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DISGUISED UNEMPLOYMENT—AN OVER-ALL REVIEW

I. *Introduction*

1. *Problem of surplus labour*

LABOUR has been an abundant factor of production available in most of the underdeveloped countries for a long time. Problems associated with the abundance of this factor have been recognized often and in varying degrees. A full recognition of the specific problems of surplus labour particularly in the agrarian sector of the underdeveloped countries, however, was not experienced in formal economic investigation until the late 1920s. Of great significance in the 1930s was the world-wide economic depression which confronted economists with problems of economic adjustment in most of the industrially advanced countries. In line with this, a consciousness of, and an interest in, the causes and effects of overabundant labour force in any sector of the economy arose among economists. Since then, a great deal of recurring but controversial literature, theoretical as well as empirical, has appeared which now occupies a substantial position in overall theories of economic development.

2. *Disguised unemployment as an explanation of the problem of surplus labour*

One of the most significant segments of this recurring literature on the abundance of the labour force and the problems associated therewith is what in 1937 Mrs. Joan Robinson termed 'disguised unemployment'. Ever since, disguised unemployment has become a fundamental concept in development literature and though many economists have already contributed on this topic in a theoretical context, it still remains extremely controversial in its empirical validity. For example, Rosenstein-Rodan (1943), Nurkse (1953), Lewis (1964), and Fei and Ranis (1964) have assigned to it an important role in interpreting economic underdevelopment of the developing countries and suggested the means for promoting the economic growth through public policy. Some of the few empirical investigations into the nature and significance of disguised unemployment do—and some do not—support the *a priori* theoretical assumption regarding the existence of

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disguised unemployment. For instance, according to Kao, Anschell, and Eicher (1964) the existence of more than 5 per cent token disguised unemployment in underdeveloped agricultural countries cannot be proved by empirical evidence. On the other hand, two recent and carefully analysed empirical studies pertaining to South Korea and East Pakistan by Cho (1963) and W. Robinson (1969) respectively, find a considerable amount of surplus labour.

Warren Robinson's estimate of surplus labour in East Pakistan, though referring to 1961, stands at 20 per cent of agricultural labour. Mathur (1964) in the adjoining province of West Bengal in India, estimated disguised unemployment at about 33 per cent among the agricultural labour force.

3. *Some definitional interpretations of the term disguised unemployment*

(*a*) *Original concept under the assumption of* Ceteris paribus

The term 'disguised unemployment' as coined by Mrs. Joan Robinson (1937) in her *Essays in the Theory of Employment* was in the context of cyclical unemployment in a developed economy. She confined the use of this phrase to a situation arising out of a 'decline in the effective demand' which does not lead to unemployment in the sense of complete idleness, but rather drives workers into a number of occupations of inferior status (with lower marginal productivity). In this original form, this concept implied a low rather than a zero marginal productivity. In its competitive interpretation, however, the net addition to the total output might remain zero, if the employment of one group of workers leads to an equivalent reduction in employment of the other group. Implicitly, the crucial point of connotation can be traced out here referring to the differential productivity of labour employed in the inferior occupations and in the regular jobs and not only to the marginal productivity of labour working in inferior occupations. It is this difference in productivity which supposedly accounts for the so-called disguised unemployment as developed by Mrs. Robinson. The main assumption here is that the productive equipment—both capital and technology—is fixed, making this concept intrinsically static.

Mrs. Robinson's concept of disguised unemployment was taken up later in analytical terms by many economists who tried to establish that the concept in its real sense applied more to the underdeveloped economies with agriculture as the primary sector. In economically

advanced countries it was assumed that 'open unemployment' was more prominent than disguised unemployment. Among those who held this contention, Doreen Warriner (1939) and Lewis (1964), and Theodore W. Schultz (1964) and Gadgil (1951) are most noteworthy. According to these economists, agricultural sectors in underdeveloped countries contain redundant labour (Fei and Ranis) which can be removed and applied in useful employment under the assumption of *ceteris paribus*. Some labour can be dispensed with economically and so the portion of labour thus employed is regarded as surplus labour with zero marginal productivity (Cho 1963).

