

The Causes of Disguised Unemployment

in Indian Agriculture:

A Survey

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I. INTRODUCTION

Agriculture is the largest industry in India. It provides direct means of subsistence to about 70% of the population¹. It is the most important source of livelihood and employment (with 59.4% of the working population engaged in agriculture in 1981², it had decreased to 51.5% by 1985³). Its share of national income highlights its importance in the national economy (with 59% in 1950-51, 54% in 1960-61, 48% in 1970-71 and 40% in 1980-81)⁴.

The productivity per worker and the productivity per hectare are very low. Most of the farmers are deprived of basic needs such as sufficient nutrition, safe water, basic education, adequate shelter, proper health services, etc. They are too poor to be able to afford the most essential inputs, such as seeds, fertilizers, and insecticides. Had the productivity increased, the farmers would have been in a better financial condition to allow them to eat better, to have more education, to dress adequately, to stay healthier and to help in the further improvement of agriculture.

One of the most important reasons for the low productivity per worker in Indian agriculture is the prevalence of "disguised unemployment" (abbreviated to D.U. hereafter). However, D.U. is also an effect of low productivity of labour. If the productivity of the labourer⁵ increases, there will be more capital generation in the sector. Therefore, as investment expands, it would imply more job creation and a decrease in D.U.

A much larger number of labourers are engaged in production than are really needed in this sector. Therefore, the marginal product of labour (MPL) is often negligible; it may be zero (or as we argue later on and as some economists believe, it may even be negative)⁶. Thus, even if some of the population is removed from this sector, the total output will not fall (this part of population is referred to as surplus labour in this paper). This is because the remaining underutilized labourers will be better utilized.

As we argue in this paper, D.U. is primarily the result of the heavy population pressure on land and the absence of alternative employment opportunities in Indian villages. As can be inferred from the title of the paper, the purpose of this essay is to present the reasons for the existence of D.U. in Indian agriculture. Although in the next section of the paper we shall try to clarify the meaning of D.U. as it has appeared in different writings and narrate the definitions right from the time of the emergence of this notion (within the limited time and with our limited resources), the definition of D.U. as stated by some of today's prominent Indian economists is accepted in this paper. In other words, it is accepted here that "to say disguised unemployment is equivalent to saying that in that working combination the marginal productivity of labour is zero or almost zero and may even be a negative quantity"⁷.

This paper does not, empirically, test the validity or invalidity of zero MPL. Neither do we attempt to present data showing the precise extent of D.U. in Indian agriculture. This is because we contend that it is simply impossible to know the exact number (or even near exact number) of "disguisedly unemployed" labourers, since, even with the most sophisticated methods, D.U. is not accurately measurable (we shall explain this point later on, in this paper). The theories and methods of measuring D.U. generally relax some conditions or take a number of assumptions which are somehow unrealistic in the real world. For example, the assumption of "other things are equal", which economists generally suppose in discussing D.U. and the zero MPL, and which is found in economic literature almost everywhere, is unrealistic in the context of a subject like zero MPL as indicator of D.U. This is because, to test the productivity, as we discuss in this paper, one should consider many factors together which may affect production, whether social, economic, biological, structural, or other. Unfortunately, this type of global approach is completely lacking in the literature.

Another reason for not using much data to show the extent of D.U. or to assess the MPL is the unreliability of data and unavailability of enough data sources⁸. However, in later sec-

tions we have tried to use the latest and the most reliable data we could find from the limited sources available, in order to establish the conceptual interconnection between D.U. and population growth, land distribution, literacy rate, and other related variables. The third section of this paper includes a relatively comprehensive discussion about zero MPL and, wherever possible, a critical review of this notion. In this section the existence of zero MPL has been discussed from the point of view of its opponents as well as defendants. We also present a brief discussion of a number of empirical tests about the extent of D.U. in the related regions and a critical examination of their validity.

The next section (section IV) is related to the most comprehensive discussion of this paper which constitutes its main body and embraces its topic, i.e. 'why there is D.U. in Indian agriculture'. The discussion of this section has been supported with the help of the available data regarding land, labour, population growth and the other related information which have been possible to collect. A brief summary and conclusion is provided in the fifth section of the paper.

In this paper, we are not intending to prescribe solutions to the problems of Indian agriculture, or how to remove D.U. from this most vital sector of the Indian economy. Due to the importance of the subject in the context of an economy with a population of about 750 million⁹, we have tried to describe the reasons for D.U. which, in turn, cause low productivity per worker in Indian agriculture.

II. DEFINITION OF DISGUISED UNEMPLOYMENT

The importance of the discussion of D.U. can be best understood by considering the fact that it is a highly controversial topic in development economics. Many prominent economists have discussed this subject, though a number of them were mostly concerned with wage employment. The discussion of D.U. is often related to the validity of zero Marginal Productivity of Labour (MPL).

Although wage labour does exist in Indian agriculture, as will be argued later, it is comparatively much less relevant in discussing D.U. in Indian agriculture than the family based cultivation. Under classical wage labour employment, the employers do not normally own the land. Instead the landlords rent the land to others to extract ground rent. This is equivalent to Ricardian theory which believed that "the interest of the landlord is opposed to that of the labourers and conflicts with the general interest of the society"¹⁰. It is assumed that the employer middlemen do not pay more than the MPL to the wage labourers. Hence the hypothesis of a zero MPL on these lands is generally invalid because wages are positive. Even if the wages exceed MPL, there are social and political reasons behind it. Having more servants brings social prestige and popularity in India. Therefore, because of this tendency to have more servants, the employers or the landlords may employ more wage labourers than required. This, with a fixed wage, may drive MPL below the wages. Moreover, it is important for the politicians, who are mostly landlords, to have more supporters at the time of elections. Consequently, they employ more wage labourers, sometimes, to collect more support and get more votes. They also employ more labourers sometimes with the view to reducing riots and other social vices associated with massive unemployment. That is to say, if there is huge unemployment, the unemployed army may raise its voice against the landlords and employers at the time of elections. For such reasons, the MPL may even reach zero on these lands. However, the above effect on wage labourers is not relevant here because the fact is that peasant

agriculture in India is often organised on a family basis and this type of cultivation is the most relevant for our discussion since D.U. is generally found in the context of family based cultivation. This point will be further elaborated later on.

D.U. refers to that amount of surplus labour which can be removed from agriculture without doing any harm to total production, whether it be wage employment or not. As Chaudhuri asserts "D.U. resides in family rather than in hired labour"¹¹. Myrdal also treats D.U. as a situation of underemployment on a "self employed" basis or, as he calls it, a "family enterprise"¹². In fact D.U. rarely happens in the context of wage employment because the employers do not often pay the wage labourers more than their MP and (as we discuss in the next section) D.U. implies that MPL is zero. Therefore, as mentioned earlier, since the wages are positive and MPL is greater than wages, MPL should be positive in wage employment, which means that D.U. does not usually exist within this type of employment.

Labour surplus is defined by David Turnham as the difference between the "men available (mandays or man hours) for work and the amount of work which is in fact produced"¹³. This can be explained with the following diagram

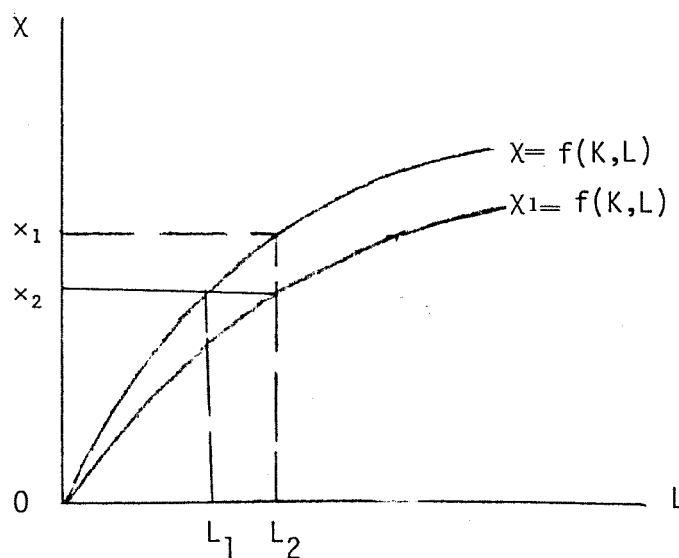


Figure 1

If OL2 labour units are used efficiently then according to our production function (X) the amount of output will be Ox_1 . However, if for some reasons it is not used efficiently, it may fall on a lower production curve and the amount of total output will be lower than Ox_1 (here Ox_2), which can in fact be produced efficiently with OL1 amount of labour. Therefore L1L2 is a surplus labour which is defined as D.U. in our discussion.

The existence of surplus labour in disguise implies that the total amount of work is more thinly distributed among the workers than it needs to be, i.e. each worker is doing less than the work he could do, had he used his full potential during the normal full employment working hours. In a family labour enterprise, nobody hires an additional unit of labour if it is not required; wage labourers will not be employed unless surplus family labour is completely used up. Therefore, in a family cultivation, there can be no surplus labour if at least one hired labourer is employed. However, it is hard to find hired labourers in this type of cultivation, which suggests that existing family labour is more than enough to undertake the efficient cultivation of these lands.

Looking at the history of the emergence of this word, we find that D.U. was used for the first time in 1936 by Joan Robinson to explain the situation of industrial workers in developed countries who, as a result of inadequate effective demand, were laid off and accepted inferior occupations¹⁴.

Rosenstein-Rodan (1943)¹⁵, Leibenstein (1957)¹⁶, Viner (1957)¹⁷ and many others defined D.U. as the existence of excess labour in agriculture with zero MPL under the conditions of 'ceteris paribus'. Though this definition of D.U. has been challenged by a number of opponents, as discussed in the next section (section III), it seems that the present Indian writers refer to the notion as defined by Leibenstein and others. Disguised unemployment in the context of Indian agriculture is defined as that amount of surplus labour which can be

syphoned off the agricultural sector without adversely affecting its output (other things being equal)¹⁸. It is worth mentioning that since agriculture is a seasonal activity and requires more labour in the busy season than the slack season, the concept of D.U. excludes seasonal unemployment.

There are a number of economists who state that organizational changes, such as the modification of land holdings, are necessary for the withdrawal of the surplus labour. Doreen Warriner (1939)¹⁹, Rosenstein-Rodan (1943)²⁰, Ragnar Nurkse (1955)²¹, Richard Eckaus (1955)²² and many others are the advocates of this category of D.U. The other group believes that the surplus labour can be removed without any organizational improvement or capital increment. Prof. Lewis (1954) is the defender of this category of D.U.²³ However, both of these groups accept that there exists a large number of labourers in the underdeveloped economies, particularly in agriculture, the withdrawal of which will not have adverse effects on production.

D.U. is defined by Nurkse (1955) as a state of affairs in which a part of the labour force can be drawn from agriculture without reducing output. This, he says, can be done without any technical improvement, i.e. without any embodied technological advance, more equipment, better seeds, mechanization, drainage improvement, irrigation, etc. However, the change would still necessitate a more proper method of cultivation and a better organization of work²⁴. He also believes that "the state of D.U. implies at least to some extent a disguised saving potential as well"²⁵. We turn to this discussion in the next sections of this paper.

