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NATIONAL COMMISSION ON LABOUR

CONCEPT, TRENDS AND SHARING OF GAINS IN PRODUCTIVITY

I - Concept

The concept of productivity does not lend itself either to a clear-cut definition nor do the factor shares of it to easy computation. In a broad sense the term productivity is generally used to denote the ratio of output to any or all associated inputs. In traditional economic literature it is customary to view these inputs in four groups: land, labour, capital and enterprise or organisation. The ratio of output of the commodity to the input of the factor is the measure of productivity in relation to that of each factor of production. The choice of the factor depends upon the purpose of inquiry. The definition and mode and method of measurement would also naturally differ.

2. In a practical sense productivity implies, both at the unit and higher levels a balance between the various factors of production as will give the maximum output for the minimum input of the concerned factor. Only by relating final output to all the tangible inputs will it be possible to determine whether there has been a net saving in real cost per unit of output or conversly an increase in the output/input ratio.

3. In the context of the Commission's work the relevant input which requires to be compared with output is labour input. Generally it would mean the physical volume of output attained per worker. It is thus defined as the ratio of output to the corresponding input of labour. Productivity could thus be expressed either in terms of output per man hour or per man-year. While the former is significant as an indicator

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in an industrial undertaking the latter throws light on the wider economic picture. In either case it would be clear that though one can talk of labour productivity, the index of it does not measure labour efficiency alone. What is measured is the combined effect of the diverse influences at work in the productive process but expressed in terms of an important input. The International Labour Office Report divides such forces into three categories namely, (i) general factors, (ii) organizational and technical factors, and (iii) human factors. The first group constitutes factors such as climate, the fiscal system, credit, research, etc. It would also include the changing composition of production and plants in industrial establishments with the varying levels of efficiency. The group on organisational and technical factors would include the degree of plant utilisation and excess capacity, the size of plant and scale of output, the proportion of mechanical equipment per worker, specialisation and standardisation of output and the length of working day etc. The third group refers to the effect of wage incentives and trade union techniques of regulating the pace of work. The effort of labour is not directly measurable unless all these factors are kept constant and this is not possible. What is measured, therefore, is the combined result of all these forces.

II - Productivity movement in India: origin, difficulties and trends.

4. The productivity movement in India is not of distant origin. It made a beginning with the arrival of the first I.L.O. Productivity Mission in 1952 though a few management consultants had been in business since the thirties. It was in that year that the International Labour Office undertook to assist the Government of India by making available the services of a team of experts to show "how productivity of

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workers in Indian Textile and Engineering Industries can be raised by application, in selected plants of modern techniques of work study and plant organisation and, in addition, where appropriate by the introduction of suitable systems of Payment by Results." During its term of assignment of about eighteen months, the I.L.O. Mission, could not, for various reasons, adhere to the objectives in view. Under the conditions then existing it was not found possible, particularly in the textile industry to improve the system of payment by results as had been originally planned. The legally established pattern of wages fixed by industrial tribunals left marginal scope for introducing new ideas. The Mission's efforts were, therefore, mainly directed to "demonstrating to trade union leaders and management alike that given adequate supervision, members of the existing staff in Indian plants can secure important improvements even after a short and incomplete training in productivity improvement techniques". The experience of the first Mission showed that the objectives of the Productivity Programme had to be formulated on a realistic assessment of the conditions prevailing at that time. Subsequent years proved that the success of the productivity programmes lay in the understanding of the actual situation more than the preconceived aims and objectives.

5. The most valuable contribution of the I.L.O. Mission has been that it made Government and the industry productivity conscious. Government of India established the Productivity Centre under the auspices of the Ministry of Labour. The centre started functioning in 1955 and now forms a wing of the Central Labour Institute. It initiated a series of educational programmes directed at different levels of management and workers.

