance of banks international business.

(b) Among the major financial innovations the notable were the syndicated bank loans, the international currency swaps, the fixed price options and the hedging of option positions (whereby banks in Europe can cover their customer's options with those in the US) and the forward rate arrangements.

All the same, even with the growing concern over the financial revolution, he thought it desirable to have care, caution and concern for managing the banks. Mr. R. N. Malhotra in his presidential remarks observed that heavy resort to the new instruments involved risk but the banks had shown their ingenuity in distributing the risk.

(4) IMF's Special Adjustment Facility for poor countries

IMF announced in March 1976 a new loan pool of $ 3 billion to support growth-oriented programmes in deeply depressed countries. Under the new plan, the IMF loans would be provided at 0.5 % annual interest and to be repaid in 10 semi-annual instalments. Eligible low income countries with annual per capita income not exceeding $ 800, seeking IMF Special Adjustment Facility (SAF), would be required to develop growth oriented economic reform programmes in consultation with IMF and the World Bank. The eligible borrowers including 60 developing nations among which the biggest borrowers were likely to be Pakistan, Bangladesh, Sri Lanka, Ghana, Kenya, Zaire, Zambia and Tanzania. These countries have relatively large credit quotas among poor nations.

(5) Brandt commission's suggestion

To meet the acute global financial challenge, the capitalist system has no other means to inject more and more money for circulation of commodities in the international economy. Increasing money supply and credit thus becomes the only "panacea" in the existing capitalist order. Almost all the theoreticians and advocates of the system prescribe this patent medicine for curing the patient. The Brandt Commission in the early 1980 advised for granting more concessional aid, direct investment and long-term finance to the less developed countries. It also favoured extension of more medium term credits. Financial aid, according to the Commission, is essential for the survival of the poorer countries.

Table-1

Saving, Investment, Resource Inflow and Debit Indicators.

	1980	1981	1982	1983
A. All LDCs				
(i) Investment	26.7	26.0	24.6	24.7
(ii) Saving	24.4	22.8	22.1	24.0
(iii) Net resource inflow	2.3	3.2	2.5	07
(iv) External debt / exports (%)	89.8	96.8	115.0	130.8
(v) External debt service ratio (%)	16.0	17.6	20.5	19.0
B. Low Income Africa				
(i) Investment	18.7	17.3	16.2	14.7
(ii) Saving	9.6	7.3	5.9	5.4
(iii) Net resource inflow	9.1	10.0	10.3	9.3
(iv) External debt / exports (%)	175.8	216.6	260.6	279.5
(v) Debt service / exports (%)	12.5	13.8	15.7	16.5

Note—per cent of GDP

Source : World Bank World Development Report, 1985

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External Debt Crisis in Developing Countries

K. K Sen

Introduction

The world economy has been passing through a grave crisis. Both the developed as well as developing countries have been affected by it. Many developed countries have been suffering from unemployment, intlation, trade and fiscal deficits. Large accumulation of surplus reserves by some others also exerted a destabilising intluence. Wide fluctuations in exchange rates and inner-state capital flows added to the confusion. The October crash of 1987 sent tremors through out the world's money and capital markets and could have contributed to a serious recession.

For the Third World * countries the situation was still more serious. The loans which were incurred by the developing countries earlier, when real interest rates were low and export markets were rapidly expanding suddenly proved to be a crushing burden. In the early eighties the problem assumed crisis proportions and many Latin American and African countries were on the brink of financial bankruptcy.

During the past six years there has been a fall in interest rates, economic recovery in the developed countries and also a great fall in the price of petrol from $ 35 a barrel to less than $ 18 ; still the heavily indebted countries have not succeeded in reducing their outstanding external debts. The present paper analyses some of the factors responsible for the present debt crisis in the developing economies and puts forth certain suggestions to mitigate the problem.

Magnitude of the Debt Problem

The third world debt problem took a serious turn in 1982 when Mexico failed to meet its scheduled debt service payments. The third world's debt in nominal terms rose from $ 140 billion in 1974 to about $ 560 billion in 1982, to $ 1190 billion in 1987. In 1988 the volume expected to rise further by another $ 55 billion.

