

ORISSA ECONOMIC JOURNAL



Volume IV
Volume V

Number Two
Number One

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ORISSA ECONOMIC JOURNAL

VOLUME IV



JUNE-DECEMBER, 1971.



NUMBER TWO

VOLUME V



JANUARY - JUNE, 1972



NUMBER ONE

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BHUBANESWAR-4

ORISSA ECONOMICS ASSOCIATION

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ECONOMIC POLICY FOR AGRICULTURAL DEVELOPMENT

Prof. Baidyanath Misra

In spite of two decades of planning for industrialisation, agriculture not only continues to be the mainstay of Indian economy, increased agricultural productivity is also considered essential to support and sustain economic development. It is now recognised even by the protagonists of 'industrialism' that a substantial progress of agricultural productivity is a pre-requisite to economic growth. Apart from other inter-relationships between the development of agriculture and the economy as a whole,¹ the additional requirements of food owing to increased population necessitates a break-through in agriculture. On the basis of a simple formula given by Johnston and Mellor *i. e.* $D = p + ng$, where D stands for increase in demand for foodgrains, p for the rate of growth of population, g for the rate of growth of per capita income and n for income elasticity of demand for food grains, the annual increase in food requirements comes to 2.5 per cent assuming an annual growth rate of population of 2.5 per cent, rate of increase of per capita income at 1.5 per cent and income elasticity of demand at 0.6 per cent.² The rate of increase in agricultural production during the last decade has barely come to this level. This shows that there is a preponderant need to intensify efforts at increasing agricultural productivity to accelerate the process of economic growth.

1. See William H. Nicholls, The Place of Agriculture in Economic Development, in 'Agriculture in Economic Development', Ed. by Carl K. Eicher and Lawrence W. Witt, McGraw-Hill Book Company, 1964 for the interrelationship between agriculture and economic development.
2. See John W. Mellor, Towards a Theory of Agricultural Development, in 'Agricultural Development and Economic Growth' Ed. by Herman M. Southworth and Bruce F. Johnston, Cornell University Press, New York, 1967. Here the assumption is that the demand for food is solely determined by the above three factors. If other factors are taken into account, the demand for food might be much larger.

We therefore propose in the following pages to outline a pattern of development in agriculture to help and sustain economic growth in the country. Our parameters are as follows.

(1) In a substantial sector of agricultural economy, there is subsistence farming which is not responsive to economic incentives. There are regions where agriculture has become a business proposition and farmers respond to changes. But by and large, agriculture in India is traditional and needs an overhauling to initiate a process of economic change.

(2) Though traditional, farmers do allocate their resources rather efficiently as individual decision makers operating within the environment in which they work, as Mellor says, the inefficiency lies with society's allocation of resources—its failure to take the steps necessary to provide an environment in which the peasant can be more productive.³

(3) It follows from this that the productivity of land and labour is exceedingly low in Indian agriculture. There is a general feeling that there is a considerable amount of disguised unemployment in Indian agriculture. Both P. N. Rosenstein-Rodan and W. Arthur Lewis estimate that about a quarter of the agricultural population in India is surplus to requirements. This implies that the marginal productivity of labour in agriculture is zero. Considering this question Eckaus points out that the zero value in agriculture rests squarely on the assumption that there is no opportunity for technical substitution of factors in agriculture at any of relevant margins.⁴ Schultz however contradicts this and states that no where can one observe the necessary significant indivisibilities either in products, factors or methods of production in agriculture that would support this assumption.⁵ His empirical test of Influenza epidemic of 1918-19 in India does not also substantiate the Thesis of zero marginal productivity. He therefore concludes that agricultural production as a rule diminishes when some appreciable part of the labour force is withdrawn provided that nothing else of consequence is changed.

3. John W. Mellor, *op. cit.* The same view is also expressed by Theodore W. Schultz in 'Transforming Traditional Agriculture', Yale University Press, 1964.

4. R. S. Eckaus, Factor Proportions in Underdeveloped Countries, AER, 45 (September, 1955).

5. Transforming Traditional Agriculture, *op. cit.*, ch. 4.

Though the validity of Schultz's thesis can only be tested by regional studies we can, without any contradiction, conclude that the productivity of labour and land is exceedingly low implying thereby that there is plenty of excess capacity in agriculture, which if properly utilized, can substantially increase production.

(4) Related to this is the transfer of agricultural population to the non-farm sector for improving the industrial sector with the help and assistance of agricultural surplus. Economic development involves a major transformation of the economy from one which is dominantly agricultural to one which has a large urban industrial sector. So it is suggested to draw redundant labour from agriculture to non-farm sector for improving the economy. This redundant labour when transferred from agriculture would not decrease agricultural production even if the level of technology remains the same. Fei-Ranis who have developed an elegant model for economic development for a country with surplus population point out that agricultural production which supports the non-productive part of the agricultural labour force is in a sense an agricultural surplus and is presumed available to support that labour if it moves to the urban sector. As long as such a surplus can be extracted, economic transformation can proceed as rapidly as non-farm jobs are created with no fear of food shortage for the urban labour force.⁶

But if it is presumed that there is no disguised unemployment, transfer of labour from agriculture will result in a decline in agricultural production, thereby creating a problem of feeding the increasing urban population. Jorgenson, therefore, points out that the process of capital formation cannot proceed without technological change in the agricultural sector to increase productivity of the labour force remaining in agriculture so that it may feed both itself and new recruits to the urban labour force.⁷

Though we believe that some surplus can be diverted from agriculture to the non-farm sector even with the existing technology

6. Fei-Ranis model grows out of the classic article of Lewis, 'Economic Development with unlimited Supplies of Labour', The Manchester School, May 1954 and is closely related to the work done by William Nicholls, *op. cit.* See Gustav Ranis and John C. H. Fie, A theory of Economic Development in Agriculture in 'Economic Development', *op. cit.*

7. Dale W. Jorgenson, The Development of a Dual Economy, Economic Journal, June 1961.

because the entire rural economy is not at the subsistence level, there is greater possibility of larger flow from agriculture to the industries for general economic development with the increase in agricultural productivity. However it is doubtful whether a sufficient number of agricultural labourers in an over-populated country like India can be absorbed in town industries and services. The experiences of the last few years show that these migrants would linger in sub-urban areas without any productive contact with the urban economy. The linkage between rural and urban economy is not effective as to induce a smooth flow of rural labour to urban economy nor is the urban economy so developed as to absorb them productively. It is obvious that the surplus population in agriculture will have to be absorbed in villages by rural works like public irrigation and drainage, terracing, afforestation, road-building and house construction and establishment of processing industries. This means that agriculture should be developed not only to provide a surplus to the non-farm sector, but also the rural economy should open up new channels for providing employment opportunities to a larger section of the growing population.

(5) Finally, agricultural production has to be managed with the help of an enormous number of small units. Large scale farming is not possible in India because the dependence of people on agriculture cannot be reduced within a foreseeable future. If a substantial portion of labour working in agriculture cannot be diverted to non-farm economy, agriculture has to be organized on small scale under the control of small independent farmers. Even in Soviet Russia, where collective and state farming have been organized forcibly in order to achieve communist goals, agriculture still continues to be the reservoir of surplus labour. Rudolf Bicanic points out the production programme in socialist sector is determined by the need for providing employment and as such there is concealed unemployment in U. S. S. R. which varies between 59 to 39 per cent and in other socialist countries from 12 to 16 per cent. In China, some 60 million people were sent back to the villages after 1960s.⁸

Further improvement in the productivity of agriculture does not also depend on the size of farms. As Schultz has said, transformation of traditional agriculture always entails the introduction of one or more new agricultural factors, and therefore it gives rise to a process at which

8. See Problems of Socialist Agriculture, in Indian Journal of Agricultural Economics, Silver Jubilee Number, July-December, 1964.

the critical question is not one of scale but of factor proportionality.⁹ And these key factors can also be divisible. That is why, family sized farms have proved very efficient in Japan, Denmark and the U. S. A. In fact, given the kind of operating and investment decisions that characterise most of modern agricultural operations, no farmer can manage efficiently a large farm. In Soviet Russia where large farms have been emphasised to derive economies of scale, small private plots produce high value goods and contribute about 30 per cent of the total agricultural output. This shows that in India we can run small farms efficiently and increase production substantially both to meet the demands of both agricultural and non-agricultural sectors.

This brings us to the problem of reorganisation of agriculture to make it an efficient business proposition. On the basis of analysis given above, we can make the following suggestions for transforming Indian agriculture. The first requirement is agrarian reform in order to make agriculture responsive to economic incentives. There does not seem to be much scope to increase the area as a source of growth and further growth in output can be achieved mainly through the increase in productivity per acre. This can be done if proper incentives are given to the farmer to increase production. It is now recognised that if somehow ownership rights can be conferred on the tenants in India such as has happened in Japan after the Second World War, agriculture would be more dynamic. Further, there is also need to fix upper ceilings on land holdings to increase its productivity. The Farm Management Studies conducted in different parts of India have shown that output per acre is generally higher among the smaller farms. This is obviously due to the fact that farming operations in India are mostly managed through labour intensive techniques and larger farmers who operate with a large number of paid labourers encounter managerial and supervisory difficulties. It is often contended that small farms cannot modernise agriculture by applying new technology. But as we have already seen smallness of size as such does not offer any technical hindrance to the application of modern inputs and provision of credit to the smaller farms in a liberal way can easily meet the ends of growth.¹⁰ The example of Japan which has

9. Transforming Traditional Agriculture, *op. cit.*

10. See also C. H. Hanumantha Rao, Agricultural Growth and Stagnation in India, in Readings in Agricultural Development, Ed. by A. M. Khusro, Allied Publishers, 1968.

made enormous progress in agricultural production despite the smallness of size clearly reveal that ceiling on land is not a hindrance to economic growth. May be large farms would be relatively quick in taking to improved techniques, but there is a danger that progress would be restricted owing to managerial difficulties. We, therefore, emphasise that immediate steps should be taken to bring about structural changes in agrarian relations to promote economic incentives. There are evidences that uncertainty in this field has checked investment in Indian agriculture.

The most important problem for increasing the productivity of agriculture is technological advance or change in production function. One source of growth is of course the change in the quantities of inputs used, but more important is the application of modern inputs like high yielding variety of seeds, chemical fertilizers, insecticides and all other material inputs which embody improvements in technology. The importance of these technical innovations has already been recognised. We need not therefore argue for the adoption of these new inputs. However, we may analyse two important points which have direct bearing to this. One is the question of additional investment in agriculture. We have been arguing, in the light of experiences of other countries, that agriculture should provide a surplus for industrial expansion. Now when there is a need for additional investment in agriculture, the important question is wherefrom should this additional resource come? Let it be noted that this additional investment is beyond the means of individual cultivators. The rate of investment on traditional factors of production has declined to such a low level that most of the cultivators do not have the capacity to save and invest in such factors. Public investment is therefore indispensable for a break through in agriculture.

What we mean by this is that although a relative decline in agriculture and a growth of the non-agricultural sector are inevitable for changing the economic land-scape of India, it does not follow that maximising the short-term outflow of capital from agriculture will maximise the rate of economic development. Development of agriculture can contribute materially to overall economic development, and it requires a major inflow of certain forms of capital. This means that agriculture has to provide resources for the development of non-agricultural sector and again non-farm sector will have to contribute for the development of agricultural sector.¹¹ The two sectors should

11. John W. Mellor, *Towards a Theory of Agricultural Development*, *op. cit.*

not be taken as mutually exclusive for the purposes of development of the economy.

With regard to change in production function, a number of critical decisions has to be made by the farmer which are important for increasing the productivity of agriculture. We can mention here three types of decisions : first, resource-product (single input) problems determining the most profitable amount of a resource to use in the production of a commodity; second, resource-resource (multiple input) decisions such as determining the most profitable combination of resources to produce a specific amount of a given output ; third, product-product decisions, *i.e.* what is the most profitable mix of products to produce from the available supply of inputs. It seems that the importance of these relations has not yet been recognised by research workers in India. Only additional investment in agriculture will not do the trick; in addition to technological changes, a proper pattern of investment has to be determined for an optimum allocation of scarce resources. One of the important defects of socialist agriculture has been to strive to attain the maximum instead of the optimum, and we should not commit the same mistake in India.

For example, in resource-product relationship, we have to consider how much of a variable factor has to be used in order to produce a commodity, when other inputs are fixed. If the decision facing the farmer is how much water to be used in grain production, there should be proper research-findings regarding water response and water management.

In resource-resource relationship, where two or more factors of production are variable, we are interested both in what happens to output as the quantities of both variable inputs are increased or decreased and in the substitution of one variable factor for another. Particularly the second question, whether a given output be produced with more investment in irrigation or a larger quantity of fertilizer or improved strains is a very important decision in which very little work has been done in India.

Similarly, the third production decision which involves product-product relationship implies that decisions have to be taken as to which crops or livestock should be produced from the available stock of inputs

to maximise net income. The maximisation principle requires that if returns to a rupee of expenditure are greater in the production of crop x than in crop y , resources should be shifted to the production of x and away from y .

It seems to us that these economic decisions have not yet been emphasised in Indian Agriculture. As such, agricultural economists are still continuing as back benchers in the planning of agricultural development of India. If we do not aim only at increasing yield per acre, but to increase net income per acre, change in production functions as mentioned above has to play an important part in the policy for agricultural development.

We can refer in passing to three more factors which can substantially contribute to agricultural development. One is improvement in research organisation. It is now recognised that long-term growth in agricultural production requires a research programme continually generating new production techniques and systems. The high levels of agricultural productivity that have been achieved in the economically advanced countries have been made possible by the accumulation of a vast body of scientific knowledge. We can of course borrow from this technical knowledge, but there are difficulties to transfer research findings which are successful in one environment to another. In applied biological sciences, research has to be carried to the point of final application under farm conditions for acceptance of technological change. This is a field which needs considerable emphasis for modernising Indian agriculture.

The second field in which some resources have been invested but with limited success is diffusion and adoption of innovation. Diffusion is concerned with the spread of innovation both between person and geographical areas, and adoption is the last stage in accepting an innovation. In adopting a new technology, an individual farmer will go through the following sequence in taking up the innovation : awareness-interest-evaluation-trial-adoption. The rapid adoption and diffusion of innovation have contributed substantially in increasing farm surplus in some of the advanced countries. In India, the extension education programme is not yet free from teething troubles. We guess this is an area which needs emphasis for a rapid transformation of India's agriculture.