6. The National Productivity Council was set up as an

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autonomous organisation in 1958 to stimulate productivity consciousness in the country and to provide services with a view to maximising the utilisation of available resources of men, machines, materials and power, to help secure for the people of the country through higher productivity a better and higher standard of living. Representatives of Government, employers, workers and various other interests participate in its working. The Council conducts its activities in collaboration with institutions and organisations interested in the productivity drive. It has established Local Productivity Councils which are expected to work as the spear-head of the productivity movement. It collects and disseminates information about techniques of productivity. It has also organised an Advisory Service for industries to facilitate the introduction of productivity techniques.

7. Apart from the work of these operative agencies, the productivity movement received considerable support from the official policy documents. From a recommendation of merely inviting experts under Technical Assistance Programmes in the First Plan, and reference to the more specific topics like better lay-out of plants, improvements in working conditions and training of workers etc. in the Second we moved to what is said in the draft outline of the Fourth Five Year Plan. The last document emphasised that " a concerted drive should be launched for achieving higher levels of productivity in all branches of industry. Representative organisations of employers and workers should evolve a broad common approach for guidance of individual production units". The idea has been all along to secure in this endeavour the best experience available anywhere.

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8. In all discussions on the effect of any productivity drive in India and the analysis of its achievements a basic point arises: whether, in the context of unemployment prevailing in the country, efforts at improvement of productivity have any meaning? Modern techniques in industry after the end of the 1939-45 war were essentially the product of the application of technological research developed during the war years to peace time uses. Labour saving which resulted thereby suited the labour shortage economies initially and thereafter supported their ever increasing standard of living. In India because of the fears of aggravating the problem of unemployment labour saving techniques are normally shunned both by organised labour and Government, though the application of such techniques will result in increased productivity. With all the emphasis on productivity indicated in the Plans, the general environment in which any productivity drive had to be organised was one where for encouraging employment some areas of productive effort had to be subsidised. Latterally shortage of foreign exchange to import new machinery or equipment has also inhibited the productivity movement.

9. Trade union response to productivity has been largely conditioned by these apprehensions though there is, in the leadership, adequate awareness on the need to be competitive in the industrial world, Tripartite discussions have been by and large on this basis. There is understandably a concern about those in employment; a concern about the possible effect on their employment, employment potential of the future, a concern about the reports that giant machines would ultimately reduce employment to an insignificant size. Trade unions recognise that national difficulties will come in the way of employers having their final say in the manning pattern of

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a unit with an eye only on productivity. In all this, however, difficulties arise not with the initial manning of the enterprises, however cautious it may be, but with the change in the output/labour ratio once it is established. In tripartite meeting on automation held recently, this view was underlined by labour representatives, though concessions were made in cases where compulsions of a situation required the use of a highly productive automated machine.

10. Small size of the agricultural holdings and the poverty of the Indian farmer have been the important limiting factors in the way of adequate increases in the farm productivity. Lack of availability of fertilizers and irrigation facilities have also been responsible for lower productivity in agriculture. Even in cases where per acre yield has increased substantially per capita income from the land has been static because of the pressure exercised by the growing working force on limited land resources.

11. Inspite of the difficulties faced in the advancement of productivity the force of events have shown that productivity has increased in different sectors of the economy. The value added by manufactures per man hour in the industrial sector taken as a whole increased from Rs. 1.46 in 1960 to Rs. 1.90 in 1964. Gross output per worker increased from Rs.4347 in 1946 to Rs.8848 in 1955, Rs. 12208 in 1960 and Rs. 17295 in 1964. Even allowing for price increases there is a significant gain. These increases in productivity also resulted in substantial increases in wages of the workers. Average annual money earnings of industrial workers increased from Rs.610 in 1946 to Rs.1854 in 1964. In terms of percentage, gross output per worker increased by 297.8 per cent as

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compared to 1946 while the average annual money earnings per worker increased by 203.9 per cent during the same period. However if a comparison is made between increase in real wages and increase in productivity wage increases have not matched with increases in productivity during the post independence period.