All the developing countries are not affected by the crisis to the same extent. The degree of burden of external debt varies from region to region and country to

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* Terms such as Third World countries, the South etc. have been used to denote less developed countries.

country. The external debt of Latin American countries increased from $ 15 billion in 1967 to $ 357 billion in 1986. About 40 per cent of the total external debt of all LDCs is accounted for by Latin American countries. Latin American debt burden is unusually heavy. In 1985 Brazil, Mexico and Argentina were the three topmost borrowers—all Latin American countries. In case of Asia the external debt increased from $ 16 billion in 1967 to $ 250 billion in between 1967 to 1986. In 1986 22 sub-Saharan countries owed $ 101 billion. There are 17 highly indebted countries who owed $ 485 billion in 1986, which was about 40 per cent of a total debt. India occupies the sixth position in this group.

Table-1

Debt Indicators for Developing countries : 1980-86

Indicator	1980	1981	1982	1983	1984	1985	1986
1. External Debt (Billion $)	634.1	748.0	848.5	900.0	949.0	1018.8	1113.5
2. Ratio of Debt to to GNP (%)	20.6	22.4	26.3	31.4	33.0	35.8	35.4
3. Ratio of Debt to Exports (%)	81.6	95.0	120.0	133.8	133.9	149.1	171.4
4. Debt service payments (Billion $)	101.8	128.8	139-8	130.4	143.4	146.4	160.5
5. Ratio of Debt service to GNP (%)	3.7	4.0	4.6	4.5	4.9	5.3	5.5
6. Debt service Ratio	16.0	17.5	20.6	19.4	19.5	21.4	22.3

Source : World Development Report, 1987 & World Economic Outlook, 1987.

Table-1 indicates that the ratio of debt to GNP increased from 20.6 per cent in 1980 to 35.4 per cent in 1986. Similarly ratio of debt to exports jumped from 81.6 per cent to 171.4 per cent during the same period. Obviously external debt has grown at a faster rate than either the GNP or exports.

But much more serious is the burden of debt servicing (repayment of principal plus interest). Debt service payments increased from $ 101.8 billion in 1980 to $ 160.5 billion and was projected to rise to $175.6 billion in 1988. Debt service payments rose from 13.1 % of exports in 1980 to 24.7 % in 1985. The situation is such that the LDCs are forced to borrow more and more in order simply to service their past debts. Many LDCs are in "debt trap" now. Besides the development programmes already started by the LDCs cannot be abandoned halfway. The LDCs continue to need a steady flow of resources to carry on with these programmes.

Factors Responsible for the Debt Crisis

The debt problem of the LDCs did not arise overnight. Several long run as well as short run factors are responsible for the deterioration of the problem.

(1) Capital Flight

During the 1960s and 1970s rich industrial countries like the U.S. were capital surplus creditor countries. But the economic environment changed in the 1980s. A fundamental imbalance was created by very high American budgetary and trade deficits. The budgetary deficit in the U.S. increased from $ 76.2 billion to more than $ 155 billion in the fiscal year 1988. This was accompanied by a trade deficit of $ 156 billion in 1987 To finance such huge budgetary deficits, the U. S. increased the interest rates on its public debt. Besides due to loss of export earnings the U.S. was converted into a capital deficit country. Due to shortage of capital also there was a hike in interest rates. Consequently, there was a net outflow of capital from the indebted LDCs to the U. S. and other developed countries. For instance in 1987 the LDCs returned $ 30 billion more to creditor nations and banks then they received. "During Reagan's first term in office America imported as much capital as it had exported in the earlier 70 years. "This is known as "reverse flows." By the end of 1987 the national debt of the U.S. totalled $ 2 trillion. Another compulsion leading to the inflow of capital into the U.S. was that since the Second World War it enjoyed a peculiar historical position. Apparently many countries cater to American demand by their products. So if funds into the U.S. were to be denied it would lead to a global recession.

Even to the world organisations, the LDCs were paying more by way of principal and interest than what they were receiving as aid. They paid $ 5.9 billion more to IMF than they borrowed in 1987. The World Bank's net lending to the LDCs declined from $ 37 billion in 1985 to mere $ 398 million in 1987.