Finally we have also to build up an effective service organisation for proper distribution of new inputs and sale of output. These include the development of marketing and processing organization, credit agencies, multipurpose co-operatives and such other institution for which trained manpower is the principal input. In fact, for all the three factors mentioned above, research to develop production possibilities, extension education to help farmers to make proper choices, add institutions to service agricultural production we require trained manpower and as such, there should be adequate investment in men to change the rural economy of India.

MIXED-ECONOMY IN INDIA : IS IT ANTI-GROWTH ?

N. R. Hota, I. A. S.

India's socialism has been a confusion to many economists, getting worse confounded with time. At the Avadi session of the Congress in 1955 'Socialist pattern of society' became an acclaimed objective till in 1964, at the Bhubaneswar session, this objective was redefined as "a socialist state based on parliamentary democracy". The meaning of the concept has always remained "amorphous and shifting,"¹ though the approach has always been emphasized by Indian leaders as 'primarily an economic approach'.²

An economic definition of socialism would mean government ownership and operation of economic enterprise.³ Many economists, including Galbraith and Mallenbaum think that India has a significant, decisive and expanding private sector and "the smallish, socialized sector superimposed atop" does not make it a socialist economy.⁴ Bauer considers this an erroneous view and lays great stress on the extensive powers of the Government over the private sector,⁵ and the growing rate of new undertakings in the public sector on lines of the 1955 Industrial Policy Resolution.⁶ Among Indian economists, Shenoy has

1. Gunnar Myrdal, *Asian Drama*, Vol. II (Pantheon, New York, 1968), 799.
2. Nehru, quoted in R. K. Karanjia, *The Mind of Mr. Nehru*, (Allen and Unwin Ltd., London, 1960), 39.
3. W. W. Lockwood, "The Socialistic Society : India and Japan," *Foreign Affairs* (October, 1958), 117-130.
4. J. K. Galbraith, "Rival Economic Theories in India," *Foreign Affairs* (July, 1958), 587-596 ; and W. Mallenbaum, "India and China : Contrasts in Development Performance," *Ibid* (June, 1959), 284-309.
5. P. T. Bauer, *Indian Economic Policy and Development* (Praeger, New York, 1961), 107.
6. "Over 3/5ths of the heavy industry program as a whole and over 3/4ths of the investment in steel capacity are in government-owned capacity", *Ibid*, 46.

TABLE I

PATTERN OF PUBLIC AND PRIVATE INVESTMENT IN INDIA

(Rs. IN CRORES)

1951-1974

Sectors	1st Plan 1951-1956		2nd Plan 1956-1961		3rd Plan 1961-1966		4th Plan 1969-1974	
	Planned	Actual	% of Planned total	% of Actual total	% of Planned total	% of Actual total	Planned	% of Planned total
Private	1600	1800	53.6	38.7	4100	45.9	10,000	44.9
Public	1500	1560	46.4	61.3	3800	54.1	12,252	55.1
Total	3100	3360	100	100	6200	100	22,252	100

* Actual figures are not available

- Sources : 1. Selected Plan Statistics, Government of India, Planning Commission (New Delhi, India, December, 1959), 23.
 2. Third Five Year Plan, Government of India, Planning Commission (New Delhi, India, December 1959), 32, 59.
 3. Fourth Five Year Plan, Government of India, Planning Commission, (New Delhi, India, December, 1959), 49.

dubbed this as 'statist tempering' which has brought two evils—"evils of planning and the evils which the market mechanism produces when tempered with." 7

However, the term 'mixed economy' appears more appropriate to describe the general economic scene in India than any form of the popular 'socialist' descriptions. It is our purpose here to examine its extent, economic content and efficiency over the past two decades of Indian planning.

Let us first examine the pattern of public and private investments in India. Table I presents the planned and actual investment figures for these two sectors from the First to the Fourth Five Year Plan through the years 1951-1974.

While the total investment has increased 6.6 times during this period, private investment has risen 5.5 times and public investment 7.8 times. Taking into account the fact that public investment had no significant base in India prior to 1951, can this increasing share of the public sector investments be called significant? This can be easily seen from the following Table.

TABLE II
PUBLIC SECTOR INVESTMENTS

Serial	Year	Gross Average Public Investment	% of National Income
1.	1931-32 to 1937-38	380.43	1.9
2.	1948-49 to 1951-52	2537.5	2.7
3.	1952-53 to 1960-61	6401.0	5.5
4.	1961-62 to 1965-66	12600.0	8.4

All figures in millions/Rupees. --Figures for 1961-62 to 1965-66 have been calculated from India, 1968 as the period was not covered in Healey. The year-groupings are mine and all figures for these groups represent averages from Healey's figures.

Source : J. M. Healey, *The Development of Social Overhead Capital in India, 1950-60*, (A. M. Kelley, New York, 1965), 8.

It is evident from this Table that public investments ranged between 1.9 to 2.7 per cent of national income until the planning period began in 1951-52. The rate of 2.7 per cent shows an increase in public

7. B R. Shenoy, *Indian Planning and Economic Development* (Asia Publishing House, New York, 1963), 18.

investments consequent on India's independence in 1947 and as compared to her colonial past of 1931-38 (war years excluded). The rise in public investments approaches 5.5 per cent of national income on an average during the first decade of planning, ranging from 3.1 per cent to 7.3 per cent. The average net investment during this decade is 8.2 per cent, ranging from 5.5 per cent to 11 per cent. During the Third Plan period (a part of the second decade of planning) the average is 8.4 per cent of national income.

Public investments have thus undoubtedly increased, but they have been earmarked mostly for basic and heavy industries like steel and chemicals, also for public utilities in conformity with welfare state objectives and infrastructure requirements. Concentration of public investment in steel is justifiable because even in the United States private firms have found this field difficult to enter.⁸ In India, the private sector would have found it almost impossible.^{8a} Besides, investment on power, transport *etc.*, are infrastructure requirements for a growing economy and require government support in a developing country.⁹ It can therefore still be said that almost the whole consumer goods sector has been available for private investment and the comparatively larger investments in the public sector under the Plans do not jeopardise the private sector or upset the balance between the public and private sectors.

On a micro-approach, it is seen that during the First Plan, the private public investment ratio was 53.6 : 46.4 per cent, but since then private sector investments have dwindled while public sector investments have increased. These differences were marked the most during the

8. J. S. Bain "Barriers to New Competition (1956)" quoted in George Rosen's *Industrial Change in India* (The Free Press, Illinois, 1958), 15.

8a. Of a total public sector investment of 3500 *crores* by the Central Government up to the end of 1967-68, the important break-ups are as follows :

Steel—1200 *crores*

Engineering—850 *crores*

Petro-Chemicals—730 *crores*

Minerals and Metals—270 *crores*

R. Venkataraman, *India News* (Washington, D. C., January 23, 1970), 4.

9. While this is true, statistical data have showed no indication that this type of investment takes greater percentage of the total share of investment in a developing economy than in a developed one. The ratio of such Investment "would not vary substantially with the structure of the economy or the stage of economic development." This idea has been well developed in : J. M. Healey's, *The Development of Social Overhead Capital in India, 1950-60* (A. M. Kelley, New York, 1965).

Third Plan, less so during the Second and in the Fourth Plan, there are hopeful signs of recovery for the private sector while public investments fall back to the Second Plan level. The percentage of investment in the private sector has not declined below 10 points during all these years, while that in the public sector has not risen substantially above 10.¹⁰

If this be so, has the private sector been unduly inhibited otherwise? The Plans have envisaged specific controls over capital issues, allocation of scarce raw materials, allocation of foreign exchange and import permits. Licensing of new industries have been regulated,¹¹ production and distribution of "essential commodities"¹² have been controlled, numerous price-controls introduced.¹³ The Companies Act, 1956, has introduced powers to control the operation of joint-stock enterprises. One can also mention the various labour laws, particularly the Payment of Minimum Wages Act and Payment of Minimum Bonus Act, which have imposed obligations on the entrepreneurs to pay to labour much more wages than the opportunity cost of labour would otherwise warrant.¹⁴

When these are read with the Industrial Policy resolution of 1956¹⁵ which outlines the boundaries of the public and private sectors, does the situation turn out inhibitory to the private sector? While some economists express such a view,¹⁶ there are others who tend to emphasize

10. The highest peak was in the Third Plan—16 per cent above the First Plan minimum level. The realized figures are still awaited, see Table I.
11. Under *Industries (Development and Regulation) Act*, the Government has discretionary powers to issue licenses for establishment, extension, change of location or product of industries.
12. So defined under the *Essential Commodities Act*, which includes foodstuff, important raw materials, iron and steel, etc.
13. *Supply and Prices of Goods Act*, covering articles in short supply with Government's right to enlarge the list.
14. "The whole trend of wage and labour policies...has both raised the real cost of labour to employers and narrowed management's area of control over the labour force and over its labour costs relative to returns". George Rosen, *op. cit.*, 182.
15. An integral part of the *Second Plan Document*, It divides industries into three categories : (a) Basic and heavy industries—entirely state responsibility, (b) Machinery, Equipments, Chemicals and Transport—initiated by state, but supplemented by private sector, (c) All the rest—'eminent domain' of the private sector. See *Second Five Year Plan*, 43-50.
16. P. T. Bauer, *op. cit.*, 85-87, and Paul Bureau, *International Affairs* (1957), 3030.

realism over policy instruments and still see in the private sector the major contributor of growth.¹⁷ Myrdal mentions that discretionary controls have often helped private enterprise to function in sheltered markets and reap high profits.¹⁸ Besides, the licensing policy actually pursued by the Government of India has been very pragmatic and has not debarred private enterprise purely on policy grounds.¹⁹ Due to political reasons, the Central Government has not been readily willing to fight vested interest in industry and trade and "the private sector has (got away) with incentives and concessions".²⁰ It is therefore hard to say conclusively, that the private sector in India has been unduly inhibited through such administrative measures.

This brings us to the efficiency question—what has been the growth rate of the Indian economy under this 'mixed economy' planning ? It can be seen from Table III given below :

TABLE III

RATE OF GROWTH OF NATIONAL INCOME
(PERCENTAGE PER ANNUM)

Plan period	Planned	Achieved
1st Plan (1951-56)	—	3.4 %
2nd Plan (1956-61)	5.00%	4.00%
3rd Plan (1961-66)	over 5.00%	3.2 %
4th Plan (1969-74)	5.5 %	—

Source : *Fourth Five Year Plan, Draft, op. cit.*

Third Five Year Plan, op. cit.

R. Venkataraman, "Role of Planning in India's Economic Transformation, *India News* (Washington, D. C., January 23, 1970), 3.

17. J. K. Galbraith, *op. cit.* ; Mallenbaum, *op. cit.*

18. Gunar Myrdal, *Asian Drama*, Vol. II, (Pantheon), 919-934. B. R. Shenoy, a free-enterprise economist of the Swatantra Party also refers to "windfall returns ensuing from sheltered markets and the semi-monopolistic positions created by import restrictions and capital issues controls". *op. cit.*, 21.

19. Fertilizer factories have been licensed in the private sector though this field was reserved for the state in the 1956 Resolution.

20. Ashoke Mehta, quoted in Gunar Myrdal, *ibid* , 927.

This Table shows that the economy has grown at an overall rate of 3.5 per cent per annum during the last two decades. In absolute terms, the national income has increased from 9,650 crores to 17,300 crores²¹ between the periods 1951 and 1958, an increase of 80 per cent.

This does not appear quite impressive from the figures and one is not sure if the national income accounting has measured growth of output in different sectors accurately.²² National income is an useful but perhaps not sufficient measure of growth and it is quite helpful to look at some other criteria of social mobilization and economic development before basing any value judgement on the obtained growth rates alone.

To start with, we may examine the rate of growth in agricultural and industrial output, which are the two basic sectors in a dual economy of this type. Tables IV and V below, present some useful data in this connection.

TABLE IV
INCREASE IN AGRICULTURAL PRODUCTION
(1950-51—1967-68)
FIGURES IN MILLIONS OF TONS/BALES

	1950-51	1967-68	% Increase
Foodgrains	51	95	86.27
Oil Seeds	5.2	8.2	57.69
Cotton	2.9	5.6	93.10
Jute	3.5	6.4	82.86
Sugarcane	6.9	10.0	44.93

Source : R. Venkataraman, *op. cit.*, 3.

It can be seen from this Table that while foodgrains production has increased by 86 per cent, agricultural production in general has risen by about 72 per cent.

21. At 1960-61 prices. See R. Venkataraman, *op. cit.*, 3.

22. The presence of a large subsistence sector might have led to some undercounting.

TABLE V
VALUE ADDED IN MANUFACTURING INDUSTRY
(Rs. CRORES IN 1960-61 PRICES)

Industries	1950-51	1965-66	% Increase
Machineries	30.9	315.9	922
Intermediate Goods	89.5	620.2	593
Consumer Goods	260.7	487.6	87
Others	3.1	10.3	232
Total	384.2	1434.0	

Source : R. Venkataraman, *op. cit.*, 3.

This Table shows a significant increase in the machinery and intermediate goods sectors as compared to consumer goods, which has recorded the smallest per cent increase. This emphasises two things ; the structural change taking place in Indian economy and the high rate of expansion of the 'growth sectors' as compared to traditional industries.

An examination of some selected indicators of social and economic growth again produces very revealing results.

TABLE VI
GROWTH (ACHIEVED) OF SELECTED INDICATORS
1950-51—1965-66—1967-68

Sl. No.	Indicators	1950-51 (Base)	1965-66	1967-68	% Increase
1.	Surfaced Roads	157,000 km.	284,000 km.	—	80.9
2.	Steel	1.0 m. tons	4.5 m. tons	—	350.0
3.	Locomotives	7 nos.	276 nos.	—	3842.9
4.	Electric Energy (Installed capacity)	2.5 m.KW.	—	13.3 m.KW.	432.0
5.	No. of Villages Electrified	4,000	—	62,237	1455.9
6.	Bicycles	0.099 m.nos.	1.6m.nos.	—	1516.2
7.	Pupils in Primary Schools	19.2m.	50.95m.	—	165.4
8.	Intake Engrg.	4,000	—	25,000	525.0
9.	Life Expectancy	35 yrs	—	52 yrs.	48.6

Source : India, 1968 (Government of India, New Delhi), and R. Venkataraman, *op. cit.*, 3.