12. Increases in average annual money earnings and gross output per worker together with the value added by manufacture per man hour in respect of some of the selected industries viz. jute textile, sugar, paper and paper board, cement, cotton textile, iron and steel, heavy chemicals and fertilizers are shown in the annexure. Data in respect of industries which were covered by the Census of Manufacturing Industries have been given from the year 1946 onwards. In respect of the rest the data are from the year 1960 onwards.

13. Because of the lack of statistics it is not possible to indicate increases in productivity of agricultural workers. However an overall view of increases in agricultural productivity can perhaps be had from the increases in the yield per acre. Taking 1950-51 = 100 yield per acre increased to 107.3 in 1955-56, 117.5 in 1960-61 and 121.7 in 1963-64. There was a fall in the yield per acre in 1964-65 and 1965-66 because of the wide spread failure of monsoons.

14. Thus some increases in productivity have taken place; but in relative to what has been achieved elsewhere in the last twenty years, we stand very low in over all terms though certain small pockets of activity have indeed shown rapid strides almost as rapid as those in advanced countries.

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III - Sharing of Productivity & Gains.

15. Representatives of labour and employers at the national level have been coming to grips with the problem of productivity improvement, the important facet of which is the sharing of productivity gains. This also is discussed on the basis of a difficult assumption that gains can be measured and contributions made by different factors to these gains can be isolated. Though in individual units some workable arrangements have emerged no national, industrial or regional formula has commended itself for acceptance.

16. The different formulae suggested by various expert bodies for sharing gains of productivity are discussed in the following paragraphs.

17. These formulae have been developed on the assumption that productivity increases are not possible unless each factor is motivated to contribute its best not only to the industrial unit to which it belongs but also to the economic well-being of the society at large. In the process attempts have been made to find a scientific way of distributing gains of productivity in a fair and equitable manner. One school of thought is of the opinion that sharing of gains should be left to mutual negotiations between the workers and the management. The greatest fear in this suggestion is that the larger interests of the community are likely to be ignored because both workers and the management will like to have the maximum portion of the cake for themselves and the community will be forgotten in the negotiations. A well-accepted principle is that the fruits of productivity increases should be distributed among three parties. Labour should get its share in the form of increased wages, community by way of reduction in prices and or improvement in quality of products and the management by way of increase in returns. Due consideration has also to be given to the needs of development. The difficulty, however, arises in apportioning a share to each of these parties.

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18. There is no single widely acceptable formula of method of sharing the gains of productivity in a fair and equitable manner. Each situation will call for a selection of the formula or method best suited for the purpose. The N.P.C. Committee on "Sharing of the Gains of Productivity" has observed that any method or formula should have the following characteristics:

(i) It must not compromise the prospects of continued economic growth;

(ii) it must not merely be a plan of co-sharing between management and labour, but also among consumers and society at large in the form of government;

(iii) it should as far as possible, be impersonal in its operation; and

(iv) it should be publicized preferably in a printed form prior to its implementation in a manner which should be simple but at the same time anticipatory of the difficulties likely to arise.

19. Incomes policy of the Government will also affect sharing of the gains. Greater share may be given to workers in the industries where wages are substantially below a "living wage". After taking all the factors into consideration the Committee recommended the following formula:-

	Percentage share of gains of productivity
(1) Productivity bonus to labour.	30 to 40
(2) Capital reinvestment for development.	20 to 30
(3) Dividends on capital	20
(4) Reduction in prices to consumers.	20

19.A. The Committee, however, observed that ultimately it is the bargaining strength of the respective parties

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which will decide the exact share of different factors in different industries or even in plants. Two members of the Committee explained in their note of dissent that in units where for some reason or other the wage level is below the need based minimum, a greater proportion of the gains due to productivity should accrue to labour till such time as the need-based minimum is reached. Thereafter, in determining the share of labour more attention should be paid to the needs of developing the concerned industrial units/industry. In this note the formula suggested in that where the wages are below the need-based minimum wage, the workers'share should be between 65 to 75 per cent. Where the wages are at a level between the need based minimum and fair wage, the workers' share should be from 55 to 65 percent. Where the wages are between the fair wage and the living wage the workers' share should be between 45 to 55 per cent. And, where the wages are above the living wage, the workers'share should be between 40 to 45 per cent. The residue in each case has to be shared equally between the industry and the community subject to the condition that in no situation should the share of the community exceed 20 per cent.