(2) Reduced Flow of Funds :

The LDCs are in a constant need of a steady flow of resources. But the flow of resources has been inadequate and halting. Total net resource flows to the developing countries has declined from $ 104. 4 billion in 1979 to only $ 82 billon in 1986.

Particularly there has been a steep fall in commercial bank lending. The hesitant mood of the major Latin American borrowers in discharging external debt obligations has unnerved the private lending institutions.

(3) Higher Interest Rates

The anti-inflationary macro-economic policies followed by idustrial economies led to a rapid rise in the rate of interest. This severely affected the countries with large foreign debts. "The real interest rate relative to export prices of goods and services, for instance, had risen from a negative 3 to 6 per cent in the late 1970s to a positive 16 to 20 per cent by 1982". Interest payments rose from 4.6 per cent of exports in 1978 to 6.9 per cent in 1980 and to 10.7 per cent in 1986. The higher interest rates severely affected the countries with large foreign debts. Thus the seventeen most indebted countries paid out $ 32 billion in interest alone in 1987.

(4) Decline in Primary Commodity Prices

During the last 25 years there has been a steady decline in prices of primary commodities in world markets which has adversely affected their earnings from trade. These prices in the current decade had declined to their lowest level in real terms since the Great Depression of the 1930s. No positive steps have been taken to stabilise these prices at a fair level. On the other hand, the prices of manufactured goods from the industrial countries went on rising. As 60 per cent of the export revenues of the LDCs are derived from primary commodities, a deterioration in terms of trade had far reaching consequences for the developing economies.

Thus, in 1960, one ton of sugar or coffee exported from the developing countries purchased 6.3 tons of oil and 37. 3 tons of fertilisers but in 1982 the same quantities could buy only 0.7 tons of oil and 15.8 tons of fertilisers respectively. So also 78 tons of jute fibre from the LDCs would buy 13 trucks in 1960 but in 1982 the same quantity would buy only 3 trucks.

(5) Slow Down in the Developed Economies

During the period 1973-83, real output in the major industrial countries increased at a much lower rate. This may be seen in Table-2.

Table-2

Growth Rates of total Real output

(per cent)

Country	1960-73	1973-83
Japan	10.5	3.9
France	5.7	2.5
Canada	5.4	2.4
Italy	5.2	2.4
West Germany	4.8	1.9
U. S.	4.2	2.5
U. K.	3.2	0.5

In the advanced capitalist countries unemployment during the 1960s was around 7. 5 million. In the 1970s the figure increased to 15 million and to-day the figure exceeds 32 million. Consequent upon the oil price hike of 1979, the industrial countries followed strict anti-inflationary monetary and fiscal policies leading to severe recession by 1981-82. The recession in the developed countries also had its impact on the developing economies. "The rich industrial democracies in the northern hemisphere buy about 80 per cent of the Third World's exports and provide almost all of its foreign capital. When they are sick, they are infectious, healthy, they are strong enough to pull many developing countries along with them." (Economist, 15. 3. 86).

(6) Sluggish Growth in world trade

World production of goods grew at an annual rate of 6 per cent during 1963-73 but declined to 3 per cent during 1973-81 and further declined to around 2.6 per cent during 1981-86. The annual average growth rate of exports during the corresponding periods were 8.5 per cent, 3.5 per cent and 2.4 per cent respectively. So barring some exceptions, for most developing countries export performance was miserable. In 1986 almost all the low income countries had deficit in their current account balance.

(7) Protectionist Measures

In the face of stagnant growth and unemployment, the developed countries have erected strong tariff and non-tariff barriers against import of goods from the developing

economies which further complicate their efforts to resolve the debt crisis. Protectionist forces were growing stronger both in the U. S. and the European countries. The latest U. S. Trade Act has strong protectionist over tones. Measures such as subsidies to agriculture products, restrictions on imports of specific items such as textiles, foot wear, steel etc., voluntary export restrictions etc. have affected the capacity of the LDCs to service debts. Bilateral approaches for dealing with trade issues, such as through the recently concluded U. S.-Canada free trade agreement or liberalised trade among the regional groupings like the E. E. C. also have placed the Third World exports at a disadvantage.