One can almost see the effects of these changes in rural India now. Bicycles and transistor radios have entered remote villages, consumption of electric energy has gone up, there has been a tremendous growth of road transport services due to development of surfaced roads, levels of education and health have gone up and the list can be made much more exhaustive.

In the context of all these symptoms, India's growth rate of 3.5 per cent per annum acquires considerable significance. Compared with the 4.25 per cent growth rate of the United States economy between 1839 to 1962.²³ India's rate of growth could almost be said meaningful if she did not have a population growth of 2.5 per cent per annum, pulling down her per capita growth rate considerably. It may be borne in mind that before the Plan era began in 1950-51, the Indian economy was practically stagnant, growing at about one per cent per annum,²⁴ which was even less than the rate of growth of the population.

There have been many arguments for and against the mixed economy approach adopted in Indian planning. The Indian Government has justified its policy on the basis of two important objectives, (a) hastening structural transformation and developing an infrastructure required for rapid economic growth, (b) reducing concentration of economic power and inequalities of income.²⁵ Critics have argued that a free enterprise approach would have given India a higher rate of growth, by encouraging savings and investments in the modern sector. This point can only be argued at a theoretical level and obviously cannot be demonstrated. Our analysis however has shown that the growth rate achieved in India under mixed economy, if not spectacular, is certainly not disparaging. It could have been better and more effective if population growth had been smaller, an agricultural breakthrough achieved, there was no foreign exchange constraint, and less political and administrative problems at home. It is not proposed to consider these aspects here, but before leaving the present area of discussion, it would be worthwhile to suggest a few policy measures which would be helpful in

23. Simon Kuznets, *Modern Economic Growth* (Yale University Press, 1966), 65, Table 2.5 (42.5 per cent per decade)

24. R. Venkataraman, *op. cit.*, 3.

25. *Third Five Year Plan*, *op. cit.*, 2.

removing obstacles to growth under the existing structural pattern of mixed economy.

In a mixed economy, the efficiency of the public sector becomes an important desideratum. The private sector operates efficiently because of its profit-maximizing approach. In the public sector, the role of the profit motive has not been sufficiently visualized. The efficiency of investment can only be judged from its returns and profits earned by a firm. There has been considerable criticism inside India and abroad that many of its public enterprises are running on loss or not making adequate profits. An investment of 3500 crores in the public sector covering 80 units has earned a profit of only 48 crores covering 31 units during the year 1967-68. The steel and heavy engineering industries²⁶ where the bulk of the investment is caught, are running on loss. The panel of economists associated with the framing of the Second Five Year Plan had warned about this in 1955,²⁷ but the situation in India now is no better after a decade. There is a good case for a change in Government rules, regulations, etc. in enabling management of public enterprises to work on the same profit maximizing principle as the private sector. Greater earnings from public enterprises like savings from the private sector can lead to increased investment and accelerate the pace of growth.

The managerial talent required to run the public sector industries has to be improved. There has been criticism that Civil Servants have not always been successful in running such enterprises in spite of notable exceptions. The Government of India made some attempts to establish a Management Pool by drawing capable men from the private sector, public services etc., but the experiment was given up even before its results could be seen. Industrial management needs specialization and a cadre of specialized managerial talent ought to be built up. A definite

26. E. G., Hindusthan Steel Ltd, Heavy Engineering Corporation, Bharat Heavy Electricals, Heavy Electricals India and Allied Machinery Corporation.

27. "We may draw attention to a danger that is inherent in the type of mixed economy we have viz; unless adequate care is taken the slowest ship may set the pace of the convoy and inefficient units may get undue protection." *Papers relating to the formulation of the Second Five Year Plan*. (Government of India, Planning Commission, New Delhi, 1955), 16.

pattern of organisation and management of public sector units has to be established.²⁸

Indian planning has been remarkable in macro-economic analysis and in reconciling aggregates "with great sophistication" from Material and Financial Balances, but poor enough in microplanning, which is equally important.²⁹ To judge the social profitability of an investment, it is essential to know its SMP of rate of return between competing public and private sector projects and no economic value judgement can be made without it. If public sector projects are chosen on other criteria, the decision is not economically rational and the projects may develop into cesspools of inefficiency.³⁰ This emphasizes the need for skilled project evaluation, before it is assigned to any sector, in the best interests of economic growth.

Finally it can be said that mixed-economy is not anti-growth and if these policy changes are implemented, the performance of mixed economy in India can be greatly improved.

28. *Papers relating to the formulation of the Second Five Year Plan*, op. cit., 15. the panel of economists had observed the lack of such a pattern way back in 1955 and no break-through has yet been achieved.

29. R. I. I. A., *The Crisis of Indian Planning* (Oxford, 1968), 8-9.

30. *Ibid*, 8-10. This point has been well elaborated by Michael Lipton and Paul Streeten.

A STUDY OF THE WORKING OF THE AGRICULTURAL REFINANCE CORPORATION OF INDIA

Ajit Kumar Mitra*

Long-term financial investment or the 'term-finance for investment' as it is otherwise known occupies a very important place in any production-process. To bring about development in the production-process, sometimes changes of basic structural nature are necessary. Such changes can only be financed by the long-term capital investment. From this it is clear that the 'term-finance for investment' occupies a very important place in the agricultural development too. In recent years when the scope for extensive cultivation in Indian agriculture has greatly declined, attempts are being made to develop it by increasing investment on land and bringing about major changes in the production-process. These changes are often of basic structural nature. Consequently, many of these changes require heavy initial capital investment of medium and long-term nature. It has been estimated¹ by the Working Group of the Agricultural Production Board that the requirement of the long-term credit for different purposes during the Fourth Plan (1969-70—1973-74)

* The author gratefully acknowledges the help rendered by Sri B. Satyanarayana, Senior Analyst, Agricultural Refinance Corporation, Bombay, in making available some of the latest information. He is also thankful to Dr. Bidyadhar Misra, who was kind enough to go through an earlier draft of this paper. However, the author alone is responsible for the views expressed and for the short-comings of the paper.

1. Reserve Bank of India—Report of the All India Rural Credit Review Committee, Bombay, 1969, Table 7. p. 93. For details please see Table 1 in the appendix of this paper.

would be of the order of Rs. 1,500 crores. Besides, the requirement of the medium term credit² would be of Rs. 477 crores. The All-India Rural Credit Review Committee which accepted both the estimates of the Working Group³, rounded off the amount of medium-term credit to Rs. 500 crores. So, on the whole, the requirement of medium and long-term credit during the Fourth Plan would be approximately of the order of Rs. 2,000 crores. But at present there are few institutional arrangements in the country to meet this requirement for credit. The only institution, which provides such loans to agriculture is Land-Mortgage Banks or the Land Development Banks as they are recently called. But in most of the states these institutions suffer from poor financial resources and more often a relatively large part of their resources are used for repayment of old debts or purchase of land, neither of which directly help in the agricultural development.⁴ Besides, the loans granted by them for genuinely developmental purposes were diffused, isolated and for that reason neither adequately supervised nor meaningfully related to specific schemes of development.⁵ Further, to develop agriculture, it is necessary to develop and renoyate our plantation industry. The development of plantation industry requires heavy initial capital investment of long-term nature. It was repeatedly emphasised in the Conference of Land Mortgage Banks held in 1960 and the Standing Advisory Committee on Agricultural Credit that the responsibility of providing long-term finance for such special schemes could not be undertaken either by the Land Mortgage Banks or the Commercial Banks unless refinancing facilities were made available to them. So to strengthen the credit-base of the Land Development Banks and other institutions providing long-term finance to agriculture and to provide loans for certain specific projects under liberal terms and conditions through these institutions, the Agricultural Refinance Corporation (ARC) was constituted in 1963. In this paper an attempt is made to evaluate the working of the ARC particularly in achieving these objectives.

Before studying the working of ARC, a brief reference has been made to the constitution, management and the resources of the corporation.

2. *Ibid* — p. 96

3. *Ibid* — p. 96

4. *Ibid* — p. 800

5. *Ibid* — p. 800

Constitution and Management of the ARC

The ARC was set up by an Act of Parliament in 1963 and started functioning from the 1st July, 1963. The object of the corporation, as has been already indicated, is to provide medium and long-term credit by way of refinance or otherwise for the development of agriculture and other matters connected therewith or incidental thereto. To be more specific the purposes for which refinance facilities are made available by the ARC to the eligible institutions may be stated as follows : (i) land-reclamation, preparation of land for full utilisation of irrigation facilities, (ii) development of special crops such as arecanut, cocoanut, cashewnut, cardamom, coffee, tea, etc., (iii) development of mechanised farming and use of electricity to energise wells, (iv) development of animal husbandry, dairy farming, pisciculture including co-operative fisheries, poultry farming, etc. The ARC has also agreed to provide refinance for setting up godowns and silos by the organisation of agriculturists or private entrepreneurs for the use of agriculturists. The ARC will also consider the provision of financial assistance for the development of the plantations involving the purchase of neglected estates or virgin lands provided it forms a part of an integrated scheme covering both acquisition of land/estates and its development and the more substantial portion of a total assistance is to be utilised for the development of land/estates.

The membership of the ARC is confined to the following financing institutions : (i) Reserve Bank of India, (ii) Central Land Mortgage Banks, (iii) State Co-operative Banks, (iv) Scheduled Commercial Banks, (v) Life Insurance Corporation of India, (vi) Insurance and Interest Companies, (vii) Co-operative Insurance Societies, etc. or other financing institutions as may be notified by the Government of India. In other words, only the financing institutions belonging to these categories are eligible to become the shareholders of the ARC. By the end of June, 1971, the total number of eligible institutions which were shareholders of the ARC was 87, of which 18 were central land-mortgage banks, 22 were state co-operative banks and 41 were scheduled commercial banks. The detailed break-up of the different categories of the financing institutions, who were share-holders of this corporation up to the end of June, 1971 and the number of shares held by them is given in Table 2. This table shows that the Reserve Bank of India was the most dominant share-holder of the ARC and it was very much dependent on

the Reserve Bank for its resources. Another important thing that is to be noticed from this Table was that so far though the number of the scheduled commercial banks, who were members of the ARC was larger than those of the central land development banks and the State Co-operative bank, yet the number of shares held by these latter institutions was larger than that of scheduled commercial banks.

The institutions which are eligible to avail of refinance from the ARC are (i) the State Co-operative Banks, (ii) the Central Land Mortgage Banks, and (iii) the Scheduled Commercial Banks, which are its shareholders.

The management of the ARC is vested in a Board of Directors consisting of nine members. A Deputy Governor of the Reserve Bank of India is nominated by the Bank as the Chairman of the Board and the Managing Director is appointed by the Reserve Bank of India in consultation with the Board. The Reserve Bank also nominates one of its officers as a member of the Board. The Government of India nominates three officers of the Central Government as Directors. There are three other Directors elected by the shareholders—one by the central land mortgage banks, another by the State co-operative banks and the third by the Life Insurance Corporation, the scheduled commercial banks and other insurance and financing agencies, which are shareholders of the ARC.

Resources of the ARC

The financial resources of ARC are drawn mainly from its (i) share-capital, (ii) bonds and debentures issued, and (iii) other loans and advances particularly from the Reserve Bank of India and the Central Government.

The authorised share-capital of the ARC is Rs. 25 crores divided into 25,000 fully paid-up shares of Rs. 10,000 each. In the first instance, 5000 shares valued at Rs. 5 crores were issued of which an amount of Rs. 2.50 crores was subscribed by the Reserve Bank of India, Rs. 1.50 crores by the State co-operative banks and the central land mortgage banks, and Rs. 1 crore by the scheduled banks, investment and insurance companies. The shares are treated as trustee securities and are

guaranteed by the Central Government as regards repayment of principal and payment of an annual dividend, fixed at $4\frac{1}{2}$ per cent in the case of the first issue. The Government of India gave an interest-free loan of Rs. 5 crores to the ARC, the repayment of which would commence only after 15 years.

The ARC is also empowered to raise resources in several other ways. It can borrow from the Reserve Bank of India (for a period not exceeding 18 months) and from the Central Government and other institutions approved by the Government. It can issue bonds and debentures and accept fixed deposits for 12 months and more. The maximum borrowing power of the ARC through all these sources is limited to twenty-times its paid-up capital and reserve fund.

Besides, in order to enable the ARC play a much bigger role in the matter of providing refinance facilities for the agricultural development during the Fourth Five Year Plan, the recently enacted Agricultural Refinance Corporation (Amendment) Act, 1971, enables it to obtain loans and advances from the National Agricultural Credit (long-term operations) Fund maintained by the Reserve Bank of India for fixed periods not exceeding twenty years from the date of obtaining such loans.⁶ For the first time a loan of Rupees five crores only⁷ was sanctioned to it as per the provision of amended Act on the 30th December, 1971.