20. On the basis of this report the National Productivity Council suggested the following formula for sharing:

"After making a provision in the interest of the consumers which should not exceed 20% wherever this is necessary, out of the balance of the gains of productivity, Labour will receive half in those industries where their wages clearly corresponds to a fair or living wage except that (a) where the wages are at a level below either the fair wage or the need-based minimum wage, the share of Labour will be larger to be decided by mutual agreement, and, (b) where the industry has clearly built up a large free reserve, the share of Labour will also be higher than the 50% mentioned above. Of the share thus

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available for distribution after a provision for consumers and labour has been made, a portion will be reserved for the development of the industry and the rest will be available for remunerating capital.

Note: Where no provision is actually made for Consumer, the amount will be available for distribution to Labour and Capital"

21. In recommending a frame work for income and prices policy, the Steering Group of the Reserve Bank of India observed:

" (i) In measuring productivity it is necessary to take into account both the long-term and short-period trends. A five years' moving average of the rate of change of productivity in the economy would be a good general guide for regulating changes in money wages.

(ii) The trends in productivity are to be considered as outer limits for wage and income adjustments, so as to prevent increases in wages and incomes from generating inflationary pressures. In actual implementation, however the productivity criterion should be so operated that the entire gains in productivity are not absorbed by immediate increases in consumption. A suitable modification of the productivity criterion would be to allow an increase in wage rates at some combination of the trend rate of growth of productivity and consumption in the economy, both based on five years' moving averages, so as to provide the necessary margin for growth of savings and capital formation in the economy.

(iii) Productivity would be rising at varying rates in different sectors. Employees in those sectors where productivity rises faster than the national average may have a claim to get increases in wages somewhat higher than the national average increase in productivity, especially where this is warranted by the contribution of labour to productivity. Correspondingly, wages in the other sectors where productivity rises less than the national average would have to rise at rates somewhat

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lower than the national average. The best general rule, however, is to regulate increase in wages and money incomes in different sectors and industries at a rate which takes account largely of the growth of productivity in the economy as a whole, but to some extent also of productivity in the sector or industry concerned.

(iv) Productivity-linked wage schemes should in general be such as will enable a part of the benefit of rise in productivity to accrue to the community in the form of lower prices of the products concerned."

22. The question of sharing the gains of productivity in an equitable manner was also discussed at a recent Seminar on Labour Policy under the joint auspices of the Commission and Sri Ram Institute of Industrial Relations. The following general principles were agreed to in the Seminar:-

(i) Irrespective of the extent - of relative contribution of the different parties towards productivity, the net gains inproductivity should be shared.

(ii) Gains should be shared irrespective of the quantum of additional productivity achieved.

(iii) Increase in productivity should result in material gains and the gains should be measurable.

(iv) The question of sharing arises only when the gains have materialised and no share can be larger than the gain. The share must necessarily come from the gains.

(v) Out of the total gains, the share of the community cannot be ignored.

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IV- International Experience

23. Improved productivity is now considered the corner stone of the economy of the future. This realisation came to the industrialised countries because of the need to rehabilitate war shaken economies, necessity of balancing imports and exports, the development of full employment policies, and the pursuits of highest levels of production.

24. Whereas in Germany, Britain, France, Italy and U.S.S.R. and other European countries and also in Japan the urge to increase productivity stemmed primarily from the need to restore and stabilise war-shattered economies, in America which was not subjected to the ravages of war, the dominant motivation seemed to be the desire of the people to utilise war time technological advance for continuously raising their standard of living. Though motivation has been different the techniques used have been the same but adapted to suit the conditions in each country.