A similar definition of D.U. comes from Mujumdar (1961). According to him "taking the size of the labour force as given, D.U. may be described as a situation in which the withdrawal of a certain quantity of the factor labour to other uses, will not diminish the total output of the sector from which it is withdrawn, given a measure of reorganization in the sector"²⁶.

Myrdal's definition of D.U. (1968) in "static terms" relates to the possibility that "those persons who work on their own account and who are so numerous, relatively to the resources with which they work, that if a number of them are withdrawn for work in other sectors of the economy, the total output of the sector from which they were withdrawn would not be diminished even though no significant reorganization occurred in this sector, and no significant substitution of capital"²⁷. For practical purposes, however, he rejects the "static form" of D.U. in which only the number of labourers changes and other things stay unchanged²⁸. He refers to D.U. as a "reserve labour", that is a "readily available labour supply" that waits for more productive employment opportunities²⁹. He asserts that an increase in aggregate demand will mobilize this labour reserve towards the more productive work, "if we could legitimately disregard a qualitative dimension of labour input, i.e., labour efficiency"³⁰.

The economists have differences in the application of D.U. Some of them, such as Myrdal³¹, apply D.U. to the labour input; a group of them, such as Sen³², apply it to the number of labourers; while the position of some of them, such as H. Myint³³, is unknown in this regard. In this paper, D.U. is being applied to the number of labourers. Therefore, it is acceptable to think of D.U. as defined by the present Indian writers. However, contrary to a number of economists, like Ranis and Fei³⁴, Leibenstein³⁵, Bela Mukhoti³⁶, Dipak Majumdar³⁷, Paul Wonnacott³⁸, W. A. Lewis³⁹ and others, in this paper D.U. will not be treated on the basis of wage labour, but rather with respect to family enterprise as stated by a number of economists like Myrdal⁴⁰ and Nurkse⁴¹. This is because the relevant Indian peasants cultivate their land jointly and share the produce together⁴². They generally own their small plots and are not hired by others, except on larger land-holdings which are not, as stated before, the central focus of this paper.

As we explain in section III, D.U. in Indian agriculture implies a zero MPL. To elaborate this point further, we could argue that since land has a limited capacity to absorb labourers

with the existing equipment, it will be a wastage to engage labourer beyond that point. Therefore, we can think of a zero MPL as a situation arising when more labourer is being applied beyond the economic limit set by available land. Moreover, people may get into each other's way and work cannot be done so effectively (in this case we can think of a negative MPL, which would more rarely arise).

III. ZERO MARGINAL PRODUCTIVITY OF LABOUR

There has been controversy over the validity of a less than positive MPL in economic literature. Jorgensen (1967) has distinguished the two groups which differ in their ideas about this point. As Jorgensen argues, whereas the neoclassical theory of economic development suggests that there is always a positive marginal productivity of labour, in classical theory it is assumed that there is some point at which the MPL becomes zero⁴³. Though the suggestion of the classical theory of development seems to be acceptable, as Jorgensen suggested, their ignoring population growth as a "qualification to the main argument"⁴⁴ is not reasonable. Specifically, in a country like India, where the population growth is high, we cannot assume to hold the population constant in order for the land and capital, which are also scarce, to absorb disguisedly unemployed labour.

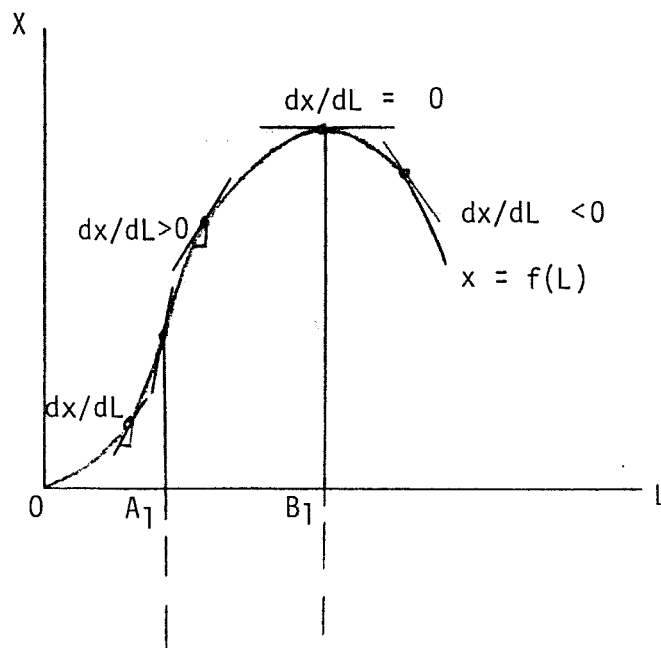
There is an unlimited supply of labour in India where population is so large relative to capital and other natural resources, that the MPL in large sectors of the economy is negligible, zero or even negative. Such type of D.U. has been demonstrated to exist in agriculture by many writers, by showing that the family holding is so small that if some of the members of the family are transferred to other occupations, the remaining labourers could cultivate the land just as well, provided that they work harder and are willing to work harder. Rudder Datt, K.P.M. Sundharam⁴⁵, A.N. Agrawal⁴⁶, D.C. Sancheti⁴⁷ and B.K. Bhargava⁴⁸ are among the present distinguished Indian economists who believe that the zero MPL is a reality. Though they do not discuss this phenomenon in detail, they explicitly assert that there is a huge number of labourers in Indian agriculture whose actual contribution to production is zero. However the "employment ratio" (as it is normally described by E/P as the size of employed labour / rural population of working age) appears to be quite high in an overpopulated country like India and it seems to be hard to find someone unemployed. This paradox rests on the fact that everyone struggles to establish a solid claim to a share of national income. There-

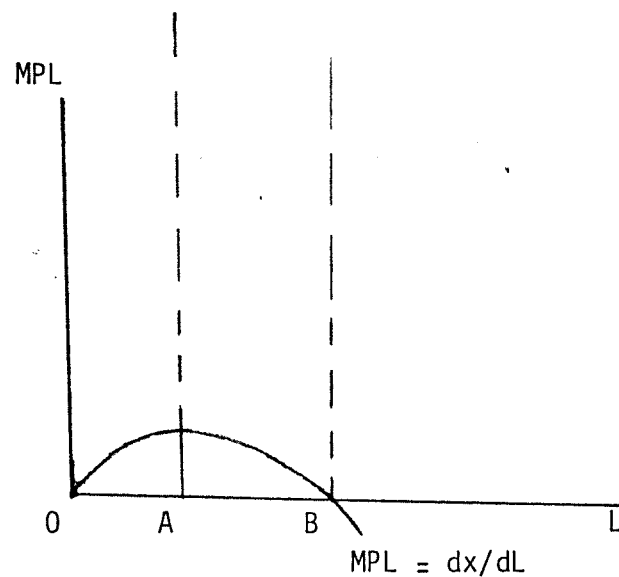
fore, the jobs are shared and a job which technically needs only one person is overstaffed by several persons, each one insisting on being considered as a full time worker to keep his claim unchanged.

Indeed as D.Turnham also puts it, zero MPL can be interpreted as: "(i) that the value of extra work for a day or an hour is actually zero or (ii) that some people are marginal in the sense that simply removing them would stimulate those remaining to compensate by working harder"⁴⁹.

D.Turnham further argues that it is actually possible that MPL (under some specific conditions) becomes zero. His argument presumes that in a labour surplus economy, there is work to be done if the labourers want to work more⁵⁰. However, in Indian agriculture the labourers are inefficiently occupied because of the unavailability of enough work. Hence, they work slower than the normal pace of an efficient worker.

The MPL can be analysed with the help of the following diagram, discussed in, among others, Koutsoyiannis (1979)⁵¹:

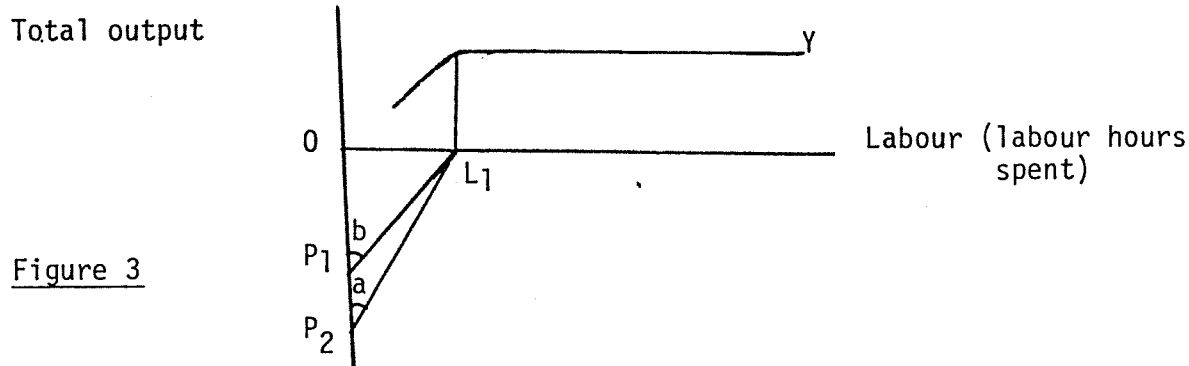




X stands for total production and L denotes the amount of labour applied in production. MPL is at its maximum level when OA amount of labour is used. It starts decreasing beyond A and reaches zero at B.

This definition of D.U. that is dependent upon the existence of a zero MPL is not only compatible with the classical presentation of Nurkse⁵² and others that have understood the concept within the framework of the standard Neo-classical production frontier, but it also is consistent with the analyses of writers such as Turnham and Leibenstein who have emphasised the X-efficiency characteristics of agricultural production in developing countries.

Another interesting explanation of zero MPL comes from A.K.Sen⁵³. Sen represents this phenomenon with the help of the following diagram:



L_1 is the point of zero MPL beyond which more labour ceases to be applied. The working population is OP_2 with each labourer putting 'tan a ' hours of work, whereas the normal working hours per labourer is shown by 'tan b ' ($\tan a > \tan b$). To keep the normal hours only OP_1 labourers are needed, which means that the marginal productivity of labourer is "nil over the range P_1P_2 ". P_1P_2 is the amount of labourers which are disguisedly unemployed.

Among the prominent economists who rejects the existence of zero MPL is Schultz (1956). He writes "there is no evidence of any poor country anywhere that would even suggest that a transfer of some small fraction, say five percent, of the existing labour force in agriculture, with other things equal, could be made without reducing its (agricultural) production"⁵⁴. By relying on data, it may be possible to support what Schultz argues. However, we cannot rely safely on the data and the underlying assumptions of theories to assess zero MPL. If 'other things being equal' means that the work effort of the remaining labourers also stays unchanged with every other input factors, he is definitely right. This assumption, however, must be ruled out as the existing evidence available from Indian agriculture would support. Therefore, it is possible that MPL is zero in many cases in Indian agriculture.