Some Policy Measures

Some heavily indebted Latin American countries have put forth a number of solutions such as complete refusal to pay, rescheduling of debt, voluntary debt relief, conversion of part of the debt into long term equity, the issue of bonds against the debt owed to banks etc. Thus, in 1985, Peru declared to limit the ratio of its debt servicing to 10 per cent of its export earnings. Brazil, the largest borrower stopped paying interest on its debts in 1987. Such unilateral actions will create uncertainty and instability in the international financial system. The following suggestions may be made to overcome and mitigate the rigours of the present debt crisis.

1. It is essential to have stability in the exchange rates for removing uncertainty in the foreign exchange market.

2. The I. M. F. should play a more powerful role in meeting the deficit of the developing countries. The borrowers' complaint that the Fund's repayment period is too short and stipulated conditions too harsh. In the recent years, the fund's activities have been vehemently criticized as it seemed to be more sympathetic to the international bankers.

3. There should be an institutional link between the I. M. F., World Bank and the GATT etc. There has been increasing overlapping in the functions of the IMF and the World Bank in recent years. As a result of this convergence, it has been increasingly difficult for the two institutions to define their separate roles in developing countries. The problem is, both seem to be working on parallel lines and to some extent therefore duplicating each other's roles, when the roles should be complementary instead.

There should be a reconsideration under the U. N. auspices of the present international economic agencies assisting the poorer nations. A radical restructuring of these institutions is overdue.

4. The developing economies should be extricated from the clutches of the transnational corporations (TNCs) which originate in the capitalist countries. About 40

per cent of the industrial production in the LDCs in Asia, Africa and Latin America is controlled by the TNCs of the U. S., Japan and West Germany. They also earn huge profits. In the early 1980s the rate of profit of the American TNCs increased to 29 per cent. In certain industries their profitability was as high as 100 per cent, or even more. They keep a tight control over technology. They also transmit a huge amount of capital out of the LDCs in the form of profits, fees, salary and royalty etc.

5. Sincere efforts should be made to reduce the imbalances among the major developed countries, such as the U. S., Japan and West Germany. The policies of the industrial economies should be carefully coordinated, so that they could adopt a uniform stand to benefit the LDCs. At present there is a rift between the U. S. and Japan and West Germany, on the issue of "Voluntary restraint agreements." There are intra-EEC differences as well.

6. The creditor countries should discharge their international responsibilities. For instance, Japan has a vast trade surplus. But it maintained "one of the lowest aid-GNP ratios in relation to its high per capita income, surplus balance of trade position and low defence expenditure." It follows a "beggar-my-neighbour" trade policy. It should increase its official development assistance. Japan should be disciplined on its exchange rate policies. The present attitude of the rich oil-exporting countries to the non-oil producing poorer countries also leaves much to be desired. The oil exporting countries desire to be identified with the third world but not a quarter of their huge import surplus is directed to the LDCs. The creditor countries should boost their domestic demand.

7. There should be greater mutual cooperation among the developing economies. They should sink their differences and put up a common front to further their interests. The Third World coutries should be united to follow a coordinated policy to promote their own trade and aid relationship. Mr. Manmohan Singh, Secretary General of the South Commission, recently held that unless the developing countries developed strong countervailing power on their own against the protectionist blocks of the developed countries through south-south cooperation, the economies of the South World will remain a sufferer. The economic declaration of the Non-Aligned Movement calls for increased economic cooperation among developing countries.

The Australian Prime Minister Mr. Bob Hawke, while in his Indian tour, has called for the formation of an Asian-Pacific Economic Block to help counter protectionist trend in the U. S. and Europe.

It is true that at present the scope for South-South Cooperation is limited. The trade between the LDCs accounts for less than 25 per cent of their trade ; so to carry on more trade among themselves is rather difficult. Besides the LDCs have uneven level of

development with different rates of growth. Still with a spirit of accommodation, the larger among the developing countries could take a leadership in promoting south-south cooperation.

8. The economic health of the U.S. must improve. Today with a debt of $ 2.6 trillion, the U.S. is the world's largest debtor. It now pays $ 152 billion a year as debt service to keep at bay foreign creditors. As long as the American economy was strong and the dollar powerful, the debt problem was not so severe. Truly, if the U.S. catches cold, the world sneezes.