Working of the Corporation

In this section a critical analysis of the working of the ARC has been attempted. The working of ARC during the last eight years shows that from the slow pace of initial progress, it has just started expanding its activities. Table 3 shows that the ARC started functioning in 1963-64 with only 3 schemes with a financial commitment of Rs. 2.45 crores and during the first four years of its existence, the progress achieved was very slow. But from 1967-68, there has been a change in the situation and the ARC has been expanding its activities at a faster pace. In 1967-68

6. Reserve Bank of India Bulletin, Vol. XXV, No. 9 September, 1971, p. 1462.

7. Reserve Bank of India Bulletin, Vol. XXVI, No. 1, January, 1972, p. 71.

it sanctioned 89 new schemes (with a financial commitment of Rs. 58.64 crores) which were spread over as many as sixteen states and one Union territory. This pace of expansion in its activities was maintained in the subsequent years. The total number of schemes sanctioned increased to 108 (with a financial commitment of Rs. 69.32 crores) in 1968-69 and to 142 (with financial commitment Rs. 70.92 crores) in 1969-70. In 1970-71 probably to stabilise the gains already achieved and to guard against the non-viable schemes, it adopted a cautious approach and sanctioned only 100 schemes with a financial commitment of Rs. 53.92 crores. The cumulative figures regarding the amount of refinance facilities offered by the ARC during the last eight years show that it has increased from Rs. 2.01 crores in 1963-64 to Rs. 248.66 crores (both figures are suitably adjusted on account of schemes withdrawn or rephased subsequently). Besides, recently it has granted many concessions and relaxations to offer refinance facilities to different financing institutions. "For instance, in the beginning the policy of the Corporation was that activities like construction of wells and other minor irrigation works by individual cultivators would be eligible for refinance only if such schemes were prepared for a compact area through the formation of Co-operative irrigation societies and not if the development was left to take place through individual efforts. Subsequently, at the instance of Government of India, the Corporation agreed to consider schemes involving the construction of wells, installation of tube-wells, etc., through individual efforts also, provided they were compact area development schemes assured of assistance from the State government in the matter of inputs, technical aid and administrative and supervisory facilities. Again, in the case of financial assistance for development of plantation crops, the Corporation agreed in 1964-65 to entertain proposals such as those relating to construction of houses for labourers, provided the activity formed part of a composite scheme for plantation development; and also for the discharge of old debts, in appropriate cases and to a reasonable extent, if such debts had been incurred for development purposes in the recent past. In 1966-67, the Corporation offered to consider as individual proposition, any proposals for setting up of processing units, such as tea-factories and leaf-houses, provided that the installation of the unit was in each case linked to the development of the plantation crop with assured finance from the concerned statutory board. The scope for this type of finance came to be further widened when the Corporation decided in 1967-68 to provide financial assistance for schemes of plantation development involving the purchase

of a neglected estate or virgin land, provided it formed part of an integrated scheme covering both acquisition of estate and its development."⁸

In spite of all these it may be said that the volume of refinance offered so far by the ARC for various medium and long-term purposes has been too inadequate particularly when compared with the requirements of such credit during the Fourth Five Year Plan as calculated by the Working Group of the Agricultural Production Board (Table 1). For example, the total volume of medium and long term credit required during the Fourth Five Year Plan (1973-74) would be Rs. 2,000 crores (medium term Rs. 500 crores and long-term Rs. 1,500 crores). But the total amount of refinance facilities offered by the ARC from 1963 to 1971 was only Rs. 248.66 crores. Similarly, for the development of minor irrigation the long-term credit requirement during the Fourth Plan would be Rs. 725 crores. But from 1963 to June 1971 the ARC made a commitment to offer refinance facilities up to Rs. 169.48 crores. From Tables 1 and 5, it can also be seen that similar deficiencies exist in other types of long-term credit-requirements. It may, of course, be pointed out in this connection that the ARC was not expected to meet the entire amount of medium and long-term credit-requirement of agriculture. Its most important task was to strengthen the financial position of the institutions offering term-lending to the agricultural sector. But in this connection it is to be remembered that the financial position of most of these institutions is in an extremely bad state. If ARC is really interested in strengthening the financial base of these institutions, it would have played a very important and effective role in the matters. But the way in which ARC had worked during the last eight years, fails to inspire much confidence that it would be successful even in achieving this limited objective.

Secondly, an analysis of the purposes for which refinancing facilities were offered by the ARC up to the end of the June, 1971, shows that in its programme for refinancing, it had shown special preference to the development of minor irrigation. Table 5 shows that out of 458 schemes as many as 237 (51.7 per cent) involving ARC's financial

8. Reserve Bank of India—Report of the All-India Rural Credit Review Committee, Bombay, 1969, pp 807-808.

commitment of Rs 169.48 crores (68.2 per cent of the total financial commitment) were devoted for the development of the minor irrigation.⁹ It appears from the same table that compared to the development of minor irrigation schemes, other schemes of development requiring long-term finance had not received sufficient attention of the ARC. It is, of course, true that the ARC had sanctioned refinance facilities to 138 (30.1. per cent) schemes for the development of plantation and orchards. But ARC's financial commitment in these schemes was only Rs. 18.97 crores (7.6 per cent of the total financial commitment). This overwhelming preference for the development of the minor irrigation projects might be due to the following three reasons. First, the proportion of irrigated area to the total cropped area is extremely low in our country at present. So to increase the area under irrigation quickly, special preference had been shown to the development of minor irrigation. Secondly, the ARC might be interested to utilise its available financial resources in the most fruitful way by limiting its use to one or two items of development. Finally, the ARC or the institutions receiving refinance facilities from ARC might not have sufficient number of experienced and trained personnel to administer such loans for other items of use. Whatever might have been the reason, this type of financing programme would benefit only the States with ready programmes for irrigational development. Besides, this would create a lot of imbalances in the development of the agrarian economy of the country.

Thirdly, as ARC showed special preference for the development of irrigation potentiality, bulk of its refinance was channelled through the Land-Development Banks. Table 6 shows that out of 458 schemes 319 (69.7 per cent) involving ARC's financial commitment Rs. 222.37 crores (89.4 per cent of the total financial commitment) was channelled through the Land-Development Bank. From this it appears only the States with ready irrigational development programme to implement and well-developed Land Development Banks were benefited by the refinancing programme of the ARC. This can be clearly seen from the Table 7.

9. These schemes would bring about 6,85,000 acres of land under double-cropping and reclaim about 7,21,000 acres of land and make them ready for irrigation under the major canal system—Report of the Board of Directors for 1970-71, pp. 5 and 6.

Finally, as has been already indicated, the benefits of the refinancing provision of the ARC were not evenly spread throughout the country. As more than 68 per cent of the refinancing were granted for the development of minor irrigation and more than 87 per cent of refinancing was channelised through the Land Development Banks, it was only those states which had ready schemes for irrigational development and at the same time had a well developed Land-Development Banks, could avail the refinancing facilities of ARC. Thus, from the Table 7, it can be seen that the South-Zone states were the greatest beneficiaries of the refinancing provision of ARC. The first three states which got the largest number of schemes sanctioned in their favour, namely, Mysore, Andhra Pradesh and Tamil Nadu were in this zone. Out of the 458 schemes, sanctioned so far, the Southern Zone states got 238 (52 per cent) schemes involving ARC's financial commitment of Rs. 96.74 crores (38.9 per cent of ARC's total financial commitment) in their favour. The most neglected region from this point of view was the East zone (consisting of Assam, Bihar, West-Bengal and Orissa) where institutional sources of supplying medium term and long-term credit were least developed. Out of the 458 schemes the Eastern states got only 31 (6.8 per cent) schemes involving ARC's financial commitment of Rs. 17.77 crores (7.1 per cent) of the total financial commitment. This type of regional imbalance in the distribution of schemes was likely to accentuate the regional disparity in the agricultural development.

Conclusion

From the above analysis it can be said in conclusion that although ARC has greatly expanded its activities since 1967-68, its achievement in making available medium and long-term financing may be described as 'Just Modest'. In order to play an important role in the sphere of long-term agricultural finance, it will have to expand its activities at a still faster rate. Besides, if it is genuinely interested in the balanced agricultural development of the country, it should not only increase the quantum of its refinance facilities, but should also diversify its refinancing policy to some extent. Further, along with offering refinance, it should also help to develop the term lending institutions particularly in those states where they are not very much developed or in an almost moribund condition at present.

APPENDIX

TABLE 1

ESTIMATES OF LONG-TERM CREDIT REQUIREMENTS DURING
THE FOURTH PLAN (1963-70 To 1973-74)

Item	Amount (in crores of Rupees)
1. Minor Irrigation	725
2. Reclamation of Waste Lands	25
3. Soil Conservation Programme	150
4. Heavy Machinery and Implements	300
5. Orchards and Plantations	75
6. Area Programme	125
7. Rural Electrification	100
TOTAL :	1,500

Note :—Estimates were originally made by the working Group of the Agricultural Production Board and accepted by the All India Rural Credit Review Committee. It may also be noted in this connection that the Working Group estimated the requirement of the medium term credit to be of the order of Rs. 477 crores, which was accepted by the All-India Rural Credit Review Committee but rounded off to Rs. 500 crores, of which Rs. 250 crores was for the purchase of livestock.

Source :—Report of the All India Rural Credit Review Committee, pp. 95 and 96.

TABLE 2

DIFFERENT CATEGORIES OF FINANCING INSTITUTIONS
WHICH ARE MEMBERS OF THE CORPORATION AND THE
NUMBER OF SHARES HELD BY THEM

Type of the Institution	Number of members	Number of shares	Value of the shares (Rupees in Lakhs)
1. Reserve Bank of India	1	2,500 439	250.00 43.90
2. Central Land Development Banks	18	705	70.50
3. State Co-operative Banks	22	652	65.20
4. Scheduled Commercial Banks	41	590	59.00
5. Life Insurance Corporation of India	1	100	10.00
6. Other Insurance and Investment Companies	2	12	1.20
7. Co-operative Insurance Societies	2	2	0.20
TOTAL :	87	5,000	500.00

Source :—Agricultural Refinance Corporation—Report of the Board of Directors for 1970-71, p. 14.

TABLE 3
SCHEMES SANCTIONED BY THE ARC WITH THEIR FINANCIAL IMPLICATIONS
(AMOUNT IN CRORES OF RUPEES)

Year (July-June)	Number of schemes sanctioned during the year excluding those with- drawn during the same year.	Total financial assistance for schemes sanctioned during the year.	Corporations commitment to total financial assistance.	State Govt.'s Banks' Commitment.	Loans drawn from and debentures subscribed to by the Corporation during the year.
1963-64	3	2.72	2.45	0.27	...
1964-65	10	20.60	16.88	3.72	0.45
1965-66	24	17.96	14.18	3.78	4.45
1966-67	15	10.53	8.53	2.00	2.08
1967-68	89	68.16	58.64	9.52	5.67
1968-69	108	79.21	69.32	9.89	17.84
1969-70	142	92.78	70.92	21.86	28.60
1970-71	100	62.15	53.92	8.23	30.62
Total	491	354.11	294.84	59.27	89.71
Total reduction up to 30.6.71 due to rephasing of 157 schemes and withdrawal of 33 schemes sanctioned earlier. 33					
		61.11	46.18	14.93	—
Total	458	293.00	248.66	44.34	89.71

Source : Agricultural Refinance Corporation—Report of the Board of Directors for 1970-71, Appendix 5 page 30. The last column of the table is taken from the page 3 of the same report.

TABLE 4
SCHEMES SANCTIONED BY THE ARC WITH THEIR FINANCIAL IMPLICATIONS AS AT THE END OF
EACH YEAR ON A CUMULATIVE BASIS
(AMOUNT IN CRORES OF RUPEES)

Year (July-June)	Number of schemes sanctioned	Total financial assistance sanctioned	Corporation's commitment	State Govt.'s Banks' commitment	Loans drawn from/ debentures subscribed to by the Corporation during the year
1963-64	3	2.23	2.01	0.22	—
1964-65	13	14.19	12.08	2.11	0.45
1965-66	36	27.84	22.93	4.91	4.90
1966-67	42	36.97	30.00	6.97	6.98
1967-68	128	98.58	83.72	14.86	12.65
1968-69	233	172.04	148.00	24.04	30.49
1969-70	371	259.51	214.89	44.62	59.09
1970-71	458	293.00	248.66	44.34	89.71

Note: Data relate to the position as at the end of each year on a cumulative basis suitably adjusted on account of schemes withdrawn or rephased subsequently.

Source: ... Reserve Bank of India Bulletin, Vol. XXV, No. 9, Sept. 1971, Bombay, Table No. 60, p. 1550.

TABLE 5
DISTRIBUTION OF SCHEMES SANCTIONED BY THE ARC ACCORDING TO THE PURPOSE
(UP TO JUNE 30, 1971)
(AMOUNT IN CRORES OF RUPEES)

Purpose	Number of schemes	Total financial assistance	Corporation's Commitment	State Govt.'s and Banks' Commitment	Loans drawn from/debenture subscribed to by ARC.
1. Development of minor irrigation	237 (51.7)	188.33 (64.28)	169.48 (68.2)	18.85	58.22
2. Development of land	43 (9.4)	56.72 (19.36)	43.42 (17.5)	13.30	19.62
3. Farm Mechanisation with tractors and power tillers	10 (2.2)	6.28 (2.14)	4.71 (1.9)	1.57	0.41
4. Soil Conservation	2 (0.4)	2.17 (0.74)	1.95 (0.8)	0.22	1.95
5. Development of Plantations and Orchards.	138 (30.1)	23.54 (8.03)	18.97 (7.6)	4.57	5.56

6. Poultry Farming	7	0.50	0.48	0.02	0.07
	(1.5)	(0.17)	(0.2)		
7. Development of Fisheries	10	5.41	3.76	1.65	1.29
	(2.2)	(1.85)	(1.5)		
8. Dairy Farming	5	1.76	1.38	0.38	—
	(1.1)	(0.60)	(0.5)		
9. Construction of Storage facilities	6	8.29	4.51	3.78	2.59
	(1.4)	(2.83)	(1.8)		
Total	458	293.00	248.65	44.34	89.71
	(100.0)	(100.0)	(100.0)		

Note : Suitable adjustments have been made for schemes withdrawn or repensed. Figures within bracket indicate percentage.

Source : Agricultural Refinance Corporation—Report of the Board of Directors for 1970-71—Appendix I, p. 17

TABLE 6

TYPES OF FINANCING AGENCIES THROUGH WHICH SCHEMES WERE
SANCTIONED UP TO THE END OF JUNE, 1971.
(AMOUNT IN CRORES OF RUPEES)

Types of financing Agency	Number of schemes	Total financial assistance	Corporation's commitment	State Govt.'s Banks' commitment	Loans drawn from/ and debentures subscribed to by ARC
Central Land Development Banks	319 (69.7)	257.31 (87.82)	222.37 (89.4)	34.94	81.25
State Co-operative Banks	22 (4.8)	17.17 (5.86)	11.40 (4.6)	5.77	4.04
Scheduled Commercial Banks	117 (25.5)	18.52 (6.32)	14.89 (6.0)	3.63	4.42
Total	458 (100.0)	293.00 (100. 0)	248.66 (100. 0)	44.34	89.71

Note : Figures within bracket indicate percentage.

Source : *Ibid*—Appendix 2, p. 18.

TABLE 7 (Contd.)