25. Increases in productivity in America have been attained by increased use of automatic machines. Though the early introduction of automation even in America was looked upon with some amount of apprehension by workers this fear was later allayed as experience was gained. Even now the controversy about pace of productivity increase and its effect on future employment continues, though the American worker by and large today finds increased employment opportunities rather than redundancy as the outcome of higher

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productivity through automation. Orignally the trade unions in Europe were opposed to higher stages of mechanisation and modernisation as has been the attitude in India today. The early history of mechanisation in Britain is associated with the Luddite riots, breaking new machinery etc. But today these attitudes have changed. British workers are not wholly enthusiastic about the productivity drive but the Trade Union Congress(T.U.C.) realises the need for increasing productivity. It has been conducting courses giving an appreciation of modern management and by other means puts across the idea of productivity to the men at work. The T.U.C. cooperates with the management in their efforts to increase productivity, in national interest, though indeed in doing so it does not side track workers claims.

26. One of the biggest factors contributing to higher productivity in the Western countries is the attitude of trade unions and the workers. They are convinced that their prosperity is wholly dependent on high productivity. Post war experience has shown that advanced techniques, modern machinery and better lay-out can reduce work loads, provide greater leisure and more employment by expansion of industries. Because of the increased productivity in all these countries real wages have gone up far above the pre-war levels, living standards have improved and employment has increased mainly as a result of diversification and improvement in the standards of living.

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27. Substantial increases in productivity in Japan have resulted in faster recovery of the country's economy from the ravages of war. The Japan Productivity Centre (J.P.C.) has been making concerted efforts for increasing productivity. The productivity movement as enunciated by the centre is broad based and is not restricted only to the management and the labour directly engaged in industry. The enunciation of these principles by J.P.C. paved the way for labour's participation in the movement. Government has also been taking initiative in propagating the productivity drive.

28. Considerable emphasis have been laid on increasing productivity in U.S.S.R. Incentive schemes have been introduced in industrial enterprises for achieving targets of increased production. Increases in wage funds are allowed in these enterprises on their achieving the production targets. Supplementary increases in the wage fund are also given if the targets of production are exceeded. Recently the emphasis has been shifted to quality of production and stress is being laid on profitability of the enterprises; The returns to workers are in terms of better rations of consumer goods. It may be pointed out that profits in U.S.S.R. do not reflect arbitrary gains or losses. The profits increase only with increases in productivity of labour and other factors of production. As an incentive for increasing productivity

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a precise amount of profits is allocated to the material incentives fund for managers, salaried employees and wage earners. These schemes have shown the results and substantial improvements are noticeable in the standards of living of the working class in U.S.S.R.

29. A basic element in promoting productivity, apart from the compulsions in the situation in every country, which has taken rapid strides in industrial progress has been the mutual confidence which employers and trade unions have in each other. This confidence has been the result of patient work over a period of years. The science of work measurement and measurement of workers' effort has advanced sufficiently for an acceptable study of work load. Once the science of it is agreed to the question which remains is 'sharing of gains'. This is a matter of hard bargaining with a view to reaching a final determination of differences. Interposing of a third party is not unknown in some countries but that is in the realm of industrial relations.

V. Evidence before the Commission

30. According to evidence given by the INTUC higher productivity should be encouraged by giving better wages. Wages above the minimum should be linked with productivity safe-guards of a minimum fall-back wage. Further in linking wages to productivity worker should not be made to suffer if the employers fail to provide good material and machinery.

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Compensation for the default or short coming on the part of the employers should be on the basis not of a fall-back wage but what the worker would have earned. It was pointed out by the Hind Mazdoor Sabha that productivity of the worker is low because he is not paid the need based minimum. The work content fixed is high. When wages are fixed on an industry basis, capacity to pay of an individual unit is a secondary consideration. The productive capacity of our workers is no worse than workers in any country in the world.