9. In the ultimate analysis, it is through a steady and sustained economic growth that the debt crisis can be solved. Hence the third world countries must diversify their economies by adopting modern technology and make room for a structural change. In stead of a model of export-led growth, they should follow a model of growth-led export.

10. In the case of small poor countries who are on the verge of bankruptcy, debt should be written off. To defuse the present crisis suitable debt relief plans should be chalked out.

The World Bank has suggested a comprehensive frame-work for dealing with the debt problem. (World Development Report, 1988 P. 32-34). This frame-work must have two elements. First, the debtors' need to grow faster and export more. Through programmes of structural adjustment the highly indebted countries could promote faster economic growth. This involves more efficient use of domestic resources in both the public and private sectors. New capital inflows from official and commercial sources could help to finance new productive capacity.

Second, the cost of debt service must fall. Lower interest rates can significantly reduce the debt service burden over time. The profile of debt service could also be changed through debt restructuring. Concessional debt relief could be granted to the low income indebted countries.

The U.S. formulated the Baker Plan five years ago to bring economic growth in the indebted countries. It was supposed to provide fresh loans and other capital flows to 15 targeted debtor nations that undertook structural reforms. On the contrary, there has been a net flow of $ 43 billion from the 15 Baker Plan countries back to the banks. Virtually no money has gone from the banks to the debtor countries.

A very radical suggestion has been voiced by a few third world countries. According to them, the I.M.F. and the World Bank still represent the balance of international power which prevailed more than 40 years ago. In the mean time the erstwhile

superpowers have lost their economic strength. Countries like Japan and West Germany have emerged as new economic powers. The Soviet block countries have proved the viability of their economic systems. So there should be an effort to rebuild international economic relations under U.N. auspices which has a broader representation in the I.M.F. and World Bank. "The new structure should seek to cover not merely currency values and aid-flows but also deal with trade problems and effective means of accelerating the growth of developing countries without the recessions and balance of payment crises which have marked the last 40 years."

India and the Debt Crisis

In the context of the developing world debt problem, a reference may be made to India. External resource has been a significant element in India's development planning process. Total external debt of India in 1970 stood at $ 8118 million and increased to $ 34511 million in 1986. The volume is indeed a large one. Total interest payments increased from $ 204 million to $ 1359 million during that period.

The balance of payments position has been a matter of concern as the rate of growth in imports has outstripped that of exports. So the trade deficit has widened to Rs. 34.84 billion in August 1988 from Rs. 23. 84 billion in March 1988. The rupee has touched an all time low against the dollar and the sterling pound. Inspite of this development, there was no improvement in the balance of payments. India's foreign exchange reserves (excluding gold and SDR) declined to Rs. 59.9 billion in Oct. 1988 from Rs. 72.87 billion in March 1988. The Non-Resident Indian remittances also have reached a plateau, if not declining. The burgeoning imports and the need for repayment of IMF and other external loans do not present a bright picture for 1989.

In this backdrop, it may however be mentioned that India's external debt occupied the same 15 per cent of her GNP both in 1970 and in 1986. Total long-term debt service ratio formed 1.1 per cent of GNP in 1970 and increased to 1.6 per cent in 1986. But the debt service ratio as a percentage of exports has declined from 27.3 per cent to 24. 6 per cent during that period. It shows that in comparison to other indebted countries India's position is much better and is not in the "debt trap." If the total volume of external debt has increased, the size of India's GNP as well as exports also have expanded. The present 5 per cent rate of growth of the economy is not bad. The international institutions have appreciated our policies to increase exports and our capability in managing crisis situations. Indian creditworthiness is high in the international capital market.

Conclusion

Today there is an increasing interdependence between the developing and developed countries. About 40 per cent of the European community's trade is with the LDCs. About 39 per cent of U.S.A.'s exports went to the LDCs in 1979. Thus it

is in the long term interest of the developed countries that the less developed countries should prosper and flourish. Developed countries have now realised that the third world debt crisis could have severe economic and political repercussions for their own economies. Hence the developed countries in the recent years seem to be evincing greater concern for the solution of the debt problem.

The debt crisis of the developing economies is a complex, multi-dimensional phenomenon. It cannot be solved overnight. Its solution depends on effective collaboration among debtors, creditors, commercial banks and international agencies. Already one could notice some improvement in the situation. It is hoped that through collective effort and an orderly and cooperative approach a new international economic order could be established, in which the relations between the developing and developed countries be based on justice, equality and mutual benefit.