Schultz argues that through experience, agriculture gets organized and uses the labour in an 'optimal fashion', leaving workers with a positive MP. Therefore, this would imply that if there is withdrawal of labourers from agriculture without an accompanying change in techniques, then output ought to decrease⁵⁵. Although India has gone a long way in experimenting

with agriculture, because of its caste system⁵⁶, and acquired enough experience to use its labour in specific occupations, one cannot assume that she has reached the optimal state described by Schultz. In contrast, and as argued before, a large number of workers are found with zero MPL and their removal from the farm⁵⁷ may not change output.

Removal of labourers from the region in which there is D.U. may change the total quantity of output. However, that is so only because the remaining labourers are not being used efficiently. There is no incentive to increase per capita consumption. With a decrease in total employment the amount of total consumption which is needed by the remaining labourers will decrease. The labourers do not need to increase their effort to produce more and, because of the mentality of the agricultural labourers 'to go for need but not for more profit', the total effort may not increase for more profit. This is because the people of lower classes, in India, generally work out of necessity and not for increasing profit (since there is no incentive or pressure behind them). There exists a huge unexploited labour reserve that can easily offset the cut in employment. Since there is less need for output because of the decrease in total consumption, it ensures that there may be a decrease in total output because of the decrease in total effort⁵⁸.

In a further development of the argument, Schultz found that 'surplus labour'⁵⁹ is non-existent and therefore that the surplus labour theory was "a false doctrine"⁶⁰. As Sen (1967) argues, Schultz's concept of surplus labour is 'inconclusive' from the usual surplus labour thesis viewpoint and there are fundamental difficulties with his approach⁶¹, though Sen does not, explicitly, reject Schultz's finding.

The way that Leibenstein (1957) describes zero MPL seems to be quite different from other explanations. He concludes that there will be 'labour deficit' at very low wages and a labour surplus at higher wages, therefore, MPL is zero when wages are sufficiently high⁶². This con-

clusion is based on the relationship between wages, nutrition and productivity which will be explained in a moment. Quoting from him:

*"At very low wages there may be a labour deficit, because so little work is done by each man. But at higher wages the work done per man increases so rapidly that a labour surplus is created. For the underdeveloped areas this may mean that the allegedly observed manpower surpluses in agriculture do not really exist when wages are very low but they do indeed become a fact when wages rise sufficiently. It is worth observing that at the low wages the marginal product of the fully employed labour force is above zero but that at the higher wages the marginal product per man may fall to zero or even below zero"*⁶³.

His wage-nutrition-productivity relationship is stated as follows: When wages are low, the supply of work will decrease because with low wages the wage labourer cannot afford to consume enough. Therefore he does not get enough nutrition and sufficient energy to be adequately productive. This has an adverse effect on his productivity. The amount of work which a labourer is able to perform depends on his energy and health. On the other hand, the amount of energy and the extent of his health depends on his ability to pay for consumption goods, and this is what his wage determines. Therefore a low wage means a low nutrition and a deteriorated health, which in turn means a low productivity. This is what he rightly explains in two stages, i.e. (1) the relationship between income and nutrition and;(2) the relationship between nutrition and productivity⁶⁴. It follows, therefore, that D.U., as understood in terms of zero MPL, is a fact that is largely dependent on the level of per capita consumption (and thus it cannot merely be the result of it).

Another idea about zero MPL comes from Viner (1957). He rejects the existence of zero MPL on the basis of a change in the factors of production. That is because he thinks in terms of productivity in a more dynamic fashion (not static, with other things being equal). He contends that since the other factors of production change with time, then labour adds to total production and the zero MPL cannot exist⁶⁵. While it is true that changes in other factors of production can bring about a limited employment of labour, there will exist a point at which

the increase in other factors of production lags behind the increase in labour. Hence, we agree with Viner that the 'technical coefficient' of production changes over time, however the supply of labour exceeds capital accumulation and leads to zero MPL.

Georgescu-Roegen (1960) is another economist who accepts the existence of zero MPL to show that it is a symptom of a state of overpopulation⁶⁶. His emphasis on the existence of overpopulation in some countries has led him to the acceptance of the zero MPL as an indicator of overpopulation⁶⁷. To validate his argument in showing the existence of zero MPL, he adds: "Today feudalism has been replaced by individual peasant holdings and the total agricultural output is still maximized because the employment of the peasant family is governed by maximizing total family output rather than the principle of marginal productivity. Hence, marginal product is zero when the total output of the family farm is maximized"⁶⁸.

Another idea regarding the existence of zero MPL comes from Paul Wonnacott (1962). He pointed out that zero MPL (even negative MPL) may also exist when labourers are undernourished⁶⁹. This is because an undernourished worker does not add much to total production, but consumes more than his contribution to output. With the removal of such a labourer from the farm, the share of others from the total output will increase; they will get more energy and they will be able to compensate for the loss of production arisen from the withdrawal of such a labourer. Therefore, total production will not decrease, which means that the MP of the labourer which was removed from the farm is zero.

Another study by A.K. Sen (1967) also confirms the existence of zero MPL. Sen makes an important distinction in this regard. He explains the confusion arisen from "not distinguishing between labour and labourer" and asserts that:

"It is not that too much labour is being spent in the production, but that too many labourers are spending it. Disguised unemployment thus normally takes the form of smaller number of working hours per head per year; for example each of three brothers shepherding the sheep every third day. It is thus the marginal productivity of the labourer, so to say, that is nil over a

*wide range and the productivity of labour may be just equal to zero at the margin. It may also take the form of lower intensity of work with people, taking it easy, e.g., the peasant having time to watch the birds while working. If a number of labourers went away, the others would be able to produce about the same output working longer and harder..... In a family based peasant economy unemployment will naturally put on this disguise. A piece of land that can be cultivated fully by two, may actually be looked after by four, if a family of four working men having no employment opportunity happens to own it"*⁷⁰.

Myrdal's idea of the application of MPL conflicts with that of Sen. Myrdal (1968) asserts that marginal productivity is wrongly applied to labourers and it should be used in terms of labour input (labour hour, labour day)⁷¹. He does not accept the existence of zero MPL. However it seems that Myrdal's not accepting the existence of zero MPL stems from his specific application of marginal productivity. Quoting from Myrdal "there is no doubt that, even under the assumption made under the theory of 'underemployment'⁷² about unchanged institutional framework, capital equipment, and techniques, the yield can almost everywhere be raised by an increased labour input"⁷³. This is an idea similar to that of Schultz about the MPL. However Schultz applies MP to the labourer.

In 1971, H. Myint also accepted the existence of zero MPL. He wrote "Because of heavy population pressure on existing land, the marginal product of labour in agriculture is zero"⁷⁴, though it is not clear whether his notion of labour is used in reference to the number of workers or the number of hours of work. He also conceives the possibility of zero MPL because of unavailability of alternative opportunities of using some part of the family labourers elsewhere⁷⁵ (this is the subject of discussion of the next section).

In contrast with Schultz's idea, a study by Bela Mukhoti (1978)⁷⁶ supports the conclusion arrived at previously by Georgescu-Roegen that "on small peasant holdings, employment of family labour is governed by the objective of maximizing total family output, and this can be achieved by working to the point of zero marginal product"⁷⁷. In accordance with the analysis of Georgescu-Roegen, Mukhoti shows that only small farmers employ labour to the point of

zero marginal productivity to maximize total output⁷⁸. The reason supported by Professor Mukhoti as to why the small cultivators employ labour until the MPL, with fixed land, becomes zero, is because in a peasant household setting, the opportunity cost of labour is zero⁷⁹. Though he does not define opportunity cost, it seems acceptable to say that it is "the amount of investment that has to be put to keep output constant as a labour moves out"⁸⁰. It can alternatively be explained as "the amount of output sacrificed per year as a result of drawing a labourer away".⁸¹

There has been a number of empirical works to assess the extent of D.U. We briefly discuss a few of these studies here.

Schultz's study of the Indian case (1951) was done on the basis of a given point in time (1918-21), which is an unusual period that is not representative of other more normal periods in Indian economic history⁸². His work rejected the validity of the surplus labour concept and his conclusion of the acreage yield was based on death and birth rates. However, to calculate the change in acreage yield, which Schultz uses as the basis for his survey to refute the zero MPL thesis, it is clearly insufficient only to use data relating to birth and death rates, since there are many other factors which can affect the acreage yield. However while persisting in his rejection of zero MPL, Schultz himself affirmed that his test was not appropriate in validating this hypothesis⁸³.

One of the empirical works on this topic is that of Mellor and Stevens who studied 104 rice farms in Thailand in 1956. They concluded that D.U. exists, in the sense of zero MPL, in the regions under consideration. Though their data was very precise, their method did not control for many factors which can affect labour productivity such as farm size, level of irrigation, land fertility and many other input factors. Because of their assumption of the existence of homogenous labour and of their assumption of a uniform production function⁸⁴, much of their work raises serious doubts as to its validity..

In another study in Southern Italy in 1957 in this regard, Rosenstein-Rodan accepted the existence of D.U. and the zero MPL. He used the static concept of disguised unemployment; he assumed the active population to be between fourteen and sixty-five; he used the coefficients for labour efficiency, and labour hours were counted for specific cultivations and were compared with the available labour hours. He found that 10 to 12 per cent of the actual population in agriculture was surplus⁸⁵. Although we do not question the validity of his conclusion, we doubt that his assumptions permitted him to conclude the exact amount of D.U. His static concept of D.U. and his coefficients for labour efficiency and labour hours (and their comparisons with the available labour hours) are certainly questionable. Moreover, he did not consider all the necessary factors which may affect underemployment and he did not use all input factors affecting MPL.

Another empirical work has been done by Mujumdar who studied nine villages of Bombay Karnataka region in India in 1961. He interviewed 25 families in each village and studied village records to determine the information he needed (including standard holding in each village) to measure the extent of D.U. in 1954-55. He concluded that 71% of the farmers are affected by D.U.⁸⁶ Not to say anything about the accuracy involved in his sample inquiry, his 'standard holding' is an ambiguous term. He did not explain his 'standard holding' which seems to be an arbitrary unit. He assumed that only bullocks are used in production and there is no alternative production in his approach. Land fertility and irrigation are ignored in his model. Though we do not deny that D.U. exists in India, his conclusion of such a significant D.U. of 71% seems to be an overestimate of D.U. in Indian agriculture.

Professor S.Mehra of the Delhi University did further empirical work in this regard in 1966. She attempted to show the significance of surplus labour in Indian agriculture (i.e., the difference between the total work force employed and the total work force required to produce the same output). She concluded that 17.1 per cent of the Indian agricultural labour-

ers are surplus. Although her attempt is worthwhile and her approach is interesting, her assumptions of unchanged techniques and organisation of farm structure⁸⁷ are not realistic. She treats labourers as being homogenous and associated with a given technique of production. Her various assumptions and questionable merging of holding size - classes produce serious doubts concerning the accuracy of her method⁸⁸. Moreover, because of the differences in the quality and quantity of required input factors, Mehra herself does not have much faith in her conclusion. She writes:

*"A great deal of the work of such estimation has proceeded along the output route. The complexities with which it bristles are obvious. The labour requirements of a unit of wheat are different from those of rice; in respect of any crop, say wheat, they are different according as it is raised with or without irrigation, on large mechanised farms or the reverse, in a region where nature is bountiful or niggardly, etc. Explicitly or implicitly such attempts rest on the claim that the conditions underlying the 'norms' they use are typical of the universe with which they deal in each one of these respects. It is hard to establish the validity of this claim. The worth of the estimates, therefore, leaves room for doubt"*⁸⁹.