31. According to the Council of Indian Employers the present wage cannot be straight away linked to present productivity. In certain cases it might be possible to do so; but in others collective bargainning will decide that question. There are many units which are working below capacity. If we start today by taking the correct productivity of a company which is not making profits and which is working below capacity it would be dangerous to link the present wages with the present productivity. Therefore, no general principle in this matter should be laid down. The All India Organisation of Manufacturers stated that if productivity increases, the capacity to pay also increase and industry will be able to pay the need based minimum wage.

32. According to the Nation Productivity Council growth of productivity has been more than the growth in per capita wages of workers over the period 1951-63 as a whole."Taking 1951 as the

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base productivity increases in 1952 and 1953 were marginally higher than the increase in per- capita wages. The trend was reversed during 1954 and 1955 when the index of per capita wages (Deflated) amounted to 118 and 124 respectively while the productivity index* for the same period was 116 and 119 respectively. This was possibly due to the substantial increase in agricultural production during this period which resulted in fall in prices and an increase in the real wages of workers. The trend was reversed in 1956 and productivity increases since then have been more than the corresponding increase in wages. The index of productivity in 1961 is placed at 144 while that of per capita wages amounted to 133. Index of productivity for 1963 is placed at 152 as compared to the per capita wage index of 138." This analysis shows that at the time when real wages have gone up productivity inreases are somewhat slower but when real wage declines productivity index moves further. Applying this analogy to years after 1963 one can presume that productivity has gone up further.

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* It is understood from the NPC that the index number of productivity relates to ten industries viz., Cotton Textiles; Iron and Steel, Engineering, Sugar, Chemicals, Jute Textiles, Aluminimum, Copper & Brass, and Vegetable Oils excluding hydrogenated oils.

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33. State Governments have observed that sharing of gains may be left to mutual negotiations but provision should be made for developmental needs of the industry. Public sector undertakings are of the views that as far as possible gains should be shared on the basis of piece work systems without taking dearness allowance into account. Employers have felt that gains of productivity should be shared through the process of collective bargaining having regard to the following factors:-

(i) Productivity bonus to Labour.

(ii) Capital re-investment for development of industry.

(iii) Dividends to share holders.

(iv) Reduction in prices to consumers.

34. Organisations of workers recognise that relative contribution of different factors is difficult to measure. Some of the organisations are in favour of the gains being distributed equally among labour, industry and the community. In cases where the wages of workers are below the level of a 'living wage' the object of the distribution scheme should be to raise the standard of living of the workers.

35. There is also a consensus that wages above the basic minimum should be linked with productivity. On the question of measurement of productivity and its allocation among different factors of production there is no adequate guidance in the evidence.

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36. The Study Group for Ports and Docks has recommended that surveys of socio-economic conditions of the workers, including their nutritional, housing, medical care, and other related aspects, should be undertaken in all ports; such surveys should be repeated as often as may be necessary. It will then be possible to develop policies and practices for creating the atmosphere for higher motivation and thereby increase the employee's job performance and productivity.

37. The Study Group for Plantations (Coffee/Rubber) has suggested that Work Study and Method Study are useful in fixing the norms for increasing labour productivity through better use of existing resources and by improved methods of operation. The National Productivity Council can play an important part in studying problems in plantations also as in the case of manufacturing industries.

38. According to the Study Group for Coal a production bonus scheme may provide the colliery workers with incentives and initiative for stepping up output.

39. The Study Group on Productivity and Incentives has stated that productivity is influenced by many factors some of which are internal to a unit while others are external. The approach to productivity to be comprehensive and all embracing requires improvement in social and economic circumstances of workers. Substantial shares of gains from increasing productivity should, therefore, be provided to labour. Increase in productivity also requires a modern technological base and improved organisation of work.

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VI - SUGGESTIONS

40. From the foregoing sections it would appear that there is general agreement on factors influencing productivity, the need for improvement and the desire to share gains. There are apprehensions that without a broader base of development, improvement in productivity may aggravate existing unemployment.