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India's External Debt and Debt Servicing

Mrs. Amita Chaudhury

I

The Comptroller and Auditor General of India in his report in May 1988 estimated the External debt of Government of India at Rs. 22,518 crores in March 1988 and Rs. 25,539 crores at the end of March 1989. The report, of course, excludes the borrowing from International Financial Market and Non-resident Indian Deposits with banks in India. The World Development Report, 1988 estimates the total External debt at $ 41,087.9 million in 1986. This includes the long-term public and publicly guaranteed, long-term non-guaranteed private credit, short-term credit and use of I.M.F. credit. The recent reports of Organisation for Economic Co-operation and Development (O.E.C.D) and Bank for International Settlements (B.I.S.) show that the total funds raised by India from International Financial Markets amount to $ 2,359 million in 1987 and $ 1,147.4 million in the first two quarters of 1988. With the larger commitment by Aid India Consortium of over $ 4 billion, the debt is likely to increase further. Thus the total external debt from all sources increased from $ 41,088 million in 1986 to about $ 52,500 million (Rs. 76,000 crore at the average Rs./$ exchange rate prevailing in September 1988 at Rs. 14.4894 per dollar) by the end of 1988.

Burden of Debt Servicing

The ability of the economy to proceed with the developmental effort is diluted when a large part of the government revenue is devoted to external public debt service. India's position in regard to external debt servicing ratio is not altogether happy. Economic Survey (1987-88) reports that the country's debt service in 1986-87 on external debts on government account, non-government account, I.M.F. drawals and commercial borrowing (including supplier's credits) amounted to about 22% of current receipts. This was likely to increase to 23% to 24% in 1987-88 because of higher I.M.F. repayment and debt service on commercial borrowing.

The world development report states that total repayment of principal on long-term public and publicly guaranteed and private non-guaranteed has increased from $ 355 to $ 1,582 million between 1980-86. The total interest payment rose form $ 566 million in 1980 to $ 1520.0 in 1986. Out of this, the total interest payment on short-term debt rose from $ 144 million in 1970 to $ 161.2 million in 1986. As short-term

debts are repayable in a period of one year, this has enhanced the debt repayment liability. The total interest payment has excluded the repayment of I.M.F. credit. If we will take into account the debt service on I.M.F. credit, the total debt service would be higher.

Thus the burden of debt servicing increased particularly because of repayment of the short-term I.M.F. loan, growing proportion of commercial credit and Non-concessional loan. According to World Bank's projection. the debt service on long-term debt amounts to $ 3,929.9 million in 1988, $ 4,009.8 million in 1989. With debt servicing charges going up from 10% of Indian foreign exchange earnings in 1984-86 to 17% in 1987-88, this was likely to go up to more than 20% in the coming two years.

Increasing resort to commercial borrowing in the late 1980's and reduced quantum of bilateral, multilateral concessional aid flows further accentuates the problem of external imbalance. The total world bank group lending to India during 1987 was $ 2,806 million as against $ 2,368 million in 1986. India's share in concessional I.D.A. credit declined from 19.9 per cent in 1986 to 19.4 per cent in 1987. On the disappointing side, the concessional financial loans and grants from Official Development Assistance (O.D.A.) continued to decline from $ 2,147 million in 1980 to $ 1,527 million in 1985 and to $ 2,059 million in 1986. The persistent decline in O.D.A. in early 1980's is a contributing factor in raising the burden of debt service. The changing debt profile had significant adverse impact on the debt service burden by hardening the borrowing terms.

In the 1980's the terms of public borrowing were getting hardened. This could have contributed much to the increase in the debt service burden. The commitment to the public and publicly guaranteed loans rose from $ 954 in 1970 to $ 5,761 million in 1986. The maturity period of new official credit commitment to India shortened from 34 years in 1970 to 22 years in 1986. The interest charge on new public borrowing sharply rose from 2.5 per cent in 1970 to 5.1% in 1986. There has also been a marginal hardening of the grace period.