M.Gillis, et al, (1983) also object to the accuracy of Mehra's approach on this ground. While mentioning that "needs" can be defined in relation to a specific technology, they write: "with a different technology a very different quantity of labour may be 'needed'. Thus the econometric approach can be only a national indicator of disguised unemployment"⁹⁰.

Though zero MPL appears to be an indispensable fact of an overpopulated economic sector such as Indian agriculture, much of the existing literature seems to suggest that it is rather impossible to prove its existence with the available data. Yet there do not exist sufficient reasons to reject this hypothesis. It is not only because of unreliability of data (as we have already pointed out) but also because of the fact that there exist no other theories which can integrally incorporate all the determinants of marginal productivity of labour - the determinants of which are themselves subject to change over time.

Before we close this section we have something to say in connection with wages and MPL, which has to do with the existing structure of the labour market. It is possible that the employ-

ers of large scale farms pay a wage above marginal product of labour and may even hire labourers with zero MPL under normal conditions. Some economists may argue that an efficient economy should not pay a wage more than marginal productivity of labour. We have already reasoned it out that for, social and political reasons, wages of the labourers can exceed their MP sometimes. Under normal conditions, when there is no political pressure behind the employment of wage labourers, because of the low bargaining power of agricultural labourers and the oligopolistic "exploitation" of labour by big farmers, the marginal product of labour would be, as expected, significantly higher than the average wage rate⁹¹.

IV. CAUSES OF DISGUISED UNEMPLOYMENT IN INDIAN

AGRICULTURE

We have, so far, defined D.U. and clarified the meaning of D.U. in Indian agriculture. To recall, D.U. in Indian agriculture is defined with respect to the existence of zero MPL. Now we intend to show why there is D.U. in Indian agriculture. We have already mentioned that the reasons for the existence of D.U. rests on high population growth and the unavailability of sufficient employment opportunities in rural areas in India. Here we discuss this matter in detail and provide evidence wherever necessary, as well as, possible.

We do not say that there is D.U. everywhere in Indian agriculture. There are farms, especially where there exists conditions of wage employment, in which surplus labour would not exist. Therefore the phenomenon of zero MPL may not be seen in all the agricultural farms in India. We cannot consider the whole sector together and think of the mobility of agricultural labourers from one farm to the other as a remedy for decreasing the extent of D.U. because, given the characteristics of the existing labour force, all the labourers would not necessarily have the technical skills to cultivate the differentiated plots of land. Moreover, shifting labourers from one farm to another, sometimes, has to be done on a family basis. That is to say, the labourers either cannot move at all or they have to move with their family. Moving with their family may create surplus for the other farms which had labour shortages before and may actually lead to a reduction in total production in the region of origin.

It is not so difficult to observe the phenomenon of D.U. in an overall agricultural sector when one considers the fact that the increase in land cannot keep pace with the increase in the number of labourers (excluding the advancement in technique, because a more advanced and labour saving technique may have further adverse effects on labour employment in Indian agriculture).

We cannot assess the overall agricultural labourers with specific criteria because the mode and technique of production, their ability to work, their work conditions, their land fertility and many of their related inputs differ from one land to the other. We do not have enough information about the specific farms with abundant labourers and the extent of excess labourers on these farms.

In discussing the inadequacy of the 'surplus labour' approach in order to judge the success of the employment policies David Turnham introduces his 'income approach' for "measuring the size of the employment problem and degree of progress towards its solution"⁹². He emphasises poverty as a criterion for measuring unemployment and underemployment. He calculates the average income among fully employed workers. Any full time worker whose income falls below 1/2 or 1/3 of this group is labelled as the 'low paid worker'. If the proportion of the low paid workers increases over time, he concludes that the underemployed workers increased⁹³. His fraction of 1/2 or 1/3 of average income produces doubts as to why he selected such an arbitrary fraction. His method measures income rather than unemployment and as Gillis M, et al, argue "it is not an adequate substitute for analysis of degree and forms of labour utilization as a cause of low productivity and income. In other words, we can not focus exclusively on the result, low income"⁹⁴.

P. Gregoey (1980) also points out the problem of assessment of the level of employment.

Quoting from him:

"It should be noted, however, that, especially in the case of unpaid family workers, the problems of enumeration are formidable. This is particularly the case in rural areas and applies more frequently to the enumeration of women; the possibility of significant underenumeration in this case is widely recognized. Thus, while the measures of absolute employment levels in this status may not be reliable, one can only hope that the character and degree of measurement biases remain constant in the survey instruments used in the terminal time periods so that the 'measured' changes at least represent an accurate reflection of the direction of change and stand in a constant relationship to the actual change"⁹⁵.

Hence with the existing methods of measuring labour surplus it is not possible to present accurate data in order to show the extent of D.U. in Indian agriculture.

This is because of the inadequacy of different approaches in estimating the correct size of labour surplus. We are simply talking in terms of those farms in which the family labourers are used for cultivation and these family labourers are more than needed for the particular land under cultivation. This is how we explain a natural form of D.U. in Indian agriculture. Therefore we are not very much concerned with those farms on which hired labourers are used and which are generally larger in surface area.

To the degree that it is possible we try to describe empirically the existence of D.U. resulting from population increase. However we cannot present accurate data for the right size of land to be cultivated by the right amount of labourers, because the inputs necessary for different agricultural lands are different in quality and quantity. In other words, a "standard holding" for the right amount of technical coefficients is an arbitrary unit which depends on many input factors which are unknown to us. Therefore we cannot even talk about the "standard holding" and present data for land use as a helpful tool in connection with D.U. That is to say, we cannot assert that a particular farm with particular characteristics and particular inputs needs a definite number of labourers with a particular quality and skill at a particular time, and if there are more labourers on land with such specific features, conclude that these excess labourers are surplus. However we can recognize the symptoms pointing to the existence of D.U. in Indian agriculture. In discussing the occupational structure in India, Datt and Sundharam write: "Over the last 90 years, the proportion of working population engaged in the primary sector, i.e. agriculture and allied activities has not fallen below 70 percent. This is really significant, since a large percentage of population dependant on agriculture is a clear indication of the prevalence of large-scale disguised unemployment....."⁹⁶. That is because, with such an increase in population (which we will show later in this paper), with a large base

and with an unchanged percentage of population dependant on agriculture for a long time, the land will not have enough capacity to absorb all the labourers so productively. Thus the absolute level of D.U. increases. Table 1 shows the percentage of working population in Indian agriculture.

Table 1
Agricultural workers as a percentage
of the total Indian labour force.

Year	1901	1911	1921	1931	1951	1961	1971	1981
% of working pop. in agri.	71.7	74.9	76.0	74.8	72.1	71.8	72.1	68.7

Source: Agrawal A.N, Indian Economy, 13th edition, 1987, P.112

The vast labour force was not mobilized to other non-agricultural and rural employments, such as rural transport services, expanding irrigation, basic industries, reclamation work, etc. The basic reason for the failure to change the industrial and/or occupational structure is that the productivity of labourers did not increase to generate a surplus of farm products to support non-agricultural employment. Moreover, there has not been enough emphasis on the development of small-scale and cottage industries since the first 5-year plan (1951), but there has been instead a "concentration on large-scale producer goods sector with limited employment generation effects"⁹⁷. Another important reason, stated by Datt and Sundharam, for such a static occupational structure is the relatively high rate of growth of the labour force resulting from a high population growth (rapidly declining death rate, but a very small decline in the birth rate or even an increase in it sometimes)⁹⁸.

The problem of most underdeveloped agrarian economies is overpopulation. Indian agriculture also suffers from this structural problem. Quoting from Myrdal:

"When related to the practical problem of a population policy based on an analysis of the facts and postulated value premises, 'overpopulation' simply means that a reduction in fertility rates is desirable, because it would improve development prospects.... In practice, when the

*term is not related to the logically faulty and unrealistic concepts of population optimum or underdevelopment, it is used to indicate in a broad and general way that a population is very much too large to allow decent levels of living and 'reasonable' prospects for development"*⁹⁹.

It is not easy to give a clear meaning to the concept of overpopulation. As it is often described, we assume that India is an overpopulated country, without going into the details of the definition of this term.

India's rural overpopulation is a characteristic feature of this densely populated country. The result of such overpopulation has been a large-scale underemployment in agriculture. It has been suffering historically from D.U. D.U. has a number of causes among which the most important are economic and demographic. The high rate of population growth together with the lack of alternative employment opportunities have resulted in an overcrowding of labourers on the land. Neither has the cultivable land increased enough to decrease the man-land ratio nor has there been sufficient creation of alternative employment opportunities to absorb this excess labour.

One of the prominent development economists who had a different approach in introducing the causes of D.U. is Nurkse (we briefly discussed his approach earlier). Nurkse states that "the state of D.U. implies a disguised saving potential"¹⁰⁰. This, he asserts, is because the "productive labourers" produce more than they consume (the difference between production and consumption is called 'virtual saving' by Nurkse)¹⁰¹. According to Nurkse this saving is wasted by the "unproductive consumption" of the labourers who could be removed from the farm (without adversely affecting the production) and whose contribution to output is nil. Therefore if the "unproductive workers" are sent to work on other projects (for example, capital projects) and are fed by their relatives (productive labourers), their "virtual saving would become effective saving; the unproductive consumption would become productive consumption"¹⁰². However Nurkse does not suggest how to start this process. He seems to have

neglected the fact that there are not enough capital projects to absorb these "unproductive" workers; nor is there enough capital to start one.

Nurkse concludes that D.U. can be used to generate capital. This can be done by financing from within the system itself in the purely classical sense of asking the peasants not to eat more of the produce after the removal of "unproductive" labourers, and send the rest of the produce to their relatives who are now working in other projects. Therefore there will be "a re-allocation of labour in favour of capital construction"¹⁰³.