41. The suggestions broadly fall in two groups: (a) for the manner of introduction of productivity schemes and (b) regarding the share of consequent gains. With regard to the former the recommendations of the 15th Session of the Indian Labour Conference on Rationalisation still commend themselves as practicable under the circumstances. Apart from what has been said about their ineffectiveness by the Study Group on Productivity and incentives there has been no evidence from any side to suggest that the recommendations could not be found practicable. The Study Groups argument that the courts have not respected the formula has to be tackled on a different plane. We may like to underline the basic elements of these recommendations. (Commission's Questionnaire pages 23 & 24).

42. Sharing of productivity gains has two aspects : (1) sharing as production proceeds which is covered by incentives to produce more and (2) sharing of gains which result from total operations. (2) again has two components - (2)(a) sharing on the basis of gains in physical output and (2)(b) participation in total proceeds which depend on market conditions. (2) (b) in a way gets linked with bonus and is being taken up as a separate subject. Recommendations for (1) and (2) (a) are suggested below :-

(1) is covered by a number of general agreements at bipartite and tripartite levels. The substance of these agreements is reproduced in Question 166. These are discussed in a separate note.

43. On (2)(a) the quantitative basis is provided by the National Productivity Council Formula (Paragraph 20). It is possible to argue about the percentages mentioned in it but the principles appear to be essentially sound. In commending the formula, we could say that any suggestions for sharing will be debatable and will ultimately be decided on the basis of the bargaining power of the respective parties. But the formula as evolved does provide a fair basis for fixing the limits within which a bargain can be struck.

44. The conclusions reached in the report of the Study Group on Productivity and Incentives, particularly those about Human Factors in Productivity (excepting conclusion No. 53) and the Role of Government also require Commission's support though these conclusions may have to figure at appropriate places in the Commission's report.

A N N E X U R E

Average Annual Money Earnings and Gross Output per Worker in Certain Selected Industries

JUTE TEXTILES

Year	Average annual money earnings per workers (Rs.)		Gross Output per worker(Rs)		V.A.M. per man-hour worked (Rs.)	
(1)	(2)		(3)		(4)	
1946	462		2865		0.49	
1949	815	(76.4)	4681	(63.4)	0.50	(2.0)
1952	942	(103.9)	6135	(114.1)	N.A.	
1955	1027	(122.3)	5303	(85.1)	N.A.	
1958	1068	(131.2)	5774	(101.5)	N.A.	
1960	1224	(164.9)	7684	(168.2)	0.72	(46.9)
1961	1173	(153.9)	8652	(202.0)	0.73	(49.0)
1962	1303	(182.0)	8511	(197.1)	1.01	(106.1)
1963	1385	(199.8)	8662	(202.3)	0.99	(102.0)
1964	1562	(238.1)	8999	(214.1)	0.75	(53.1)

SUGAR

Year	Average annual money earnings per workers (Rs.)		Gross Output per worker(Rs)		V.A.M. per man-hour worked (Rs.)	
1946	348		5179		0.84	
1949	-		-		-	
1952	639	(83.6)	8293	(60.1)	N.A.	
1955	782	(124.7)	11574	(123.5)	N.A.	
1958	831	(138.8)	12345	(138.4)	N.A.	
1960	1163	(234.2)	20016	(286.5)	1.80	(114.3)
1961	1398	(301.7)	23088	(345.8)	1.88	(123.8)
1962	1508	(333.3)	21983	(324.5)	1.85	(120.2)
1963	1607	(361.8)	21158	(308.5)	1.91	(127.4)
1964	1664	(378.2)	26754	(416.6)	2.09	(148.8)

NOTE: Figures in brackets indicate percentage increase over 1946.