ZONAL AND STATEWISE BREAK-UP OF THE SCHEMES SANCTIONED BY
THE ARC UP TO THE END OF JUNE, 1971
(AMOUNT IN CRORES OF RUPEES)

State/Union Territory/zone	Number of schemes sanctioned	Total financial assistance	Corporation's commitment	State Govt.'s and Banks' commitment	Loans drawn from and debenture subscribed to by the Govt.	Percentage to the total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
North Zone	61(13.3)	61.21	54.18(21.8)	7.03	30.22	33.69
Delhi	1(0.2)	0.12	0.12(0.1)	—	0.05	0.07
Jammu and Kashmir	3(0.7)	1.80	1.35(0.5)	0.45	0.64	0.71
Haryana	17(3.7)	18.12	16.20(6.5)	1.92	9.28	10.35
Punjab	29(6.3)	33.23	29.54(11.9)	3.69	18.63	20.77
Rajasthan	11(2.4)	7.94	6.97(2.8)	0.97	1.61	1.79
West Zone	77(16.8)	42.97	37.22(15.0)	5.75	13.00	14.50
Gujarat	39(8.5)	22.71	19.54(7.9)	3.17	5.29	5.90
Maharashtra	38(8.3)	20.26	17.68(7.1)	2.58	7.71	8.60

(1)	(2)	(3)	(4)	(5)	(6)	(7)
South Zone	238(52.0)	114.56	96.74(38.9)	17.82	35.02	39.03
Andhra Pradesh	74(16.2)	40.05	34.16(13.7)	5.89	17.58	19.60
Kerala	23(5.0)	6.43	5.24(2.1)	1.19	1.34	1.49
Mysore	85(18.6)	35.95	29.85(12.0)	6.10	7.01	7.81
Tamil Nadu	56(12.2)	32.13	27.49(11.1)	4.64	9.09	10.13
Central Zone	51(11.1)	52.85	42.75(17.2)	10.10	8.41	9.38
Madhya Pradesh	19(4.1)	19.14	17.09(6.1)	2.05	1.70	1.90
Uttar Pradesh	32(7.0)	33.71	25.66(10.3)	8.05	6.71	7.48
East Zone	31(6.8)	21.41	17.77(7.1)	3.64	3.06	3.40
Assam	9(2.0)	1.14	1.02(0.4)	0.12	0.73	0.81
Bihar	8(1.7)	16.18	13.60(5.5)	2.58	1.93	2.15
Orissa	8(1.7)	2.00	1.55(0.6)	0.45	0.27	0.30
West Bengal	6(1.4)	2.09	1.60(0.6)	0.49	0.13	0.14
All India	458(100.0)	293.00	248.66(100.0)	44.34	89.71	100.00

Note—Figures within bracket indicate percentage.

Source—Derived from the *Appendix Three* of the Report of the Board of Directors for 1970-71 of the Agricultural Refinance Corporation, pp. 20-27.

MARXIAN THEORY OF ECONOMIC GROWTH AND INDIA'S ECONOMIC DEVELOPMENT

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Marxism holds irresistible temptation to the countries long exploited masses of the underdeveloped countries. For the teeming millions of Asia, Africa and Latin American countries there has been no end of exploitation with the attainment of their independence. Foreign exploitation has been replaced by indigenous exploitation. And this exploitation of man by man—of labour by the owner of capital, of landless worker by the landlord—provides us the clue to the beginning of the process of the eventual break up of capitalism and the ultimate emergence of socialism and communism. Our present task here will be to make an assessment of the relevance of Marxism for an underdeveloped overpopulated country like India where the class antagonism between the haves and have-nots has reached a new peak.

Marx's reading of the social process—a process embracing socio-economic and political developments—was vastly different from that of others. His diagnosis of social relations was based on a materialistic interpretation of history. His study of the growth and development of capitalism was limited in time and scope. The Industrial Revolution that took place in the middle of the Nineteenth century greatly increased the productivity of labour. This increased productivity was entirely appropriated by the employer, who, in turn raised the rate and volume of saving and pushed up the level of investment. Higher investment which

always goes with higher exploitation of labour and denying the labour a share in increased productivity under capitalist development was crucial for the profit-minded and cost-conscious entrepreneur to maintain the edge of technological superiority over his rivals. Technological improvements under the capitalist competition would lead to the use of capital intensive techniques. Capitalists who fail to keep up with the technological improvements will be out of scheme and join the rank of the proletariats. In the process, labour would get alienated, from the stream of life and form a hostile camp to challenge and dislodge the minority affluent class. Once the wealthy minority, the bourgeoisie is expropriated the proletariats will come to power heralding the dawn of a new civilisation called socialism. It will need a step further to reach communism. Hence, in the Marxian analysis, Capitalism constituted a passing phase in man's march towards communism. This is a brief account portraying the inevitable emergence of socialism.

In India, since our independence and even long before it, we accepted under the leadership of Pandit Nehru socialism, rather Democratic socialism as it turned out to be, as our goal. Marx predicted the arrival of communism after capitalism had attained its fulfilled growth. But the countries that have gone communist were conspicuous by the absence of any substantial capitalist development. But, as pointed out by Prof. Tucker, "a polarized pre-revolutionary society, a society divided into two hostile class camps" in the Marxian sense existed. And the process of liquidating whatever capitalism there might be in these countries and installing communism was facilitated by the presence of a radical intelligentsia. However, India today presents a picture where some of the Marxian variables are found operating. Before we test the applicability of the Marxian theory of growth in India, a little digression into the nature and characteristics of our society may prove useful.

India presents a case of arrested growth during the British rule. Our socio-economic and political dealings and transactions with the British gradually transformed the traditional outlook of the privileged few who came in contact with them. A static society was touched with changes. But this wind of change did not materially affect the rural masses who continued to live in their world of seclusion. The gradual development of the urban centres alienated them from the Indian villages. The few living in urban centres, entrepreneurs, administrators, etc. constituted themselves into a privileged minority whereas the masses in Indian

villages continued to live in 'pathetic contentment'. In the urban centres two classes—employers and the working class corresponding to the two classes—the landlords and the landless tillers in rural India came into existence. The affluent elite and the poverty-stricken masses became marked in industrial centres. In the Marxian analysis, there emerged the bourgeoisie with the development of industries in India. Corresponding to it, the number of proletariates multiplied. The class antagonism between them became marked. The Indian entrepreneur preferred wasteful expenditure out of increased productivity to grant a share to the workers.

Corresponding to the happenings in the urban India, developments in the rural India was slow. For the grip of tradition, the addictment to "pathetic contentment" a philosophic rationalisation of one's economic backwardness, was stronger here. The God-fearing simple Indian villagers took a long time to raise their voice against the gross injustice inflicted on them by their landlords or Zamindars. Moreover, the administration was more class-oriented than the mass oriented in the British time.

However, there was a great reawakening during the Independence Movement in India. The year 1947 marked the Independence of India. As pointed out earlier, Socialism was declared to be the cherished goal of the country. Pandit Nehru championed the cause of socialism, of course, with a difference. It was not socialism of Marxian brand that would usher in communism but socialism of Indian brand that would be based on the policy of "Live and let others live", strengthening the democratic force than undermining them. We introduced planning in India as a means of raising the standard of living of the people. The adoption of Economic Planning gave us a semblance of our seriousness in achieving socialism.

Socialism in India did not mean a total annihilation of the propertied class nor did it imply an outright takeover of the private industries by the Government. It rather ensured the co-existence of both the public sector acquiring the "commanding heights" of the economy and the private sector. In fact, socialism in India was given a new orientation to approve the co-existence of the people's sector with the personal sector. Gradually, however, socialism got diluted. The Congress party (undivided) oscillated between the unqualified acceptance of socialism and the pressure of the vested interests.

On account of the economic planning in India, there was a great deal of industrial expansion both under the State and the private entrepreneurs. A large class of proletariats emerged corresponding to the landless agricultural peasantry which was already there. No doubt, the productivity of the economy increased, but the fate of the worker the proletariat continued to deteriorate or at best remained unchanged. The higher productivity was realised by the entrepreneur who most often, unlike his 19th century counterpart in the Western countries, indulged in wasteful consumption or social wastage. Different legislative measures were passed, but nothing could ameliorate the fate of the working class. It does not, however, mean that there was no improvement in his economic lot. In fact, there was, but the gulf of inequality between the affluent minority and the starving masses continued to expand. And as the process went on, there was a gradual, slow alienation of the proletariats from the ruling classes. Social tension between the have and have-nots, mass discontentment, agrarian agitation, industrial and political murders, forcible occupation of land of the landlords became quite visible in the Indian subcontinent. It looked as if a revolution of the proletariats originating both from the industrial areas and villages would overtake the country. The possibility of Marxian takeover of the country became brighter.

In fact, mass dissatisfaction threatened to engulf the entire nation. India today is more matured and more prone to a Marxian revolution than it was before. Labour, both in the industrialized areas and in the rural area has emerged as a strong force to be reckoned with. But then, it lacks reliable, effective and committed leadership. Not stray incidents here and there but a mass upheaval, a proletarian upheaval is required today for the successful enthronement of socialism in the Marxian sense.

While Marx throughout propounded a revolutionary attitude, a conquest of labour over the bourgeoisie, a violent shake-up of the entire nation, its institutions, traditional ideas on account of the change in the mode of production the Indians have always adopted a reformist attitude, change through persuasion and democratic means. That is where the Congress (R) whose avowed goal is to bring about socialism stands today. No doubt, the Congress (R) under the dynamic leadership of Mrs. Gandhi enjoys today the greatest mass support than even the Marxian ideology. The traditional outlook of Indians abhorring violence, inculcating a sense of toleration of others, and the democratic set-up entailing respect for certain human values work as great constraints for the all-round acceptance of Marxian ideology.

Now there is a growing feeling that Mrs. Gandhi has taken of the initiative for a revolutionary change from the Communists and true to the ideology of the congress (R), she has been making laudable efforts to introduce fundamental changes in the Indian society. These may not be in the nature of a total expropriation of the private property of the bourgeoisie by the working classes, yet her attempts to ensure a fair distribution of property and wealth through the necessary amendments in the Indian constitution in replacing the Fundamental Right to property by Right to property constitute half a revolution. The Revolution in expectations of the masses that has already occurred has to be matched by revolutionary changes in our social relations. Since the mode of production determines the social relations her attempts to expand the state sector and reduce the overwhelming importance of the private sector would undoubtedly confer a higher place to the State than it enjoys today.

The far-reaching changes that are promised to be brought both in the agrarian sector of our economy and in the Industrial sector would appease the labour and improve his social and economic status and reduce his aggressiveness to the existing social order.

The attempts to invite the labour for a share in the increased productivity even to the extent of 50% of the rise in productivity, to associate labour in the management of industries, to guarantee the land to the tiller to extend financial assistance on easy terms—all these greatly reduce the possibility of proletarian take-over of the country in the Marxian sense. In fact, the surplus value, which was so essential in the Marxian theory of growth of capitalist development would now be accruing to the state in greater measure. Therefore, the propelling force for economic development would be coming from the State than from the private sector in India. In fact, the systematic effort aimed at enhancing the responsibility and task of the State sector along with a gradual shrinkage of the private sector in scope and dimensions would knock off the base of the Marxian ideology.

Summary

Marxism promises millenium to the centuries—long exploited masses of the low-income countries. Capitalistic development is only a passing phase in the realisation of the ultimate goal of socialism. If the present communist countries could have turned communist without having experienced fulfilled capitalistic development, the prospects for an under-

developed country like India is no less promising. India today presents a picture of marked class-antagonism, social tension between the rich and the poor, confrontation between the landed aristocracy and the landless peasants, forceful appropriation of the wealth of the haves and the have-nots—the symptoms that might be conducive to a Marxist or proletarian overthrow of the existing social order. In the process of India's development, the gap between the affluent minority and the starving masses has widened. The present context seems to be more favourable for the operation of Marxist Ideology.

But the Marxist appeal today has been stolen by Mrs. Gandhi. Her radical image, the fundamental changes she attempts to bring about in the Indian society, her attempts to systematically eradicate the overwhelming importance of the private sector, to bring agrarian reforms, to ensure a fair return for the industrial and rural labour out of the increased productivity—all through peaceful, democratic means, knock off the base of the Marxian ideology. Added to this, the traditional outlook of Indians abhorring violence, inculcating a sense of toleration of others, a democratic set-up entailing respect for certain human values, the absence of a committed leadership to organise and lead the industrial and landless workers prove hardly encouraging for the acceptance—not to speak of practice—of Marxian Ideology.

STATE INCOME OF ORISSA : AN ECONOMIC APPRAISAL 1960-61 to 1969-70

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1. Introduction

1.1. In the long range programme of economic development, India is still in a transition stage striving hard for attaining a self-sustaining economy. Economic growth achieved so far is below expectation. The growth rate in the economy registered in the past has not been encouraging and this has generated a firm belief that the approach for economic development may be changed so as to bring about the desired result. Consequently greater emphasis has been given to social and infrastructural developments so as to meet the minimum needs of the poorer section of the population besides increasing the scope of commodity producing sectors for the net domestic products.

1.2. State Income is a composite indicator of the overall growth of the State's Economy, whereas Per Capita Income serves to a reasonable extent in revealing the average economic condition of its people as a whole in relation to other States. Even though the per capita income does not depict the levels of income of all the sections of its population (which have at varying economic levels) it gives the State average for comparative purposes. Estimates of State Income reveals as to how much of the Net Domestic Product a State can afford to its people. Further, these estimates over a period of time reveal the degree and direction of change in the pattern of economic development. An idea of relative importance of the different sectors of the State's economy can be

had from the sectoral composition of the State Income (Appendix 'A'). An analysis of such a series of data is necessary for formulation of balanced plans and for further economic development. The comparative study of the district incomes and per capita incomes of the districts will indicate their economic levels and thereby the backward districts can also be identified. As such, it is very important to know the economic conditions of different regions of the State before allocation of Plan investments, since elimination of regional economic imbalances and introduction of uniform growth has been the accepted principle in our Plans. An analytical study of the State income and district incomes provides certain basic material about the changes in the level and pattern of economic development and in the context of Planning it serves as an important tool for allocation of plan investments to attain an overall economic growth.

1.3. State Income estimates measure Net Domestic Product at factor cost and include all factor incomes originating within the State boundaries, irrespective of the fact whether such incomes are owned by persons living inside or outside the State. Adjustment for the flow of factor incomes across the boundaries has not been made in the State estimates.