In the definition of D.U. we mentioned that the work is more thinly distributed among the workers. With the removal of underemployed labourers there will not be any time "to watch the birds while working". Therefore they have to put more effort on the land and work faster to acquire the same output. With an increase in effort there will be more need for calorie intake. That is to say, the labourers will have to eat more if a number of labourers are removed from the farm, in order to maintain the same output. In fact Nurkse seems to have oversimplified the problem of D.U. when he blames the lack of organization for the persistence of D.U., whereas the cause of the existence and persistence of D.U. lies on high population growth (which has brought pressure on land because of the high percentage of the labour force employed in agriculture) and on the unavailability of alternative jobs, primarily because of capital inefficiency. His idea is quite similar to that of Lewis who also did not address the question regarding the origin of the initial capital needed to start other projects (which Lewis called "capitalist sector")¹⁰⁴. However, Lewis rightly argues that D.U. exists because of overpopulation in agriculture, i.e., when "there are too many persons on too little land" the farmer cannot afford to keep cattle, the land gets no manure, it is over-cropped and fertility is diminished¹⁰⁵. Nurkse confined himself to a theoretical examination of the problem without considering every necessary elements for an effective use of disguisedly unemployed labour. He does not consider the practical difficulties of the problem. As Coale and Hoover

state, unemployment in India is "the result chiefly of an inadequate supply of capital and resources with which labour can work"¹⁰⁶. It is unrealistic to assume that (with such a capital shortage) the fast growing labour force can be absorbed indefinitely in any overpopulated underdeveloped country. With a high fertility and comparatively low mortality a situation has been developed in India where more labourers cannot be engaged on farm. Therefore it resulted in an increase in D.U. in agriculture.

A higher population growth increases its reproductive potential as well as the rate of increase in the labour force (this has been the case with the Indian agricultural population). In this case the actual number of labourers participating in agriculture will increase quickly in a few decades (especially considering that the mortality rate also decreases because of medical advancement which further intensifies the population growth) whereas the output may slightly increase. This, in turn, will decrease the average product per worker and will make worse the already miserable conditions of agricultural labourers. This happens also because of the fact that the increase in land under cultivation is not enough to keep the man/land ratio unchanged.

Mortality has been decreasing in past decades whereas fertility has been either increasing or decreasing slower than the decrease in the mortality rate. Table 2 below reveals this fact.

Table 2
Average annual birth and death rates in India

	Birth per 1000	Death per 1000
1891-1900	45.8	44.4
1901-1910	48.1	42.6
1911-1921	49.2	48.6*
1921-1930	46.4	36.3
1931-1940	45.2	31.2
1941-1950	39.9	27.4
1951-1960	40.0	18.0
1961-1970	41.1	18.9
1981	36.0	14.8

* The period 1918-19 is the period of the "great famine" in India which led to a tremendous loss of population.

Source: Datt R and Sundharam K.P.M, Indian Economy, 1985, P.57

Therefore population growth has shown an upward trend as can be seen from the table. The more rapid growth in the number of dependents resulted in a higher claim on income produced by the working population than would be the case under slower population growth. Table 3 shows the percentage and the number of the "productive" and the "unproductive" consumers¹⁰⁷ in 1961 and 1981 in India.

Table 3
Productive and unproductive consumers in India

Year	Total employed (million)	employment as a % of total population	Total non-working (million)	non working population as a % of total population
1961	183	43.0	256	57.0
1981	220	37.0	464	62.4

Source: Datt R and Sundharam K.P.M, Indian Economy, New Delhi, 1985, P.70

The table above shows that not only the absolute number of the unproductive consumers, but even the proportion of non-productive consumers in the total population has increased from 1961 to 1981. The result of such an increase in population in terms of an increase of

labour supply emerged after 10 to 15 years. As a result of a high population growth of a few decades ago the current number of labourers (and especially the agricultural labourers) has increased rapidly. It is sometimes argued that an increasing burden of dependents as a result of high fertility and decreasing mortality, stimulates the people of working age to work harder and this, in turn, increases the total output. However, this argument focuses only on one side of the matter, i.e. "stimulus to work harder" and on its impact on the total produce. E. Boserup (1981) in his anti-Malthusian thesis of population growth writes: "There is a positive correlation between intensity of food supply system and population density"¹⁰⁸. He argues that gross output per unit of land used for crops and pasture is much higher in more densely populated countries and "output per hectare can be seen to rise with increasing population density"¹⁰⁹. While this point is well taken, it seems that he takes into consideration only the impact of population growth on total output. He does not point out to what extent the increase in population density is accompanied by growth in consumption. Boserup argues that population growth results in the development of rural areas. This is because the higher population growth necessitates a higher demand for the goods and services¹¹⁰. However, he does not address the source of investment (for production of these goods and services), especially in connection with those densely populated countries with a great population base and a high population growth, as well as those countries which are also not very rich in terms of natural resources, such as India. However, in spite of the inadequate discussion of the impact of population pressures on natural resources, Boserup does recognize this difficulty, especially when he writes "Increasing population size may make life easier because there will be more people to share the burden of collective investments, but it may also make life more difficult because the ratio of natural resources to population decreases"¹¹¹.

In contrast, W.A.Lewis points out that high population growth is detrimental to development. In his recent article 'Development Economics in 1950s' Lewis writes: "Rapid population

growth was a blow to development in LDCs in ways that I enumerate, but do not need to elaborate. It aggravated the food problem, already acute in the semi-arid lands. It put stress on the balance of payments. In countries already overpopulated, it reduced the savings potential. It led to rapid urbanization, which is extremely expensive in terms of infrastructure"¹¹².

Let us assume that (other things being equal) there are more job opportunities for the Indian agricultural labourers and peasants, and that they can be more intensively employed doing productive work than they are at present (though this is an unrealistic assumption). Even if they produce more, they consume more as well. This is because of the increase in the number of dependents. In other words if we think that more reproduction means more production (through the stimulating factor as we mentioned above, i.e., the more the dependents, the more the stimulus to work harder), more reproduction also means more consumption. This increase in consumption can more than offset the increase in production. After a few decades, when the dependents join the labour force, they will reproduce dependents at least at the same rate as the increase in the labour force. With this process, income generation does not favorably affect investment. It is true that capital is needed to improve the output. However the arrival of additional children retards the process of capital formation to the extent that it reduces the necessary savings needed to expand production in a backward agricultural economy. It is important to improve the quality of the labour force in order to use it more effectively for a more improved technique. The skill of labourers should be improved, the extent of literacy should be increased, their willingness to change methods and work place should be improved, they have to be more organized and regular. A fast rate of growth of dependents has adverse effects on all of these. Quoting from Coale and Hoover:

"The more rapid increase in number of consumers restrains the rise of total output in several ways:

1. A larger number of consumers tend to increase the fraction of any given national output that is allocated to current consumption, and thus restricts the mobilization of resources for promoting economic growth. It tends to reduce private savings and the ability of the government to raise funds for development.

2. A large number of consumers (especially children) forces the expenditure of savings and tax receipts for purposes that raise national output less, or less immediately, than other uses. More must be spent for primary education, housing, and "social overhead" purposes generally.
3. With smaller per capita consumption due to a larger number of consumers, the labour force would be less productive, partly because of widespread malnutrition and partly because rising consumption is needed to combat apathy and to provide better work incentives".¹¹³

P. Gregory in studying a great number of LDCs (excluding India and China) concluded that the employment conditions in the rural sectors of the countries under his research have deteriorated in 1960-70 decade¹¹⁴. While accepting the fast population growth as a serious problem for employment he writes: "As long as LDC labour forces continue to grow at annual rates in excess of 2%, the creation of an adequate number of employment to absorb this growth will continue to pose an enormous challenge"¹¹⁵.

Sufficient expansion in the cultivated areas, to keep the man/land ratio unchanged, was not a feasible alternative in Indian agriculture, mainly because of capital scarcity. Therefore, with the high population growth, the man/land ratio increased in Indian agriculture. For example the crop land per person decreased from 0.33 in 1951 to 0.22 in 1981¹¹⁶. The scope of bringing more area under cultivation is declining gradually. Its consequence has been a growing pressure of population on land. The number of agricultural labourers has increased from 32 million in 1951 to 65 million in 1981¹¹⁷. This pressure of high population growth on land has resulted in an increase in man/land ratio and increased the number of disguisedly unemployed labourers. Sancheti observed that the high man/land ratio has been the basic cause of considerable disguised unemployment in Indian agriculture¹¹⁸. In 1911 the per capita availability of land for cultivation was 1.1 acre, which fell to almost half of that, at 0.6 acre in 1971¹¹⁹. These figures explain the existence (and in fact increase) of D.U. in Indian agriculture. Therefore population growth resulted in a sub-division (and also, as we discuss here, a fragmentation) of the acreage already under cultivation. The most important reason for such a sub-division has been the traditional attitudes toward inheritance. Hindu laws require that the

entire legacy, including land, be shared equally among the heirs (or at least all the male heirs), though in Muslim laws, the sons generally get either equal or twice the share of the daughters. Therefore the size of the average peasant's holding decreased and land has been divided into plots of inefficient fragments. Peasants also accept the division of holdings into small plots "because it is supposed to provide some protection against the risks of putting all their eggs in one basket"¹²⁰. The effect of population growth in India on the average land holding can be seen from the following data.

In 1970-71 about 51% of the farmers who belonged to the size category of less than one hectare cultivated 9% of the total operational area. The number of these farmers (who are commonly known as "marginal and sub-marginal farmers") rose to 55% (4% increase) in 1976-77 whereas the area under their operation rose to 10.71% (1.7% increase). Therefore the proportion of cultivators with less than one hectare increased much more than the area operated by them. Out of 71.01 million total operational holdings, 36.2 million belonged to this size category in 1970-71. In 1976-77 the number of total holdings increased to 81.52 million out of which 44.53 million belonged to this size category¹²¹. These data reveal not only the very small and inefficient average size of holdings of this category but also their worsening condition from 1970-71 to 1976-77. As a matter of fact, this category is undoubtedly the most responsible for the existence of D.U. in Indian agriculture. Their average size of holdings of 0.40 in 1970-71 shows their meager condition. This figure has further decreased to 0.39 in 1976-77¹²².

The second group which is also responsible for the existence of D.U. is the group which belongs to "small and semi-medium holdings" consisting of actual holdings in the range of 1 to 4 hectares. 24.1 million holdings (34% of total holdings) were cultivated by this group in 1970-71. They accounted for 49 million hectares (30% of total operational holdings). In 1976-77 the number of holdings in this group increased to 26.3 million (32% of total hold-

ings). They accounted for 53 million hectares (32% of total area)¹²³. Table 4 shows the conditions of the operational holdings in Indian agriculture.

Table 4
Number and area of operational holdings in India

	Number in million		Area million ha		% variation during	
	70-71	76-77	70-71	76-77	70-71	t0 76-77
					Number	area operated
marginal (below 1 ha)	36.2 (50.9)	44.53 (44.6)	14.56 (9.0)	17.50 (10.7)	23.0	20.2
small (1 to 2ha)	13.43 (18.9)	14.70 (18.0)	19.28 (11.9)	20.88 (12.8)	9.5	8.2
semi-medium (2 to 4 ha)	10.68 (15.0)	11.64 (14.3)	30.0 (18.5)	32.36 (19.9)	9.0	7.9
medium (4 to 10 ha)	7.93 (11.2)	8.21 (10.1)	48.23 (29.7)	49.60 (30.4)	3.5	2.8
large (10 ha & above)	2.77 (4.0)	2.44 (3.0)	50.06 (30.9)	42.82 (26.2)	-11.9	-14.5
Total	71.01 (100.0)	81.52 (100.0)	162.13 (100.0)	163.14 (100.0)	14.8	0.6

Figures in brackets are percentage of total.