Source:- Census of Manufacturing Industries and Annual Survey of Industries (Table complied in the Statistical Unit of the Commission)

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Year	Average annual money earnings per worker(Rs)	Gross output per worker (Rs)	V.A.M. Per manhour worked (Rs)
(1)	(2)	(3)	(4)
1946	541	4678	0.67
1949	854(59.7)	6309(34.9)	0.87(29.8)
1952	1140(110.7)	10324(120.7)	N.A.
1955	1086(100.7)	10772(130.3)	N.A.
1958	1258(132.5)	14135(202.2)	N.A.
1960	1433(164.9)	15465(230.6)	1.65(146.3)
1961	1595(194.8)	16964(262.6)	1.91(185.1)
1962	1619(199.3)	17869(282.0)	2.04(204.5)
1963	1748(223.1)	19857(324.5)	2.11(214.9)
1964	1845(241.0)	21109(351.2)	2.28(240.3)

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Year	Average annual money earnings per worker(Rs)	Gross output per worker (Rs)	V.A.M. Per manhour worked (Rs)
1946	396	4155	0.61
1949	784(98.0)	6818(64.1)	0.97(59.0)
1952	1127(184.6)	15771(279.6)	N.A.
1955	1333(236.6)	16314(292.6)	N.A.
1958	1404(254.5)	17024(309.7)	N.A.
1960	1616(308.1)	23963(476.7)	2.20(260.7)
1961	1933(388.1)	27517(562.3)	2.33(282.0)
1962	2057(419.4)	31078(648.0)	2.94(382.0)
1963	2244(466.7)	32130(673.3)	3.02(395.1)
1964	2417(510.1)	33520(706.7)	2.74(349.2)

NOTE:- Figures in bracket indicate percentage increase over 1946.

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COTTON TEXTILE

Year	Average annual money earnings per worker(Rs)	Gross output per worker (Rs)	V.A.M. Per manhours worked (Rs)
(1)	(2)	(3)	(4)
1946	740	3674	0.65
1949	1187 (60.4)	5108(39.0)	0.79(21.5)
1952	1295(75.0)	6351(72.9)	N.A.
1955	1311(77.2)	6507(77.1)	N.A.
1958	1467(98.2)	6921(88.4)	N.A.
1960	1744(135.7)	8400(128.6)	1.20 (84.6)
1961	1816(145.4)	9010(145.2)	1.33(104.6)
1962	2064(178.9)	9748(165.3)	1.29(98.5)
1963	2155(191.2)	10576(187.9)	1.32(103.1)
1964	2301(210.9)	11506(213.2)	1.40(115.4)

Note:- Figures in bracket indicates percentage increase over 1946.

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IRON & STEEL

Year	Average annual money earnings per worker (Rs)	Gross output per worker (Rs)	V.A.M. per manhour worked (Rs)
(1)	(2)	(3)	(4)
1960	2103	17826	189
1961	2126 (1.0)	188.58 (5.8)	201 (6.3)
1962	2011 (-4.4)	19329 (8.4)	158 (-16.5)
1963	2313 (9.9)	23648(32.6)	232 (22.7)
1964	2428 (15.4)	24854 (39.4)	266 (40.7)

HEAVY CHEMICALS

Year	Average annual money earnings per worker (Rs)	Gross output per worker (Rs)	V.A.M. per manhour worked (Rs)
1960	1675	20618	2.44
1961	1722 (2.8)	20789 (0.8)	2.27 (-7.0)
1962	1897 (13.2)	25723 (24.8)	2.63 (7.8)
1963	1967 (17.4)	28822 (39.8)	3.42(40.2)
1964	-	-	-

FERTILIZERS

Year	Average annual money earnings per worker (Rs)	Gross output per worker (Rs)	V.A.M. per manhour worked (Rs)
1960	1773	19661	154
1961	2180(22.9)	21412(8.9)	225 (46.1)
1962	2329 (31.3)	28109(42.9)	226 (46.7)
1963	2878 (62.3)	32586(65.7)	307 (99.3)
1964	-	-	-

NOTE:- Figures in bracket indicate percentage increase over 1960.

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