2. Growth of Real Income

2.1. State Income at constant prices measures the economic growth in real terms by removing the effects of price fluctuations. Over the Third Five-Year Plan the State Income of Orissa at 1960-61 prices rose by 19 per cent in the first four years, as against an increase of about 20 per cent in the National Income during the corresponding period. During the year 1965-66 the rate of growth in the State Income registered a steep decline of 9.8 per cent while the National Income decreased by 5.6 per cent. The decline is mostly due to an abrupt fall in agricultural production owing to adverse weather conditions resulting a severe drought throughout the State. Per capita Income also registered a sharp decline by 11.8 per cent. But in subsequent years however there was a quick recovery in the situation and the State Domestic Product recorded an increase.

2.2. In 1966-67, even though the State Income registered an increase of 9.8 per cent and per capita income of 7.3 per cent over those

of 1965-66, these remained below the level of 1964-65 by 5.4 per cent and 5.3 per cent respectively. Though State Domestic Products of the subsequent years have registered a consistent rise, it is rather unfortunate that till now the level of 1964-65 could not be reached. Correspondingly the National Income in 1966-67 was also still 4.9 per cent below 1964-65 level.

2.3. According to the partially revised estimates prepared by the State Statistical Bureau of Orissa the contribution of agriculture (Proper) including Animal Husbandry which was 57.8 per cent of the State Domestic Product in 1964-65, decreased to 55.1 per cent, 55.5 per cent and 54.9 per cent in 1967-68, 1968-69 and 1969-70 respectively. The shares of secondary and tertiary sectors in the State Domestic Product increase from 36.2 per cent in 1964-65 to 38.9 per cent, 37.8 per cent and 38.3 per cent respectively in 1967-68, 1968-69 and 1969-70 (at 1960-61 prices). The decrease in output in Agriculture (Proper) is mostly due to frequent adverse weather conditions, flood and cyclone and a relative increase in industrial activities. Besides, the Indo-Pakistan war during 1965-66 exerted pressure on the State resources for development.

3. Per capita Real Income

3.1. Per capita real Income which was Rs. 210.94 in 1960-61 rose by 9.2 per cent to Rs. 230.25 in 1965-66. Even though the State Income during the period increased by 23 per cent the per capita income rose only by 9.2 per cent on account of the growth of population during the same period. In 1969-70 the State Income increased by 18.0 per cent and the per capita income increased by 8.4 per cent over that during 1965-66.

3.2. Per capita real National Product rose by 1.3 per cent from Rs. 306.3 in 1960-61 to Rs. 310.4 in 1965-66 and by 9.3 per cent over 1965-66 to Rs. 339.4 in 1969-70.

3.3. With a rise in the Net State Domestic Product in 1966-67 per capita real income increased to Rs. 247.12 representing an increase of 7.3 per cent over the previous year. In 1967-68 the trend was reversed and per capita income declined by 1.8 per cent. In 1968-69 there has been a rise over 1967-68, but the succeeding year noticed a gradual fall by about 0.3 per cent. Thus since 1965-66 an undulating trend is noticed in the per capita real income.

3.4. Over 1960-61 level, the aggregate real Net State Domestic Product and the per capita income in 1969-70 increased by 45.2 per cent and 18.3 per cent respectively. The annual compound growth rate of State Domestic Product in real terms during the period was 4.02 per cent as against 1.57 per cent in the rate of growth of per capita income. The real Net National Product and per capita National Income increased by 35.1 and 10.8 per cent respectively during the corresponding period and the annual compound rates of growth in Net National Domestic Product and per capita Income were 3.16 per cent and 0.95 per cent respectively.

4. Sectoral Contribution

The economy of Orissa during the period from 1960-61 to 1969-70 has undergone a structural transformation. The process is slow and can be evidenced from Appendix 'A'.

From the above table it can be seen that the contribution of the primary and secondary sectors to Net State Domestic Product (SDP) is declining slowly in real terms. But in absolute terms, primary sector still remains the largest single source of SDP. Contribution of tertiary sector to the Net State Domestic Product has been increasing gradually.

In 1960-61, the share of Agriculture and other allied activities to the Net State Domestic Product was 63.5 per cent in real terms, secondary sector accounted for 12.8 per cent and tertiary sector 23.7 per cent. In 1969-70, the share of the primary sector declined by 1.8 per cent, secondary sector maintained almost the same level but the tertiary sector rose by 1.6 per cent.

Despite the introduction of new technology, improved agricultural practices, the economy has not shown any significant change in the Agriculture sector and, more so, in the primary sector. This is, perhaps due to a change of behaviour of the economy—a shift from Agriculture to other secondary and tertiary sectors. The process seems to be very slow. A detailed study in this respect will be of much help for investment pattern.

APPENDIX I'A' (Contd.)

STATE DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN AT CURRENT PRICES
(RS. IN LAKHS)

Sl. No.	Sectors	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Agriculture and Animal Husbandry	21304	22216	28015	33509	36642	32861	44272	51009	53781	57665	—
2.	Forestry	880	1177	1496	1724	1555	1691	2015	1770	2196	2186	—
3.	Fishery	258	390	353	389	458	478	681	974	1084	1027	—
A.	SUB-TOTAL	22442	23783	29864	35622	38655	35030	46968	53753	57061	60878	—
4.	Mining & Quarrying	699	665	864	843	747	1117	1139	1212	1559	1556	—
5.	Large scale Manufacturing.	712	1183	1625	2326	3167	3793	3136	4910	4563	5016	—
6.	Small Scale Manufacturing	1940	2182	2299	2529	2702	2918	3139	3439	3672	3906	—
7.	Construction	1954	2633	3596	3855	4204	4461	4504	4584	4615	4567	—
8.	Electric gas and Water Supply.	49	168	424	373	567	404	336	559	558	562	—
B.	SUB-TOTAL	5354	6831	8808	9926	11387	12693	12254	14704	15367	15607	—
9.	(a) Railways	241	261	288	314	609	630	652	673	694	716	—

1	2	3	4	5	6	7	8	9	10	11	12	13
	(b) Communica-											
	tion	55	74	94	115	138	162	188	215	244	274	—
	(c) Transport by											
	other means	294	324	292	371	536	556	656	796	869	962	—
10.	Trade, Storage,											
	Hotels and											
	Restaurants	1809	2070	2522	2657	3320	3732	4338	5027	5320	5624	—
C.	SUB-TOTAL	2399	2731	3196	3457	4603	5080	5834	6711	7127	7576	—
11.	Banks and Insu-											
	rance	167	249	286	353	383	452	471	488	608	644	—
12.	Real Estate and											
	Ownership of											
	Dwellings	1208	1301	1398	1498	1609	1976	2165	2276	2453	2638	—
13.	Public Admini-											
	stration	1118	1189	1693	1874	1961	2297	2516	2816	3021	3193	—
14.	Other Services	3762	4172	4581	4723	5349	5779	6641	7566	7961	8608	—
D.	SUB-TOTAL	6255	6911	7958	8448	9302	10504	11793	13146	14043	15083	—
	Net State Domes-											
	tic Product	36450	40256	49826	57453	63947	63307	76849	88314	93598	99144	—
	Population in											
	Lakhs	172.8	177.2	181.6	186.0	190.4	194.8	199.2	203.6	208.0	212.4	—
	Per Capita in											
	Rupees	210.94	227.18	274.37	308.89	335.86	324.98	385.79	433.76	450.00	466.78	—

(Source : SSB, Orissa)

N. B. : * Provisional

APPENDIX I'B'

STATE INCOME OF ORISSA AT 1960-61 PRICES.
(Rs. IN LAKHS)

Years	Primary	Secondary	Tertiary	Total SDP	Per capita income in (Rs.)	Per centage increase over previous year	
						Total SDP	Percapita income.
1960-61	23141 (63.5)	4655 (12.8)	8654 (23.7)	36450 (100)	210.94	—	—
1961-62	23343 (61.4)	5646 (14.9)	8989 (23.7)	37978 (100)	214.32	4.2	1.6
1962-63	25269 (60.8)	6423 (15.5)	9840 (23.7)	41532 (100)	228.70	9.4	6.7
1963-64	29222 (62.8)	6820 (14.6)	10532 (22.6)	46574 (100)	250.40	12.1	9.5
1964-65	31438 (63.3)	7183 (14.4)	11082 (22.3)	49703 (100)	261.05	6.7	4.3
1965-66	26449 (59.0)	7175 (16.0)	11228 (25.0)	44852 (100)	230.25	(-)9.8	(-)11.8
1966-67	30420 (61.8)	6852 (13.9)	11955 (24.3)	49227 (100)	247.12	9.8	7.3
1967-68	30207 (61.1)	6834 (13.8)	12382 (25.1)	49423 (100)	242.75	0.4	(-) 1.8
1968-69	32367 (62.2)	6698 (12.9)	12999 (24.9)	52064 (100)	250.31	5.3	3.1
1969-70	32708 (61.7)	6898 (13.0)	13403 (25.3)	53009 (100)	249.57	1.8	(-) 0.3
1970-71	33533 (61.1)	6946 (12.7)	14350 (26.2)	54829 (100)	252.90	3.4	1.3

Figures in brackets indicate percentage.
(Source : State Statistical Bureau, Orissa)

APPENDIX—II

COMPARATIVE PICTURE OF THE SDP AND NDP AT 1960-61
PRICES.

Year	Percentage increase over 1960-61 Prices			
	Net State Domestic Product	Per capita Income of Orissa	Net National Product	Per capita Income of India
1961-62	4.1	1.6	3.5	1.2
1962-63	13.7	8.4	5.6	1.0
1963-64	27.7	18.7	11.7	4.4
1964-65	36.2	23.8	19.7	9.6
1965-66	23.0	9.2	13.0	1.3
1966-67	34.8	17.1	14.7	0.5
1967-68	35.3	15.1	25.3	7.5
1968-69*	42.7	18.7	28.3	7.7
1969-70*	45.2	18.3	35.1	10.8

Source : Bureau of Economics and Statistics

* Provisional.

APPENDIX—III
NET INCOME OF ORISSA AND INDIA IN PRIMARY, SECONDARY AND TERTIARY
SECTOR AT 1960-61 PRICES
(RS. IN CRORES)

Year	Orissa					India				
	Primary sector	Secondary and Tertiary	Percentage		Primary	Secondary and Tertiary	Percentage		Primary	Secondary and Tertiary
			Primary	Secondary and Tertiary			Primary	Secondary and Tertiary		
1	2	3	4	5	6	7	8	9		
1960-61	231	134	—	—	6965	6401	—	—		
1961-62	233	147	0.9	9.7	7204	6944	3.4	8.5		
1962-63	253	162	9.5	20.9	7375	7606	5.9	18.8		
1963-64	292	174	26.4	29.8	8561	8647	22.9	35.1		
1964-65	314	183	35.9	36.6	10418	9791	49.6	53.0		
1965-66	264	185	14.7	38.1	10179	10607	46.1	65.7		
1966-67	304	186	31.6	40.3	12263*	11873*	76.1	85.5		
1967-68	302	192	30.7	43.3	15430*	13203*	121.5	106.3		
1968-69*	324	197	40.3	47.0	14818*	14118*	112.7	120.6		
1969-70*	327	203	41.6	51.5	15953*	15479*	129.0	141.8		

Source : State Statistical Bureau and Central Statistical Organisation White Paper.

* Provisional figures.

MOBILISATION OF RESOURCES FOR INDUSTRIAL DEVELOPMENT OF ORISSA

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The need for industrial growth for an accelerated economic development, particularly in the developing countries needs no emphasis. In a vast country like India, where population explosion is an acute problem, it is extremely important that the tempo of industrialisation should be accelerated. Orissa, one of the economically backward states of the country, has been provided by nature with vast resources of minerals, forest, agricultural land, abundant water and power potentialities, yet it remains in the lower rungs of industrial development. A weak infrastructure in the fields of road and railway communication, power generation and distribution and lack of entrepreneurial interest were primarily responsible in the past for arresting the industrial development of the State. Continuous efforts during the Five Year Plans have been able to provide the required infrastructure essential to support a programme of large scale industrialisation. In spite of all the efforts, both the state income and the per capita income of the state ranks lowest among all the states in India and industrially Orissa is among the most backward states in the country. Orissa's economy thus reflects a paradox of poverty amidst potential richness. In view of this peculiar state of affairs of the state, it is necessary to discuss its industrial programmes, and the problems in mobilising the resources for financing them.

The economy of Orissa was stagnant due to inadequate supply of capital, lack of dynamism of business enterprise, low purchasing power

and restricted market for industrial goods, till the execution of the Five Year Plans in the state. The industrial scene was dominated mostly by non-factory, cottage type production. But after the introduction of the Five Year Plans, a steady but slow industrial growth has been effectively generated. The following table shows the quantum of investment in the state for industries and minerals and the investment on the development of infrastructure during the plan period.

INVESTMENT IN INDUSTRIES AND MINERALS, POWER PROJECTS AND
TRANSPORT AND COMMUNICATION DURING THE PLAN PERIODS
(RUPEES IN LAKHS)

Plan periods	Industries and minerals	Percentage to total	Power projects	Percentage to total	Transport and communication	Percentage to total
1951-56	83.95	4.56	481.55	26.15	271.24	14.73
1956-61	393.74	4.55	575.63	6.65	601.85	6.95
1961-66	2026.00	9.01	5171.00	23.01	3846.00	16.73
1966-69	1471.87	11.56	2928.31	23.02	1798.08	14.13
1969-74	4112.00	12.79	6850.01	21.30	2634.00	8.19
(proposed)						

Source : Three five year plans of Orissa and Draft Fourth Five Year Plan of Orissa.

The table clearly demonstrates that the investment outlay in all the three heads of development progressively increases from the First Five Year Plan to the Fourth Five Year Plan. But, the percentage of investment under Industries and minerals to the total plan expenditure is significantly low and the progress is gradual and slow. However, significant emphasis has been given to the investment on power projects and transport and communication throughout the plan period, thus creating a well developed infrastructure essential for a programme of large scale industrialisation. Besides the achievements of the various financial targets of different plans in the state, a considerable progress has also been noticed in achieving the physical targets of the state during the same period. The total number of small scale industries in 1961 was only 1584, whereas the same has been increased to 2820 by the end of

1968. The following table gives an idea of the industrial achievements of the state during the first three plan periods.

	1950	1955	1960	1965
(1) Number of factories (Registered under Factory Regulation Act.)	135	129	98	240
(2) Productive Capital employed (fixed capital Rs. in million)	44	65	349	2779
(3) Number of persons employed in industries (in thousands)	11	16	26	68
(4) Electricity consumed (Million Kwh.)	0.9	4.7	457.4	843.6
(5) Net value added (Rs. Million.)	16	41	85	387

Source : Industrial growth and planning by Sri R. Venketaraman.