Source: compiled from "Agricultural Situation in India", Government of India, Oct. 1981; Datt R and Sundharam K.P.M, Indian Economy, New Delhi, 1985, P.418

The following table shows the average size of holdings in Indian agriculture:

Table 5
Average size of holdings in different categories
in Indian agriculture

Size Category	Average size (ha)		% decrease in 1970-71 to 1976-77
	70-71	76-77	
marginal	0.40	0.39	2.50
small	1.44	1.42	1.39
semi-medium	2.81	2.78	1.07
medium	6.08	6.04	0.66
large	18.09	17.53	3.10
total	2.30	2.00	13.04

Source: Datt R and Sundharam K.P.M, Indian Economy, New Delhi, 1985, P.418

From the table it can be seen that the overall average of holdings declined from 2.30 hectares in 1970-71 to 2.0 hectares in 1976-77. There has also been a decline in average size of holdings of various size classes. This indicates the effect of population growth which has resulted in an increase in the number of operational holdings.

Datt and Sundharam sum up the reasons for the small size of holdings as follows:

(i) population growth: the size of holding diminishes with increase in population which results in the progressive subdivision of land.

(ii) the law of inheritance: according to the Hindu and Muslim "laws of succession", all sons (and mostly daughters too) are entitled to an equal share of the ancestral property. Therefore the land is divided and sub-divided with every generation.

(iii) the decline of the joint family system: under this system a number of "natural families" live together; hold the land in common, manage the operational holdings together and share the produce. Under the impact of industrialization, and growth of towns, and because of the spreading of individualism brought by Western culture, the joint family system has broken down to a large extent. This has led to further division of land holdings.

(iv) *the decline of handicrafts: this is a historical factor responsible for the sub-division of land and started from the British Period (1757-1947). The competition from machine-made goods had an adverse effect on handicrafts and village industries. The village artisans were forced to fall back on agriculture which resulted in agricultural land being shared by a larger proportion of population*¹²⁴.

*The holdings are not only small in most of the cases, but also fragmented. They are found in tiny plots scattered all over the village. Each holding is comprised of many small pieces in different parts of the village community. This fragmentation is explained by "the sub-division of property among joint owners, each of whom wants a share in each quality of the ancestral land"*¹²⁵.

*As a result of sub-division and fragmentation there is inefficiency in the organization of land holdings; the cost of production is higher compared to the larger and more consolidated holdings. This affects the capital formation which is one of the most important factors in providing alternative employment opportunities and leading to the decline of D.U. Quoting from Datt and Sundharam "increase in the number of ownership holdings is basically due to population increase in the cultivating households and lack of alternative employment opportunities in the rural areas"*¹²⁶. *The average area owned per family of the different categories are shown below, (table 6).*

Table 6
Estimated average area owned by different size groups
of holdings in Indian agriculture

	<u>1953-54</u> average area (acres)	<u>1961-62</u> average area (acres)	<u>1971-72</u> average area (acres)
Families holding below 1 acre	0.3	0.2	0.1
Families holding 1-5 acres	2.6	2.6	2.6
Families holding 5-15 acres	8.5	8.4	8.3
Families holding 15-50 acres	24.8	24.2	23.9
Families holding above 50 acres	88.7	80.9	73.9
Total	6.3	5	3.8

Source: Datt R and Sundharam K.P.M, Indian Economy, New Delhi, 1985, P.428

Note: the whole table is not reproduced here.

The average area¹²⁷ has been decreasing in almost all the groups, as well as in the overall average (6.3 acres in 1953-54, 5 acres in 1961-62 and 3.8 acres in 1971-72). This indicates the pressure of population on agricultural land which has been the prime cause for the existence of D.U. in Indian agriculture.

To analyse the reasons of D.U. in Indian agriculture, it is also important to consider the size of population in agriculture and the percentage of population that depends on agriculture. With a population of nearly 780 million (figure is for the year 1987), an increase of even 1% in population would mean 7.8 million of annual increment in Indian population. This means that the amount of population depending on agriculture increases by 5.46 million every year (about 70 per cent of the population depends on agriculture in India). Even if we, unrealistically, assume that the entire agricultural land in India is divided equally among the agricultural workers or families (whereas we already pointed out that some plots are much more labour-intensive than others) the sufficient extension of agricultural land cannot take place to absorb such a tremendous increase in labour force. However, being more realistic, we should think of a, comparatively, heavier burden resulting from such a population growth on the families

with smaller plots. Neither are there sufficient alternative occupations in rural life to engage this vast labour supply. This is how D.U. persists and grows in Indian agriculture.

It is easy to see that the rapid growth in population, through an increase in labour force, has been one of the most contributory factors of the increase in D.U. in Indian agriculture. On the basis of 1980-85 data Sancheti writes "with an increase of about 2.5% in population the increase in work force is nearly of the same magnitude. With a work force of about 200 million persons, the annual increase in it comes to around 55 lakh persons"¹²⁸. Therefore, there must be an increase in employment opportunities of this size. However, it has been almost impossible to render this difficult task. He continues that:

"In the total labour force to about 220 millions only about 23.5 million or 11% are in the organised sectors comprising 16 million in the Government and the remaining 7.5 million in private industry. Therefore, even with 3.5% increase in employment opportunities in the public sector and about 1.5% in the private sector, the absorption in the organised sectors cannot be more than 7 lakh persons which is equal to 13% of the addition to the labour force. Therefore, nearly 87% of the job opportunities have to be generated in the unorganised sectors comprising agriculture, household industries, etc. Since this has not been possible, the increase in population must be checked because the job opportunities for about 5.5 million additions to work force cannot be created every year on a continuing basis"¹²⁹.

However, the story does not end here. The absolute number of increase in population is in the form of a geometrical progression with an (almost) unchanged annual percentage increase. Therefore the employment opportunities also should increase annually in a geometrically progressive fashion which is still a more difficult task. The following tables (7 and 8) explain the extent of population growth in India from 1901 to 1981 as well as the population growth in rural areas from 1971 to 1983.

Table 7
Population trends in India from 1901 to 1981

Census year	(000's) Persons	Population (000's)		Decadal variation (percent)
		Males	Females	
1901	238,396,000	120,791,000	117,359,000	
1911	252,093,000	128,385,000	123,708,000	5.75
1921	251,321,000	128,546,000	122,774,000	-0.31
1931	278,977,000	142,930,000	135,789,000	11.00
1941	318,661,000	163,685,000	154,690,000	14.22
1951	361,088,000	185,528,000	175,560,000	13.31
1961	439,235,000	286,293,000	212,942,000	21.51
1971	548,160,000	284,049,000	264,110,000	24.80
1981	685,185,000	354,398,000	330,787,000	25.00

Source: Census of India 1981, Series-1 India, paper 2 of 1983, key Population Statistics Based on 5 Per cent Sample, Registrar General & Census Commissioner, India, New Delhi, 1983, pp.4 and 6; Handbook on Social Welfare Statistics, Government of India, Ministry of Welfare, 1986, P.3

Table 8
Birth, death and natural growth rates in rural India
from 1971 to 1983

Year	Rate per 1,000 persons per annum		
	Crude Birth rate	Crude Death rate	Natural Growth rate
1971	38.9	16.4	22.5
1972	38.4	18.9	19.5
1973	35.9	17.0	18.9
1974	35.9	15.9	20.0
1975	36.7	17.3	19.4
1976	35.8	16.3	19.5
1977	34.3	16.0	18.3
1978	34.7	15.3	19.4
1979	35.1	14.1	21.0
1980	35.1	13.7	21.4
1981	35.6	13.7	21.9
1982	35.5	13.1	22.4
1983	35.3	13.1	22.2

Source: (i) Sample Registration System 1983, Vital Statistics Division, Office of the Registrar General, India, Ministry of Home Affairs, Government of India, New Delhi, 1986 pp 19 and 39

(ii) Sample Registration Bulletin Vol XVIII NO. 2, December, 1984, Registrar General, India, Ministry of Home Affairs, Government of India, New Delhi, 1986, PP 2-3; Handbook on Social Welfare Statistics, Government of India, Ministry of Welfare, 1986, P.18

As the table shows, the rate of growth of population and in particular the rural population has been increasing in almost all consecutive decades. Increase in output is important from the point of view of investment. The lack of capital has been the principal cause of the unavailability of sufficient alternative employment opportunities in Indian villages. The higher the population growth in India, the lower will be the investment opportunities and the less will be the alternative employment. Therefore the more will be the extent of D.U.

Since the agricultural labourers constitute the highest percentage of the total labour force in India, the burden of such an increase in the Indian labour force falls on the shoulders of

the agricultural labourers and the agricultural land. The result is an increase in D.U. because the cultivable land and its marginal increment cannot ease the problem on a considerable scale. The available area under cultivation increased only marginally through reclamation of fallow land¹³⁰. This increase has not been enough for even keeping the D.U. unchanged.

The rapid population growth, particularly since 1951, has made a large addition to labour force. How much of the evil of D.U. can be ascribed to this factor depends upon the rate of growth of job opportunities in especially the rural areas. A.N. Agrawal asserts that the average rate of population growth has been greater than the rate of job creation from 1951¹³¹. This means that the number of unemployed and underemployed labourers (which is comparatively much more than unemployed labourers) increased in recent decades. Since underemployment mostly takes the form of D.U. in agriculture, it means that the pressure of abundant labourers has been mostly on D.U.

Any size in population over a large absolute base as in India, implies a large absolute number. This means large additional expenditure on their bringing up, maintenance and so on. This calls for more resources to be used in private consumption, such as food, clothing, etc., and public expenditures on such elements as drinking water, electricity, educational and medical facilities. As a result, opportunities for the generation of new jobs cannot keep pace with the incremental increase in the labour force on account of capital scarcity.

The lack of alternative employment opportunities is another important reason for the existence of D.U. in Indian agriculture. Villages are backward in India; services such as transportation, electrification, medical and school services, construction and so on, are insufficient to absorb excess labourers. Small scale and cottage industries which have to occupy important positions regarding labour absorption in an agrarian economy are not enough. These industries which are labour intensive and generate a comparatively larger volume of employment in

a "labour-abundant and capital-scarce economy"¹³² do not engage a considerable part of labourers in Indian villages. The following table reveals this fact. It shows that with an average annual increase of above 2 percent in population only about .2 percent (that is 1/10th of the increase in population) was absorbed by these industries from 1980 to 1985. In 1985 when the population of India was over 700 million, according to the table below (table 9), only 31.5 million were engaged in these industries.