II

Several indicators have come to be widely used to assess a country's debt servicing performance. The most important indicators are the debt service ratio, debt service as a percentage of merchandise exports (DSP/XG) or merchandise and invisible earnings (DSP/XGS), the debt / gross national product ratio and the total debt export ratio.

Table - 1

India's Debt Servicing in Relation to Principal Indicators

(per cent)

Year	DSP/XGS	DSP/GNP	DSP/XG	TD/XG	TED/GNP	TED/XG
1978	13.3	1.0	17.0	17.9	13.8	246.4
1979	11.3	0.9	15.1	25.9	12.6	213.0
1980	10.9	0.8	15.7	73.1	11.9	225.2
1981	11.5	0.8	16.8	85.9	12.6	251.2
1982	14·5	1.0	18.2	58.0	14.7	268.2
1983	16.2	1.1	21.8	53.7	15.2	331.0
1984	16.7	1.2	22.3	59.5	17.7	336.4
1985	21.5	1.4	35.4	85.9	18.5	458.3
1986	26.0	1.8	41.4	63.9	19.1	439.3

Note : DSP=Total Debt Service.
XGS=Export of Goods and Services.
XG=Export of Merchandise.
TD=Total Trade Deficit.
TED=Total External Debt.

Source :—E.P.W, November 26, 1988.

Table-1 shows a bleak picture of India's debt servicing capacity. The total debt service ratio, as a proportion of export of goods and services rose from 10.9 per cent in 1980 to 26% in 1986 (Table-1). The DSP/GNP ratio is also a matter of concern. It was around 1.8 in 1986. The DSP/XG ratio is also worsening. From 17% in 1978, it rose sharply to 41.4 in 1986. The TED/GNP ratio in 1986 was 19.1 per cent) Total external debt as a share of Exports of merchandise shows a steep rise from 225.2% in 1980 to 439.3 per cent in 1986.

The most disappointing side is trade deficit and export ratio. In later 70's, the TD/XG ratio was declining. But the higher oil imports during 1980-81 .increased the TD/XG ratio to 73.1 per cent in 1980 and 85.9 per cent in 1981.

The significant decline in ratio during 1982-84 was mostly due to modest growth rate in exports. Subsequent years witnessed a sharp rise. This worsening of the TD/XG ratio reflects country's growing dependence on foreign assistance and large debt servicing in the future.

A country's debt servicing capacity is generated mostly out of its export performance. India has not kept pace with the expanding global trade. In the world export market of $ 2475 billion, the country's share was only 0.5% in 1987. An analysis of the export basket reveals that the share of the so called traditional exports like jute, cotton textiles, spices, tobacco, cashew, raw cotton, oil-seeds, which formed more than 50% of India's total exports in early 50's, has been declining progressively and is now only about 10%. The import liberalisation strategy.widens the trade deficit in 1985-86. The industries promoted by the new strategy have been mainly consumer durables for which there is a buoyant domestic market. In fact, engineering goods registered a dismal performance.

Another important factor is the trend of India's trade with hard currency O.E.C.D. areas. Of the total trade deficit of Rs.7,517 crores in 1986-87, 5,823 crores (77.5%) were with OECD.

The growing protectionism a mong the industrial countries further had an adverse impact on India's trade. The near stagnation in international trade flows has led to keen price and non-price competition in major market. The pressure of external factors on manufactured exports from India has continued to rise, because Indian firms have been unable to offer the generous terms of export credit or the large price discount.

Another deplorable sitution is the country's poor foreign exchange earnings from Tourism. India has a million tourists a year and earns annually about Rs.1,800 crores in foreign exchange from tourism. Even Spain has 47 million tourists annually. Singapore has 3 million tourists annually while its population is 2.5 million.

The persistent large deficits since 1979-80 necessitated large commercial borrowings and recourse to I.M.F. credit. The large spurt in financial market borrowing and the I.M.F. credit at market related interest rates changed the relative share of official credits in the total borrowing of India. The burden of debt servicing particularly grow because of the short-term I. M. F. loan which was to cover the current balance of payments gap rather than building up productive assets to generate debt servicing capacity.

Another facet of the debt burden is that the currency of a single nation has become predominant as international currency. As long as this situation continues, U. S. domestic, monetary and economic policy will exert a disproportionate influence on the world financial market.