During the three five year plan periods the state Government made efforts to develop industries by granting loans to different industrial houses through various financial institutions, providing training facilities to the people from different industrial houses to improve the entrepreneurial ability, introducing pilot project schemes with ninety per cent capital contributed by Government and setting up of Industrial Development Corporation for large scale investment in the basic and priority industrial sector. But all these efforts could not pay the required dividend and the industrial income of the state still remained insignificant. This can be observed from the following table.

Year	Industrial Income (Rs. in Crores)	Percent of total State Income
1951-52	18.04	5.7
1955-56	27.73	7.8
1960-61	37.29	8.9
1963-64	47.25	12.0

Source : State Income of Orissa, Bureau of Statistics and Economics, Orissa.

With this background at the end of the third five year plan, the State Government entrusted the National Council of Applied Economic Research to prepare a report on the industrial programmes of Orissa for the fourth plan. The Council in their report suggested an additional investment of Rs. 137 crores which would result in an additional income of Rs. 38 crores per annum from industries and provide employment opportunity for about 80,000 persons. The investment will be in the following groups :

	Rupees in Crores	
(i) Mining Industries and mineral developments	40.35
(ii) Metallurgical and metal-based industries	21.10
(iii) Mineral-based industries non-metallurgical	14.82
(iv) Agriculture live-stock and forest based industries	16.96
(v) Chemical and Allied Industries	39.89
(vi) Small scale industries	3.25

Source : Industrial programmes for the fourth plan, Orissa, by National Council of Applied Economic Research.

The programmes given in the report of NCAER include the utilisation of almost all the natural resources available in the State. But it will be a difficult task for the State authorities and private entrepreneurs to achieve the targets set out in the report, because of numerous bottlenecks. The most important among them is the availability of resources. The Council has worked out the possible investments during the Fourth Plan by different sectors for different industries in the following manner :

Industries	Rupees in Crores			
	Public Sector		Private	Total
	Central Govt.	State Govt.	Sector	
Mining Industries	22.00	15.00	3.25	40.25
Metallurgy and Metal based Industries	5.00	4.50	11.75	21.25
Chemical and Allied Industries	12.30	0.50	27.20	40.00
Agricultural, live-stock and Forest-based industries	—	0.80	16.20	17.00
Mineral based industries (Non-metallurgy)	13.40	—	1.45	14.90
Small Industries	—	—	3.25	3.25
Total	52.70	20.80	63.00	136.5

Source : Industrial programmes for the Fourth Plan, Orissa, by National Council of Applied Economic Research.

The programme envisages an investment of Rs. 73.5 crores by the Central and State Governments in different projects worked out by the Council. But during 1961 to 1966 and 1966 to 1969 the total investment by the Government for industries and minerals were only Rs. 20.26 crores and Rs. 14.71 crores respectively. The draft outline of the Fourth Plan for Orissa, published by the Department of Planning and Co-ordination, lays down an amount of Rs. 41.12 crores for industries and minerals. The low investments in the smaller size of the Fourth Plan outlay makes the proposed target of Rs. 73.5 crores investment an impracticable and ambitious one.

Further the programme of Rs. 63.00 crores to be invested by the private sector seems to be quite high. Because, the State Income and per capita income of the State were only Rs. 695 crores and Rs. 330 respectively by 1968-69. Of the total state income only 15 per cent is being obtained from industries, mining, commerce and transport. A study made by the National Sample Survey shows that by 1965, about 65 per cent of the total population of Orissa spend less than Rs. 20/- per month. This apparently shows the abject poverty of the large mass of the population of the State. In view of this low per capita income, the rate of

saving, and investment is also very low. At this low rate of saving and investment, it is difficult to meet the gap of Rs. 63.00 crores by the private sector, unless funds from other states flow into the State for industrial investment.

The assistance of various financial institutions in the industrial development of Orissa is also not encouraging. The State Financial Corporation, which was set up mainly to provide financial assistance to the medium and small scale industrial units of the State, has distributed a total loan of about Rs. 3.95 crores only, up to March 31, 1970. The part played by the Scheduled Commercial Banks for the industrial development of Orissa is also insignificant. Of the total advances of Rs. 3.117 crores by various commercial banks, for different purposes in Orissa, as on June 1970, only about fifty per cent of it have been advanced to the industrial sector of Orissa.

Considering all the possible sources of mobilising resources, it can be observed that, the required amount of Rs. 137 crores cannot be invested, unless the Central Government provides liberal grants for the development of the backward areas of the economy. Further, the various financial institutions and the scheduled commercial banks should earmark a large portion of their credit exclusively for backward regions to reduce the regional imbalances and concentration of industries in certain metropolitan cities. Lastly, the people of the State and the State Government should play an important role in providing the necessary incentives and facilities for industrialisation of the state and of other states to invest their capital in order to implement the industrial programmes of Orissa.

IMPACT OF FARM CREDIT ON FARM BUSINESS

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Introduction

Development in the field of agriculture can be achieved to a great extent if farm credit is available to an adequate amount and is used for the purpose for which it is supposed to be used. Better agricultural productivity calls for the technological change involving the use of fertilizers, pesticides, better varieties of seeds, better distribution and control of irrigation and better tools, etc. This can be made possible only when farmer is economically motivated to produce more. In order to assess the influence of farm credit on farm business as a whole, an attempt has been made to estimate various measures of farm profits, such as —farm business income, family labour income and net profits with respect to borrowers and non-borrowers. Attempt has also been made to find out the productivity of crop loan in different farm sizes.

Methodology

The data for this study pertained to the Jagatsinghpur area of Cuttack district and 1970-71 was the reference year. The sampling technique adopted in this study was two-stage random sampling. Four villages were selected where different types of institutional agencies are presently financing agriculture. Holdings of these villages were stratified

into two categories, namely, farm credit borrowers and non-borrowers. Each category was again stratified into three different size groups depending on the size of operational holdings ranging from (i) 0-1 hectare, (ii) 1-2 hectares and (iii) above 2 hectares. From each size group, 15 holdings were selected on random selection method. Thus, altogether, 90 holdings were selected for the purpose of this study.

In this study, cost *A* is derived by deducting family labour wages and interest on working capital from total cost. Likewise cost *B* is enumerated by adding interest on fixed capital to cost *A*. But when wages of the family labour is added to cost *B*, cost *C* is obtained.

Similarly, farm business income is the actual income that accrues to the farmer after deducting from the gross output, the out-of pocket expenditure *i. e.* cost *A* incurred on farm. This is actually the income in which more farmers are actually interested. Remuneration for family labour and management is derived by subtracting from gross output, the cost *B* incurred on farms. Net return is the net profit in the strict accounting sense and is an indication of the efficiency of farm business. It is what remains after all types of costs (cost *C*) have been deducted from gross value of the output.

Review of literature

Sharma and Prasad (1971) observed that adequate use of credit increased the income substantially even at prevailing stages of the technology. But a situation of adoption of improved technology with adequate credit facilities almost doubles the incomes of the farmers. Singh and Jha (1971) revealed that provision of additional credit under the advanced technology produced substantial increase in farm incomes as compared to current technology. Srivastava and others (1971) revealed that though the technology had influenced the farm returns, the bank borrowings also showed favourable effect on the total farm returns. Talwar (1970) claimed that direct financing of agriculture by the State Bank of India had increased production.

Input-output relationship

Our hypothesis is that the possibility of receiving higher returns is directly associated with new farm-input strategies. In other words, we assume that there is a direct relationship between input and output.

The relationship between costs and returns on per farm and per hectare basis, with respect to different categories of farms is given in Tables 1 and 2.

TABLE 1
GROSS OUTPUT AND COSTS ON PER FARM BASIS IN JAGATSINGHPUR
AREA OF CUTTACK DISTRICT DURING THE YEAR, 1970-71
(IN RUPEES)

Size group	Gross return	Cost-A	Cost-B	Cost-C
BORROWER				
I	2930	1025	1759	1850
II	3528	1102	2498	2677
III	6522	2146	4588	6074
AVERAGE	4327	1424	2948	3534
NON-BORROWER				
I	2132	539	1402	1114
II	2794	822	1902	2062
III	4520	1304	3176	3568
AVERAGE	3149	888	2040	2215

TABLE 2
GROSS-OUTPUT AND COSTS ON PER HECTARE BASIS IN JAGATSINGHPUR
AREA OF CUTTACK DISTRICT DURING THE YEAR, 1970-71.
(IN RUPEES)

Size group	Gross return	Cost-A	Cost-B	Cost-C	Value of 'r' (GR & Cost A)
BORROWER					
I	3058	1070	1836	1931	0.61*
II	1767	552	1251	1341	0.58*
III	1632	537	1148	1286	0.71**
AVERAGE	2152	720	1412	1520	
NON-BORROWER					
I	2224	564	1092	1167	0.49*
II	1397	411	951	1031	0.52*
III	1130	326	794	892	0.88**
AVERAGE	1584	434	945	1029	

* Significant at 5 per cent level.

** Significant at 1 per cent level.

It can be seen in Table 1 that both costs and returns per farm increased with the increase in farm size. It is also seen that all types of costs are higher in borrowing categories of farms as compared to non-borrowing farms. Similarly gross returns behave in the same manner. But while reduced to per hectare basis as indicated in Table 2, both costs and returns decreased with the increase in the size of the farms in both the situations, namely, borrowing and non-borrowing. Table 2 also revealed that the per hectare cost *A* varies from Rs. 537.00 to Rs. 1070.00 and higher cost is incurred in small size farms as compared to medium and large size farms. It shows that there is higher concentration of capital per unit area in smaller farms than that of bigger farms. From Table 2, it is also seen that gross return is higher in smaller size farms as compared to medium and large size farms and the highest being Rs. 3058.00 in size group I and lowest being Rs. 1632.00 in size group III. Similar trend was also observed in non-borrowing categories of farms. But while considering between borrowing and non-borrowing categories of farms, it was observed that both costs and returns higher in borrowing farms as compared to their counterparts, in non-borrowing farms. Since costs and returns go hand in hand, we can conclude that there is a direct and positive relationship between costs and returns. This result was in conformity with the general belief that the output increased with greater input. In order to study the relationship between direct costs and returns, simple correlation analysis was carried out and it was observed that the coefficients of correlation between cost *A* per hectare and gross return per hectare were statistically significant. It can be concluded that productive farm expenditure has direct influence on farm returns, irrespective of farm sizes and farm categories.

Relationship of farm capital with credit

It was desirable at this stage to study the relationship between amount of working capital used in farming and the extent of crop loan used by the farms in the area under study. This is shown in Table 3.

Table 3 reveals that the magnitude of crop loan increased with the increase in farm size. This may be due to the influence of several factors like credit absorbing capacity, repayment capacity, risk bearing ability of different sizes of farms and security oriented credit policies pursued by the credit agencies. However, the proportion of crop loan to short-term cash expenditure varied from 38 per cent to 48 per cent. The

relationship of short-term cash investment with crop loan used was examined and statistical test revealed that there is significant relationship between these two variables. Thus, it can be concluded that working capital expenditure is influenced by the amount of crop loan utilised.

TABLE 3

SHORT-TERM CASH INVESTMENT AND THE AMOUNT OF FARM
CREDIT AVAILED BY THE CREDIT RECEIPIENTS IN
JAGATSINGHPUR AREA OF CUTTACK DISTRICT
DURING THE YEAR 1970-71
(IN RUPEES)

Size group	Working capital expenditure	Crop loan used	Value of 'r'	Per cent of loan received from total expenditure
PER FARM				
I	650	293	0.68	45.08
II	779	377	0.71	48.40
III	1859	697	0.83	37.49
AVERAGE	1096	455	—	—
PER HECTARE				
I	679	306	0.61	—
II	389	189	0.73	—
III	465	174	0.79	—
AVERAGE	511	219	—	—

The detail break-up of working capital expenditure on per farm and per hectare basis is shown in Tables 4 and 5, respectively. In fact, working capital is the most important aspect of any farm business study as compared to fixed capital. Because, aspects like short-run farm business planning and management largely depend on the nature and magnitude of working capital.

TABLE 4

DISTRIBUTION OF AVERAGE WORKING CAPITAL UNDER DIFFERENT
ITEMS ON PER FARM BASIS FOR THE SAMPLED FARMS OF
JAGATSINGHPUR AREA OF CUTTACK DISTRICT
DURING THE YEAR 1970-71.

(IN RUPEES)

Size group	Human labour charges	Bullock labour charges	Seeds	Manures and Fertilizers	Pesticides	Irrigation charges	Total
BORROWER							
I	201 (19.63)	115 (11.21)	43 (4.21)	603 (58.88)	34 (3.27)	29 (2.80)	1025 (100.00)
II	284 (25.72)	204 (18.47)	100 (9.07)	416 (37.68)	44 (3.99)	56 (5.07)	1104 (100.00)
III	536 (24.93)	408 (18.99)	204 (9.50)	812 (37.80)	76 (3.55)	112 (5.21)	2148 (100.00)
AVERAGE	340 (23.43)	242 (16.22)	116 (7.59)	610 (44.78)	51 (3.60)	66 (4.38)	1425 (100.00)
NON-BORROWER							
I	115 (21.27)	87 (15.96)	43 (7.98)	243 (45.03)	19 (3.55)	34 (6.21)	541 (100.00)
II	210 (25.54)	130 (15.82)	80 (9.73)	340 (41.36)	20 (2.43)	42 (5.12)	822 (100.00)
III	372 (28.53)	160 (12.27)	160 (12.27)	484 (37.12)	40 (3.07)	88 (6.74)	1304 (100.00)
AVERAGE :	232 (25.08)	126 (14.68)	94 (9.99)	356 (37.90)	26 (3.03)	55 (6.02)	889 (100.00)

(Figures in parentheses indicate the percentage break-up of capital used in farm operations.)