Table 9
Employment coverage in village and small industry sector
in India from 1979-80 to 1989-90

Sl. Industry No.	Employment coverage (millions)		
	1979-80	1984-85	1989-90
A. Traditional Industries			
1 Khadi	1.12	1.458	2.00
2 Village Industries	1.613	2.241	3.00
3 Handlooms	6.15	7.466	9.813
4 Sericulture	1.60	2.00	2.425
5 Handicrafts	2.03	2.74	3.58
6 Coir	0.559	0.59	0.923
B. Modern Industries			
7 Small Scale Industries	6.70	9.00	11.90
8 Powerlooms	1.10	3.219	3.532
C. Others	2.50	2.786	2.827
TOTAL	23.372	31.50	40.00

Source: Based on Seventh Five Year Plan 1985-90, Vol. II, Planning Commission, Government of India, New Delhi, 1985, pp 99 & 103; Handbook on Social Welfare Statistics, Government of India, Ministry of Welfare, P.69

The table shows that traditional industries generated employment for about 13 million labourers during 1979-80, 16.4 million during 1984-85 and are supposed to generate employment for about 22 million during 1989-90. With a quick look at the table 7, we can observe

that the volume of employment generation by these industries is too small to be effective in decreasing the extent of D.U. in Indian agriculture.

These industries are more labour intensive. It is true that the labour-intensive methods of production reduce the amount of unemployment and underemployment. However, India's problem is the lack of sufficient capital within the rural sector. According to Eckaus "even the most labour-intensive techniques require some minimum amount of capital per unit of labour, but many developing nations lack even this minimum amount of capital"¹³³.

In India, often small-scale industries are supplied with inferior quality of raw materials and at high prices because of the existing competition with the larger industries; they are not financed sufficiently by banks which provide loans to industries (because of the lack of effective relationship with the bankers); their methods of production are too old (because of the lack of capital and the illiteracy and ignorance of village craftsmen). The small producers face problems regarding marketing of their produce. Because of the inadequate facilities of transportation and the lack of finance they have to sell their products inside the villages and to the money-lenders at cheaper prices. Besides, because of the competition with the large-scale industries, they cannot get a favourable price for their products¹³⁴. These difficulties along with others, such as the lack of the government cooperation, discourages the increase of small-scale and cottage industries. The lack of sufficient cooperation on the part of the government can be seen from the share of cottage and small-scale industries in public sector outlay in its development plans in table 10.

Table 10
Percentage shares of cottage and small-scale industries
in public sector outlay in 5-year plans in India

	Ist plan	IIInd	IIIrd plans	annual	IVth	Vth	VIth
	51-56	56-61	61-66	66-69	69-74	74-79	80-85
Share of Cottage and small-scale industries as a percentage of plan outlay	2%	4%	3%	2%	not avail.	1.3%	1.8%

Source: Datt R and Sundharam K.P.M, Indian Economy, New Delhi, 1985, pp 184-189, 219

Creation of employment opportunities in household and village industries could have been an alternative to reduce the number of underemployed labourers in agriculture. The above table shows that the government promoted a "scaling down" of cottage and small-scale industries. This sector has thus failed to expand enough on account of the capital scarcity.

Capital is the most important input factor in employing excess labourers. The amount of the capital necessary to create employment for the underemployed labourers increases with an increase in the number of underemployed workers (even if the aim is to keep the number of underemployed labourers unchanged). Capital scarcity in India does not permit this important task to be rendered. Moreover, the creation of employment for the excess labourers becomes more difficult when they are lacking adequate knowledge and skills of work. It becomes even harder when they are "illiterate, ignorant, superstitious, conservative and bound by outmoded customs"¹³⁵. The following tables (11, 12 and 13) show the extent of illiteracy in India

Table 11
Literacy rate per 1,000 by sex in India

Year	Males	Females	Persons
1901	98	6	53
1911	106	11	59
1921	122	18	72
1931	156	29	95
1941	249	73	161
1951	249	79	167
1961	344	130	240
1971	395	187	294
1981	469	248	362

Source: Handbook on Social Welfare Statistics, Govt. of India, Ministry of Welfare, New Delhi, 1986, p.11

Table 12
Literacy rates for those aged above 10 years by sex
in rural India in 1971 and 1981

1971			1981		
Person	Male	Female	Person	Male	Female
29.88	43.18	15.81	35.84	50.08	20.86

Source: Census of India, 1981, Series 1, India, paper 2 of 1983, Key Population Statistics Based on 5 per cent Sample Data, Registrar General & Census Commissioner, India, New Delhi, 1983, pp.17-18; Handbook on Social Welfare Statistics, Government of India, Ministry of Welfare, P.42

Table 13
Literacy rates by age and sex in rural India in 1971 and 1981

Age group (in years)	1971			1981		
	Males	Females	Persons	Males	Females	Persons
5-9	22.76	13.54	18.29	30.09	19.63	25.03
10-14	54.89	29.83	43.16	62.42	36.44	50.16
15-19	57.41	28.31	43.67	60.36	33.66	43.67
20-24	53.17	20.03	36.10	59.53	27.16	43.11
25-34	42.74	12.47	27.29	53.06	19.64	36.25
35 and above	31.23	6.47	19.40	37.96	8.62	23.17
Total (all ages)	33.76	13.08	23.69	40.79	17.96	29.65

Source: Census of India, 1981, Series-1, India, Part-II Special, Reports and Tables Based on 5 per cent Sample Data, Registrar General & Census Commissioner for India, New Delhi, 1983, p. 78 (Report); Handbook on Social Welfare Statistics, Government of India, Ministry of Welfare, P.41

It is evident from the above tables that the extent of illiteracy is quite high in rural areas as well as in the country as a whole.

The existence of alternative employment in villages has a two-fold importance in decreasing the burden of D.U. in Indian agriculture. First, it absorbs labourers and engages them in more productive work, therefore decreasing the number of disguisedly unemployed labourers. Secondly, by more fruitful work it can generate capital which, if not sufficient enough to be invested, will at least, be enough to support the workers of this sector.

The alternative employment opportunities in the villages can be broadly categorized under two headings:

1) Public works such as rural electrification, road extension, rural construction and other public enterprises;

2) Cottage industries and handicrafts. This category is further divided into three sections by S. N. Bhattacharya as follows:

a) village industries such as oil extraction, leather and footwear, pottery, hand-made paper, hand woven cloth, etc.

b) handicrafts and artistic goods such as carpet weaving, batik painting, brass engraving, gold-smitty, ivory carving, wood carving, metal craft, jewellery, etc.

c) construction and services such as masonry, carpentry, blacksmithy, tailoring, etc¹³⁶.

Whereas the insufficiency of the public works has been because of the lack of adequate funds which has to be provided by the government, the reasons for the inadequacy of cottage industries and handicrafts are categorized by S. N. Bhattacharya as follows:

1) Elementary tools of production and the consequent low productivity which results in very little surplus. This surplus is almost all consumed by the artisans' family and there does not remain any considerable surplus for re-investment.

2) Severe competition from the organized and large consumer-goods industries which have resulted in the loss of consumers for the rural artisans¹³⁷.

3) Lack of proper financial institutions to provide loans for the village artisans.

Though we are not historically assessing the existence of D.U., it is imperative to mention that the British conquest of India (1757-1947) which did not leave any alternative occupation which used to exist before British rule in Indian villages, is another reason for the intensification of D.U. By these occupations we mean the handicrafts and small-scale industries. These occupations were ruined because of the heavy competition with British machine-made prod-

ucts. Therefore, the pressure of population on land increased and consequently D.U. has also widened¹³⁸.

Since the employment opportunities outside agriculture depend on available resources, the demand for labourers is limited due to the lack of sufficient resources for creating alternative job opportunities. Therefore D.U. is persistent in Indian agriculture and will remain so until the alternative employment opportunities can be created. We wish to close this part of the paper with a quotation from the United Nations which summarizes our own position on the question:

"Under-employment is due to a deficiency of the resources which are necessary to employ productively the available supply of labour. It is usually associated with family employment where, in agriculture or industry, the unit of production and of the supply of labour is the family; it exists because the resources of the family are too small to keep all working members of the family fully employed throughout the year and because there exists no opportunities for directing a part of the supply away into the other occupations at appropriate times"¹³⁹.

V.SUMMARY AND CONCLUSION

Underutilization of the labour force is a severe problem in Indian agriculture. Economic development in India should be understood primarily as a process of attaining high levels of employment accompanied by a rising productivity of labour. This should imply, therefore, that a growing proportion of the work force will be able to work more fully and intensively in contributing to the economic development process. In this paper we tried to show the causes of such an underutilization of the labour force in Indian agriculture.

The present paper makes no claim that our approach provides the only possible analysis of disguised unemployment in Indian agriculture or even that it provides the most important. Nevertheless the following conclusions are likely to be valid:

1- There is disguised unemployment in Indian agriculture.

2- The marginal productivity of labour, however not exactly measurable, determines the extent of disguised unemployment (which itself is not accurately, measurable).

3- Rapid population growth is a very important reason for the existence of disguised unemployment in the rural economy. In support of the traditional views held by W.A. Lewis (1979, 1984), therefore, disguised unemployment can be reduced significantly by checking population growth¹⁴⁰.

At this moment, it will be useful to summarize our discussion of disguised unemployment. We started with the definition of disguised unemployment which has been given by a number of distinguished economists, in a chronological order and pointed out some of the differences in the ideas of these economic analysts. In particular, we used the definition given by a group of prominent Indian economists who affirm that disguised unemployment in the context of Indian agriculture is defined as the amount of surplus labour which can be syphoned off the

agricultural sector without adversely affecting its output (other things being equal). In this paper, in spite of the controversies surrounding the concept of zero marginal productivity of labour, we accepted it as a useful barometer for indicating the existence of disguised unemployment in Indian agriculture. The reader may also take note from our previous discussion in section II that the notion of 'disguised unemployment' applies to the 'number of labourers' rather than to 'the number of hours of labour' in this analysis.

The discussion about zero marginal productivity of labour has been presented in a chronological order. We have critically examined the validity of the different arguments about the existence of zero marginal productivity of labour in brief and presented a number of empirical studies regarding the extent of disguised unemployment. We have critically discussed some of the empirical studies and concluded that none of them has succeeded in presenting an accurate statistical data measuring the extent of disguised unemployment. We have also concluded that none of these various methods has been successful in testing its validity because of the imperfections of the theories and the lack of adequate information about the different input factors.

In discussing the factors, that have contributed to the existence of disguised unemployment in Indian agriculture, we stated that the high population growth and the lack of alternative employment opportunities in the villages are by far the most important. We presented data for the land distribution and the population growth and argued that the increase in population could not be fully absorbed by the land. We furthermore showed that the average availability of land per family decreased during the recent decades and the land got sub-divided and fragmented by an increase in population. This has resulted in a further increase in the number of disguisedly unemployed labourers.

It has been explained that the lack of capital and the inefficiency of planning caused an insufficiency in the creation of alternative employment in the villages. We also enumerated the other causes for the lack of alternative employment, i.e. the lack of capital projects in the rural areas, insufficiency of small-scale and cottage industries and the decline of Indian handicrafts. The ideas of some of the economists regarding the reasons for the existence of disguised unemployment have also been critically evaluated.