The rate of gross capital formation declined from 24.8 % in 1978-79 to 24.6 % in 1985-86. The rate of saving in gross terms declined from 24.7 % in 1978-79 to 22.9 % in 1984-85 and 22.8 % in 1985-86. The flow of foreign resources into the economy increased from a mere Rs. 128 crore in 1978-79 to Rs. 4,485 crore in 1985-86. This makes a significant change from a position of near self-reliance and independence in 1978-79 to dependence on foreign crutches for the growth of the economy.

Policy Alternatives

India is already in the danger zone. Near about $ 8,000 million from external sources have to be borrowed to service the debt and to finance the policy-induced import. A comparison of the magnitude of the debt and debt service ratio of long-term debt of India with that of the heavily indebted 15 countries makes this point clear.

With fears of inflation resurfacing in the developed countries, an upward pressure on interest rates can be expected in the future. In the near future, the government has no option other than to go in for further financial market borrowings to avoid an external liquidity problem and to boost the foreign exchange reserves.

The long-term solution to debt servicing problems depends basically on the effectiveness of overall economic policies including policies to expand exports. A conducive and dynamic research and development effort is necessary to impart competitiveness to our industries. An entirely new look to the whole question of exports should be given to maintain external debt and the burden of debt servicing within manageable proportions.

It is important to note that aid should be utilized for export-increasing and import substituting industries. Special encouragement should be given to producers and exporters of equipments for the development of infrastructure, industrial machinery, machine tools and consumer durables to meet the emerging needs of other developing countries.

A liberalised trade regime in all key agricultural products would provide a substantial benefit for net food exporting countries like India, Brazil, Argentina and Phillippines. The other policy option is to accelerate the utilisation of multilateral and bilateral aid by streamlining the projects. Effective utilisation of I. M. F. assistance is necessary to generate debt servicing capacity. It is equally important to introduce innovative schemes for attracting non-resident deposits. Efforts should be made to raise the tax-GDP ratio and to curb growth in non-plan spending.

The share of grants in total flow of aid must increase and there should be softening of loan terms. Appropriate urgent measures, including international action to mitigate the adverse consequences for the current and future development of developing countries like India, arising from the burden of external debt contracted on hard terms should be taken.

Progress in international reform should include the promotion of net flow of real resources to developing countries. In negotiating loans in future, India must try to obtain untied loans so that she could utilise them efficiently and speedily. The mounting burden of debt servicing, halting resumption of U. S. aid, stagnation in O. D. A., emergence of the private sector as an important potential source of external resources point to the need for achieving self-reliance.

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Summary

Political Economy of Third World External Debt and Contemporary World Economic Crisis.

G. B. Nath

The paper makes an attempt to show that the debt situation in the third world countries is not a natural phenomenon but a product of certain economic relationships. It seeks to establish that the interaction of the third world economies with the developed imperialistic economies has given rise to such external debt crisis and this problem would continue to persist as long as imperialism persists. Divided into four sections, the first section discusses the magnitude of this debt problem, the second presents the world economic crisis, the third examines the various possible solutions and the last summarises the situation.

The article suggests that in order to avert the crisis, there should be a third world "Bretton Wood" agreement, where the decision to repudiate the outstanding debts and induce structural adjustments be taken. It pleads for the termination of the imperialist contradictions in international trade so that the final crisis and breakdown of the system can be averted.

Debt Crisis in Developing Countries and the Way Out

L. M. Sahoo

This paper highlights as to how the third world debt problem which started in the early 1980's has now assumed alarming proportions. It traces the different external and internal causes of debt crisis, such as, depressed commodity prices and deteriorating terms of trade for the developing countries, steep rise in the level of interest in international credit markets, and the recession in industrial nations and rising trade barriers. Thereafter, the paper examines the consequences of the debt crisis, such as , sharp fall in the net lending to the developing countries, severe cultback in imports of indebted countries and substantial slow down in these economies. The article finally presents a strategy, which can provide a lasting solution to the debt crisis. The recommended measures include, (a) Writing-off of the debts of the desperately poor African countries, (b) early improvement of trading environment by reversing the present rising trend of protectionism and (c) reducing and stabilising the international interest rates.

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