TABLE 5

DISTRIBUTION OF AVERAGE WORKING CAPITAL UNDER DIFFERENT
ITEMS ON PER HECTARE BASIS FOR THE SAMPLED FARMS
OF JAGATSINGHPUR AREA OF CUTTACK DISTRICT
DURING THE YEAR 1970-71
(IN RUPEES)

Size group	Human labour charges	Bullock labour charges	Seeds	Manures and fertili-zers	Pestici-des	Irriga-tion charges	Total
BORROWER							
I	210 (19.63)	120 (11.21)	45 (4.21)	630 (58.88)	35 (3.27)	30 (2.80)	1070 (100.00)
II	142 (25.72)	102 (18.47)	50 (9.07)	208 (37.68)	22 (3.99)	28 (5.07)	552 (100.00)
III	134 (24.93)	102 (18.99)	51 (9.50)	203 (37.80)	19 (3.55)	28 (5.21)	537 (100.00)
AVERAGE	162 (23.43)	108 (16.22)	49 (7.59)	347 (44.78)	25 (3.60)	29 (4.38)	720 (100.00)
NON-BORROWER							
I	120 (21.27)	90 (15.96)	45 (7.98)	254 (45.03)	20 (3.55)	35 (6.21)	564 (100.00)
II	105 (25.54)	65 (15.82)	40 (9.73)	170 (41.36)	10 (2.43)	21 (5.12)	411 (100.00)
III	93 (28.53)	40 (12.27)	40 (12.27)	121 (37.12)	10 (3.07)	22 (6.74)	326 (100.00)
AVERAGE	106 (25.08)	65 (14.68)	42 (9.99)	182 (37.90)	13 (3.03)	26 (6.02)	434 (100.00)

(Figures in parentheses indicate the percentage break-up of capital used in farm operations)

't' values for difference in working capital investment

* Significant at
1 per cent level

Size group I	Borrower	Non-borrower	: 10.57 *
Size group II	Borrower	Non-borrower	: 7.61 *
Size group III	Borrower	Non-borrower	: 6.92 *

As can be seen from Table 4 that fertilizer constituted 45 per cent, followed by human labour charges 23 per cent and bullock labour charges 16 per cent in borrowing categories of farms. Similar trend was also marked in non-borrowing categories of farms. However, in both the situations, fertilizer takes the lion's share followed by human labour charges and bullock labour charges, respectively. While analysing the cash expenditure in absolute terms, it was observed that in case of borrowing farms expenditure on fertilizers constituted Rs. 610.00, while in case of non-borrowing farms this comes to Rs. 356.00. Similar phenomena were also observed in all the items of expenditure. However, in case of borrowing farms, all the items of expenditure was higher than that of non-borrowing farms. This is largely due to the fact that the borrowing farms adopted higher proportion of area under high yielding varieties programme during the rabi season, which lack with non-borrowing farms.

Table 5 reveals that on the whole the per hectare fertilizer cost accounts for 45 per cent in case of borrowing farms and 38 per cent in case of non-borrowing farms. But in absolute terms, the variation is still greater as compared to the relative terms. Since institutional agencies finance a greater part of the credit in the form of kind components, particularly in the form of fertilizers, the quantum of fertilizer in borrowing farms is obviously higher than non-borrowing farms. While borrowing farm utilises Rs. 347.00 on fertilizer, the non-borrowing farms invests Rs. 182.00 in this item. In other words, borrowing farm utilises double the amount of fertilizers than that of non-borrowing ones. From this, it appears that credit using farms apply more fertilizers than non-credit using farms. Next important item of cash expenditure is human labour charges which comprises 23 per cent in borrowing farms. But in absolute terms, the expenditure comes to Rs. 162.00 in borrowing farms and Rs. 106.00 in non-borrowing farms. But marginal differences were noticed in case of seeds pesticides, and irrigation charges. However, as indicated earlier between the farm sizes, smaller farms invest more money per hectare in their farming as compared to medium and large size farms.

Table 6 indicates different types of farm returns on sample farms both in case of borrowing and non-borrowing categories.

TABLE 6
DIFFERENT RETURNS ON PER HECTARE AND PER FARM BASIS IN
JAGATSINGHPUR AREA OF CUTTACK DISTRICT
DURING THE YEAR 1970-71
(IN RUPEES)

Size group	Per-Farm			Per-Hectare		
	FBI	RFLM	NR	FBI	RFLM	NR
BORROWER						
I	1908	1174	1082	1988	1222	1127
II	2430	1032	852	1215	516	426
III	4380	1930	1384	1095	484	346
AVERAGE	2906	1381	1106	1432	740	632
NON-BORROWER						
I	1660	1132	1057	1580	1076	1005
II	986	446	366	1972	892	732
III	804	336	238	3216	1344	942
AVERAGE	1150	639	555	2256	1104	893

't' values for difference in different returns.

* Significant at Size group I Borrower : Non-borrower 12.57*
 1 per cent level Size group II Borrower : Non-borrower 8.10*
 ** Significant at Size group III Borrower : Non-borrower 2.15**
 5 per cent level.

With a view to studying whether the difference in farm business income between borrowers and non-borrowers were significant or not, 't' statistics was used. The differences were found statistically significant. The overall farm business income, remuneration for family labour and management, and returns per hectare are highest in credit using farms than non-credit using farms. However, between sizes, returns per hectare decreases with the increase in farm size in both the cases. Again, it is seen that the per hectare farm business income is highest in size group I followed by size group II and III. A similar type of trend was noticed in non-borrowing farms while considering farm business income. Remuneration for family labour and management varies from Rs. 484.00 to Rs. 1222.00 and average being Rs. 740.00 in borrowing farms, while it

varies from Rs. 336.00 to Rs. 1132.00 and average being Rs. 639.00 in non-borrowing farms. Remuneration for family labour and management per hectare decreases with the increase in farm size in both the situations. While analysing the net returns per hectare, the similar trend was observed. This may be due to the fact that the small farms are in a position to concentrate their farm operation most effectively through better planning and entrepreneurship as compared to big farms. Further an attempt has been made to estimate the productivity of crop loan in different farm sizes and this is shown in Table 7.

TABLE 7

RATIOS OF DIFFERENT RETURNS TO CROP LOAN IN JAGATSINGHPUR
AREA OF CUTTACK DISTRICT DURING THE YEAR, 1970-71
(IN RUPEES)

Ratio	Size group I	Size group II	Size group III	Average
	PER-HECTARE			
RFLM/CL	3.99	2.73	2.78	3.37
NR/CL	3.68	2.25	1.99	2.88

RFLM—Remuneration for family labour and management.

NR—Net return.

CL—Crop loan.

Table 7 reveals that the ratios of different types of returns to amount of crop loan borrowed and the ratios of family labour and management to net returns. All the ratios are positive and more than unit. Remuneration for family labour and management and returns per unit of crop loan are much higher in size group I than to size group II and III. The productivity of crop loan which is related by ratios in table 7 is higher in smaller size farms than the larger ones. Since small farms have been able to effectively utilise relatively greater proportion of crop loan per hectare in the area under study, the productivity of crop loan has become obviously higher in such farm size as compared to other farms.

THE PROBLEMS OF FIXATION OF PRICES OF FOOD GRAINS IN INDIA

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The role of the price mechanism in the economic system of a country is generally realized by every student of economics. In a competitive market the demand and supply of a commodity determine its price. The price of a commodity brings about an adjustment between its supply and demand. It is the function of prices to bring about such adjustment by influencing production and consumption of the commodity. In imperfect markets where private monopolists or government interfere with the price mechanism and desire to fix and maintain a particular price, they can only do so by influencing the forces of supply and demand. As is well known, in such cases as it is not possible to control the demand, the desired prices can be maintained by the regulation of the supply only. If the government fixes the price of any commodity and is unable to adjust the supply to the demand at the fixed price, a black market is bound to develop in the absence of complete rationing of the commodity. It is a fact that the authority which fixes the price of a commodity like food grains cannot maintain it unless it is prepared to purchase any amount of the commodity at the fixed price when there is a tendency for the price to fall and to sell any amount at the fixed price when there is a tendency for the price to rise. In the former case the authority must be prepared to accumulate huge amounts of the commodity and bear the cost of accumulation. If the prices continuously fall for years as they did during the thirties of this century, the situation may be intolerable and such operations may not be within the capacity of many governments. In the latter case, the government should have a very large buffer stock from which the commodity can be released to the market in order to maintain the fixed price level.

In our country since the Second World War, except for a brief period in the fifties, the prices of food grains have been continuously

rising mainly due to short supply and pressure of demand arising out of growth of population and rising money incomes. Other factors like speculation and hoarding have aggravated the situation and led to the upward pressure on the prices of the food grains. The rising prices of food grains have been mainly responsible for the rising prices of all other commodities. The Government has been unable to stabilize the prices of foodgrains in spite of its best efforts mainly because it has not been able to build up a buffer stock of the required size.

In a large country like India, regional fluctuations in weather always occur and cause pockets of short supply. In such regions prices of food grains shoot up high. The communication systems in many regions being poor, the transport of stock to short supply pockets to bring down prices becomes difficult. But in spite of these difficulties it would not be difficult to maintain a stable price of food grains if an adequate buffer stock is maintained in the country. Various estimates of the required buffer stocks are being made. But in most cases it does not exceed ten per cent of the present production of foodgrains in the country.

The buffer stock can be built up by domestic increased production and procurement and secondly by import of foodgrains from foreign countries. From 1951 to 1967 the country has imported food grains on the average about three million tons a year causing serious strains in the foreign exchange position. Yet it was not possible to build up a buffer stock of the size of about 5 per cent of the domestic production as the imported grains were always absorbed in the domestic short supply. Only during the last two years, self-reliance with regard to food supply was visualized. But again in the present year an import of about three million tons has been necessary to meet the need of present consumption. In general, it has to be realized that the building up of a buffer stock by imports of food grains out of loans or earned foreign exchange has not been possible and does not appear feasible in the near future. Reliance has therefore to be placed on increasing domestic production and procurement to build up the required buffer stock.

Efforts have been continuously made to increase production of grains and the production has increased from about 54 million tons at the beginning of the First Five Year Plan to about 100 million tons at present. It is not the purpose of this paper to discuss the various physical, economic, and institutional measures necessary to increase the

level of production. The objective is to analyse the response of production of food grains to changes in price so that a desirable procurement price can be indicated. In building up of a buffer stock by domestic procurement, the interests of both the producers and the consumers have to be considered. If the response of supply to price is such that a low procurement price will reduce production and supply, it becomes undesirable to fix the procurement prices at a low level. On the other hand if the procurement prices are high, they will require the consumers' prices to be fixed at a higher level, because the Government cannot afford to purchase at a higher price and sell at a lower price for long. High consumers' prices of foodgrains are not desirable as they raise the prices of other commodities and induce inflation in the country. The problem of price fixation therefore boils down to the balancing of the interests of the producers, consumers and of the society in general. In practice the procurement prices of food grains have been fixed at a very high level, which has been more favourable to the producers than to the consumers. The philosophy behind the policy is that sufficient incentive should be given to the producers to increase total production in the country. Secondly, the market prices being high, adequate quantities of food grains cannot be procured unless the procurement prices are fixed at high levels. Other reasons have also led to the enhancement of the procurement prices. The farmers' lobby constituted by solvent farmers particularly in the wheat region is quite strong. There is also the pressure of provincial politics. Surplus food grain producing States want to maintain their terms of trade at a higher level and their politicians press for higher procurement prices of food grains. As a result procurement prices have continuously risen.

But for preventing continuous rise of general prices in the country, it is essential that prices of food grains should be stabilized at a reasonable level. The question then is to find out whether prevention of further rise in food grain prices would affect the total production. In 1955, a study was made by the present author on the effects of prices on production of rice in India, Burma, Indo-China (then) and Japan, between 1910 and 1940 when the prices were not controlled. It was noted that the producer generally feels the effects of rising and falling prices of his products through his incomes. If he feels that his product brings him higher returns, he may have the incentive to increase inputs. If he feels that one crop brings more returns than its alternative, he may feel the incentive to adjust the inputs in favour of the more advantageous

crop. In the rice region there were few alternatives to the rice crop. Therefore the short period response of the growers to changes in the purchasing powers of net returns per acre of rice was tested by changes in the acreages of the crop in the following year. It was noticed that in most of the countries the acreages under rice from year to year were very little affected by changes in the purchasing powers of net returns. The reason is that the amounts of land per farm was very small and the rice crop has practically no alternative in the season and the farmers had to grow rice mainly for the family food. Thus under low or high prices the acreages under rice changed very little. Under traditional methods of cultivation there was also very little scope to increase other inputs except labour. On the other hand, it was noticed that the response of producers to price changes in respect of commercial crops like jute and sugar-cane was much greater than that for rice because such crops were generally produced for the market and the total area under the crops was much smaller. Under traditional type of cultivation, the nature of cultivation, the nature of response of producers to changes in prices in cases of other food grains like wheat, jowar and bazra would not be much different from that in case of rice. With the introduction of high yielding varieties of rice particularly in the rabi season and the use of inputs like chemical fertilizers, pesticides, some modification in the nature of response may be expected. But with the prevailing high prices and demand wherever physical facilities and credit are available the producers will make efforts to produce the maximum quantities of food grains they can. Enhancement of prices in the absence of physical possibilities of production is not expected to increase production. Recent studies made by some scholars on the relationship between price and productivity of cereals also indicate very little correlation between price and production.^a In general food grain production in India is price inelastic and continuous enhancement of procurement prices is not expected to expand production of food grains. For expansion of production, stabilization of prices and expansion of physical facilities such as the supply of water, seeds, fertilizers and pesticides are more necessary than enhancement of prices.

(a) (i) John, P. V — Some Aspects of the Structure of Indian Agricultural Economy, 1947-43 to 1961-62, Asia Publishing House p. 246.

(ii) Gurubach Singh & Others—Green Revolution and wheat prices in the Punjab, Economic Affairs, Vol 17, No. 7 July, 1972 p. 326.

Another problem which deserves consideration is that in the context of continuous upward rise of prices of food grains in the market if the procurement prices are fixed at a level lower than the market price, the procurement of stock will be impossible. But if the procurement prices follow the market price, it will never be possible to stop the spiral of rising prices. Under the circumstances there is no escape from the system of fixing the procurement price at a level lower than the market price and procuring the stock through levy system and releasing the stock in the open market to bring down the market prices to the level of the procurement prices. Without elaborate arrangement for imposing levy on farmers producing marketable surplus, building up of a sizable buffer stock and stabilization of food grain prices at a reasonable level through it will be virtually impossible.

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