While having attained the stated goals of reviewing the literature on disguised unemployment, needless to say, our research has far from exhausted the possibilities of further analysis, especially in providing a more refined analytical framework that could give rise to an operational concept of disguised unemployment useful for empirical work. Moreover, the subject matter could also be tackled along different lines. For example, in discussing the reasons for disguised unemployment we mentioned population growth as one of the most important causes for the existence of disguised unemployment. Although we still believe that the increase in population has played an important role in this regard, we could also state that the causes for such a growth in population are responsible for the existence of disguised unemployment. In other words, we could argue that the high birth rate and the declining death rate have been the two important causes of disguised unemployment in Indian agriculture. We could also go further and explain the reasons for the high birth rate, namely poverty of the people, ignorance and lack of sufficient birth control devices, India's tropical climate and so on, and explain each point in detail. We could further enumerate the reasons for the decline in the death rate, i.e., the improvement in the implementation of the schemes of agricultural development; increase in the efficiency of relief administration; extension of transport facilities; import of foodgrains; improvement in the availability of medical facilities, and public health services; a safe drinking water and a number of other welfare increasing measures, and discuss all these reasons in more depth. However, given the goals stated at the beginning of this paper, these possible extensions of the analysis fall largely outside of the scope of the existing paper.

An alternative path to that concerning population growth could also have been followed. In particular, we could argue that Indian agriculture suffers from a chronic disguised unemployment because the country as a whole is underdeveloped. Inadequate agricultural surplus has been a factor in restricting the overall growth of employment in the economy. One may go further and argue that such underdevelopment has a political cause. In other words, as some may argue, colonialism was responsible for the lack of development in India. The transfer of economic surplus by the government of British India, which is known as "economic drain"¹⁴¹ in Indian economic literature, is regarded as an important cause for underdevelopment in India. Quoting from Jawaharlal Nehru: "Indeed some kind of chart might be drawn up to indicate the close connection between length of British rule and progressive growth of poverty. That rule began with outright plunder, and a land revenue system which extracted the outermost farthing not only from the living but also from the dead cultivators. It was pure loot"¹⁴².

Some may say that such an unemployment has an economic cause. There has been a misdirecting of investment in the Indian economy; large amounts of capital were invested in unproductive schemes such as huge buildings or simply hoarded in the form of cash or jewellery.

It can also be argued that the lack of rapid economic development in pre-independence India was, to a large extent, due to the absence of an entrepreneurial class, willing to start new business and to take risks. This was because of the strong patronage of the British government for the British capital in India which made the competition almost impossible for the Indian middle class. Some of the institutional deficiencies, such as the insufficiency of a banking system, industrial finance corporations, insurance companies and so on, were also responsible for such an underdevelopment

Another important reason that some may point out as the cause of such as underdevelopment can be social factors. The joint family system, the caste system, the superstitious beliefs, the widespread religious practices and many other social factors can also be responsible for such an underdevelopment.

Low per capita income and the low rate of economic growth; the high proportion of people below the poverty line; the low level of productive efficiency; inadequacy in nutrition; imbalance between population size, resources and capital; unemployment and underemployment itself; instability and uncertainty of output in agriculture; imbalance in distribution and growing inequalities; and many other reasons together can account for the existence of disguised unemployment. However all these problems stem from one main problem, that is "underdevelopment". In considering these problems we conclude that, there exists a simultaneous causality in which "underdevelopment" causes "disguised unemployment" and, at the same time, feeds back on "underdevelopment".

One of the points which needs to be further elaborated regarding the reasons for disguised unemployment is the assertion by Joan Robinson, who was a pioneer in introducing the term "disguised unemployment" in the economic literature. As we said before, she pointed out the problem of insufficiency of effective demand in introducing the cause of this phenomenon in 1936. Although we did not explicitly mention the notion of effective demand in discussing the reasons for disguised unemployment in our paper, we pointed out that the lack of capital has been a retarding factor for decreasing the extent of disguised unemployment. This means that to a certain degree, the insufficiency of demand for labour has also been responsible for the existence and persistence of disguised unemployment. However we contend that disguised unemployment has much more to do with the supply side of labour than with demand. Indeed, as Lewis (1979) has pointed out, the growth of employment through an expansion of the modern (industrial) sector of the economy is not always beneficial to the traditional rural

sector¹⁴³. Even if the demand for labourers increases, the supply side cannot react favourably because the Indian labourers do not have the proper skills and preparedness to move quickly.

A similar concept to that of Robinson arises from Mellor's work on disguised unemployment. He argues that because of "tradition-bond consumption pattern", the labourers in under-developed countries work to achieve their traditionally determined minimum standard of living and there is no motivation to increase their income¹⁴⁴.

Due to the limitations of the length of the paper, no attempt was made to further expand the research in certain areas. However, among the areas which might form the basis of future research is in developing an operational concept of disguised unemployment relating to the notion of the 'Zero Marginal Product of Labour'. Though the zero marginal productivity of labour is at the heart of the idea of disguised unemployment, current literature is distinctly lacking in formulating a meaningful concept (of zero MPL) that can be used to prove, with the help of statistical data, the existence of disguised unemployment. Many of the structural weaknesses of the existing literature are the result of the incapacity of development economists to deal with the obvious gaps in the theoretical and empirical treatment of disguised unemployment, in developing economics. Hopefully, future research will be able to "operationalize" these concepts so as ultimately to render them more useful for policy decisions.

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 49. Turnham D, *op. cit.* , p.65
 50. *Ibid.* , p.66
 51. Koutsoyiannis A, *Modern Microeconomics* , Macmillan Press, 1979, pp.71-72
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 58. see also Kaldor N, *Essays on Economic Stability and Growth* , Gerald Duckworth & Co., London, 1960, p.241
 59. The labour which does not contribute to production.
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 66. Georgescu-Roegen, "Economic Theory and Agrarian Economics", Oxford Economic Papers , vol. 12, (Feb. 1960), p.13
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 69. Wonnacott P, op. cit. , p.280
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 71. Myrdal G, op. cit. , pp.2052-2053
 72. He uses this term interchangeably for D.U.
 73. Myrdal G, op. cit. , p.1011. Myrdal asserts that the idle hours could be used for going to school or for acquiring skills (Myrdal, p.1011). However he does not pay attention to the fact that there are not enough schools in (particularly Indian) villages to enable the rural people to study. Nor are there enough facilities to improve the skills of the labourers.
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 81. Ibid. , pp.154-161

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83. *Schultz T.W, "Significance of India's 1918-19 Losses of Agricultural Labour - a Reply", Economic Journal , vol. 77, (1967), pp.161-63*
84. *For a fuller discussion of their approach and result refer to Oshima H.T, "The Ranis-Fei Model of Economic Development; comment", American Economic Review , vol. 53, (June 1963), p.450*
85. *Rosenstein-Rodan, op. cit. , pp.1-7; also in Eicher-Witt, op. cit. , pp.138-139*
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87. *Mehra S, "Surplus Labour In Indian Agriculture", The Indian Economic Review , vol.1, (April 1966), p.122*
88. *Ibid. , p.115*
89. *Ibid. , p.112*
90. *Gillis M, Perkins D.H, Roemer M and Snodgrass D.R, Economics of Development , W.W. Norton Company, 1983, p.187*
91. *Mukhoti B, op. cit. , p.157*
92. *Turnham D, op. cit. , p.18*
93. *Ibid. , p.69*
94. *Gillis M, et al, op. cit. , p.188*
95. *Gregory P, "An Assessment of Changes in Employment Conditions in Less Developed Countries", Economic Development and Cultural Change , vol.28, (july 1980), P.677*
96. *Datt R, et al, op. cit. , p.82*
97. *Datt R, et al, op. cit. , p.82-84*
98. *Ibid. , p.85*
99. *Myrdal G, op. cit. , p.2066*
100. *Nurkse R, Problems of Capital Formation in Underdeveloped Countries , Oxford University Press, New York, 1955, p.37*
101. *Ibid. , p.37*
102. *Ibid. , pp.37-38*

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103. *Ibid.* , p.38; Lewis presented a similar idea in his article mentioned in footnote 23. However, he revised this idea by considering the fact that labour is not a costless input; he has to be paid if he works in capitalist (modern) sector. He argues that this transfer of labour may bring inflation. See W.A. Lewis, "The Dual Economy Revisited", The Manchester School , (Sept 1979), pp.134-35
 104. Lewis W.A, *op. cit.* , Eicher-Witt, *op. cit.* , p.133
 105. Lewis W.A, *op. cit.* , p.141-142
 106. Coale A.J & Hoover E.M, Population Growth and Economic Development in Low-income Countries , Princeton University Press, 1958, p.288
 107. Unproductive consumers are defined as "children, old persons and a part of the population in the age group 15-59 which does not seek employment", Datt R, et al, *op. cit.* , p.70
 108. Boserup E, Population and Technological Change , The University of Chicago Press, 1981, P.15
 109. *Ibid.* , P.26
 110. *Ibid.* , P.200
 111. *Ibid.* , P.5
 112. Lewis W.A, "Development Economics in 1950s", Meier G.M and Seers D, Pioneers in Development , Oxford University Press, 1984, P.133
 113. Coale A.J, et al, *op. cit.* , pp.285-86
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 115. *Ibid.* , P.700
 116. Sancheti D.S, *op. cit.* , p.171
 117. *Ibid.* , p.171
 118. *Ibid.* , p.212
 119. Agrawal A.N, *op. cit.* , p.94
 120. Myrdal G, *op. cit.* , pp.1048-49
 121. Datt R, et al, *op. cit.* , p.417
 122. *Ibid.* , p.418
 123. *Ibid.* , p.418
 124. *Ibid.* , p.420

125. *Ibid.* , p.420

126. *Ibid.* , p.429

127. *The average area is defined as:*

$$\text{average area} = \frac{\text{Total area which is owned by a group}}{\text{Total number of households of the same group}}$$

128. *One lakh is equal to 100,000*

129. *Sancheti D.C, op. cit.* , pp.111-112

130. *Ibid.* , p.258

131. *Agrawal A.N, op. cit.* , p.123

132. *Ibid.* , p.408

133. *Mukhoti B, op. cit.* , p.155

134. *Agrawal A.N, op. cit.* , pp.414-415

135. *Bhattacharya S.N, Rural Development in India and other Developing Countries* , Delhi, 1983, p.264

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138. *Datt R, et al, op. cit.* , pp.17-18

139. *U.N, Measures for the Economic Development of Underdeveloped Countries* , p.8, cf. *India, Government of, Planning Commission, the First Five-year plan - A Draft Outline*, New Delhi, 1951, p.19: "Corresponding to idle labour there are no adequate supplies of other cooperating factors of production, such as land and capital equipment", *Myrdal G, op. cit.* , p.2048.

140. *Lewis W.A, "The Dual Economy Revisited"*, *The Manchester School* , (Sept 1979), P.221; also in *Lewis W.A, "Development Economics in 1950s"*, *op. cit.* , P.133

141. *Datt R, et al, op. cit.* , p.10

142. *Ibid.* , p.15

143. *Lewis W.A, "The Dual Economy Revisited"*, *op. cit.* , P.212

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