(*b*) *Disguised unemployment with positive marginal productivity*

Harvey Leibenstein's (1957) contention is also unique in the sense that some portion of the surplus labour in the agricultural sector can remain disguisedly unemployed but still have positive marginal productivity due to the seasonal nature of agricultural operations. The absence of alternative employment opportunities with higher marginal productivity is responsible for the creation of surplus labour in some slack seasons. Ragnar Nurkse's (1953) definition of disguised unemployment is also significant in the same sense in that it starts from different assumptions from those used in Mrs. Joan Robinson's analysis. Following the work of Navarrette (1951), Professor Nurkse relaxed the assumption of *ceteris paribus* and introduced instead the factor of capital into the production function. He emphasized the lack of capital and not, as the original concept implied, a lack of effective demand as being responsible for the creation of disguised unemployment. According to him, the marginal productivity in the agricultural sector is much less than that in the industrial sector, so that a transfer of population from the former to the latter may lead to increase in total production in the economy. But such a transfer does not take place for several reasons, of which the lack of opportunities of employment in the higher productive sector or activities within the same sector is the most important. This lack of employment opportunities may be due to the scarcity of capital that keeps the labour in economic activities with low or even zero marginal productivity. Accordingly, it is an ideal case of 'disguised unemployment' with positive marginal productivity. This portion of labour employed in a disguised sense can be withdrawn and put to work where its marginal productivity may be more. His concern here is not with the differential productivity but only with the labour productivity in the agricultural sector.

As his concept is analysed, it seems evident that even though all workers in agriculture may apparently be engaged in work, yet a large number of them may not be contributing to total output so that the marginal productivity of this kind of working labour is zero (Cho 1963).

Chiang's (1952) comments on disguised unemployment as presented in the *International Labour Review* are equally interesting. In his view, surplus labour as existing in the underdeveloped agricultural economies may possibly be withdrawn from rural areas without affecting agricultural output. He suggests three avenues:

1. the case of visible unemployment, in which labour can be withdrawn without changing the methods of production and without reducing the agricultural output;
2. by introducing simple and already known labour-saving changes in agricultural techniques requiring little or no additional capital (raising the intensity of work and increasing the division of labour or improving the land tenure systems, etc.);
3. by introducing more fundamental changes in the method of production requiring substantial capital investment.

Chiang believes that there exists potential underemployment which is chronic in the sense that even at the peak of agricultural activity the potential amount of labour time still exceeds the amount of labour time actually utilized. Visible unemployment, however, involves both seasonal and chronic unemployment which, according to Chiang, does not constitute disguised unemployment.

4. *Some reversals and contradictions*

Though the topic of disguised unemployment became of extreme interest after the 1930s, yet the large number of articles and papers discussing its conceptual status are extremely scattered and controversial. Much more controversial, however, has been the question of whether the disguised unemployment exists in underdeveloped countries or not. Interestingly important is the fact that some of the leading exponents of the disguised unemployment hypothesis became its opponents and now challenge the validity of this hypothesis. Among these Wariner, Schultz, and Viner are noteworthy. Eckaus's connotation that disguised unemployment exists in agriculture due to the limited technical substitutability of factors of production is not acceptable to them and even Kenadjian and Haberler (1957 and 1959, respectively) substantiate the views of Schultz and Viner.

Cho (1963) also contradicts the hypothesis of disguised unemployment and to him it is the visible underemployment and not disguised unemployment which is the characteristic of agricultural sector in the underdeveloped countries. The same is relevant to Nurul Islam (1964) who explains the empirical problems associated with the acceptance of the hypothesis of disguised unemployment. In its policy implications mere removal of excess population from the land may not increase the labour productivity; 'it rather involves much more complicated measures of reorganization of agricultural as well as non-agricultural operations. Introduction of organizational changes to replace excess labour is, however, equivalent to introducing a new factor of production which then does not necessarily prove that the present excess labour has zero marginal productivity.'

Empirically, as Nurul Islam suggests, the proposition of disguised unemployment is only a hypothesis and a great deal of more empirical evidence is required to prove the validity of its existence in underdeveloped countries. It is generally implied by this term that a mere removal of the excess population from the land will increase the marginal productivity of labour but as Nurul Islam puts it, 'the permanent removal from rural areas of segments of agricultural labour force necessitates special measures to meet the excess requirements of labour during the peak seasons. It is therefore, not a valid assumption that surplus labour in agricultural sector of underdeveloped countries has zero marginal productivity.'

Cho's remarks also go in line with Nurul-Islam's contention and suggest that visible unemployment and not disguised unemployment constitutes the basic characteristic of unemployment conditions in the underdeveloped countries. Social institutions are no doubt dominating in the process of choice-making in underdeveloped countries but not to an extent as to make people undertake irrational decisions in respect of their economic activities. To say that disguised unemployment exists in underdeveloped countries is rather to prove that people therein are irrational in the use of their labour, which does not seem to be acceptable.

5. *A compromise model of disguised unemployment*

This review though brief, however, still provides this impression that the concept of disguised unemployment confuses the issue of surplus labour in the underdeveloped countries. As Viner puts it, 'the meaning attached to the term disguised unemployment is imprecise

and ambiguous and does not provide a useful and working criterion for the problem of manpower utilization in the underdeveloped agricultural economics.'

Realizing the controversial and contradictory status of the term disguised unemployment it seems, however, appropriate to accept that most underdeveloped countries have a significant agrarian surplus population which comprises two segments, representing one with zero marginal productivity and the other with positive marginal productivity.

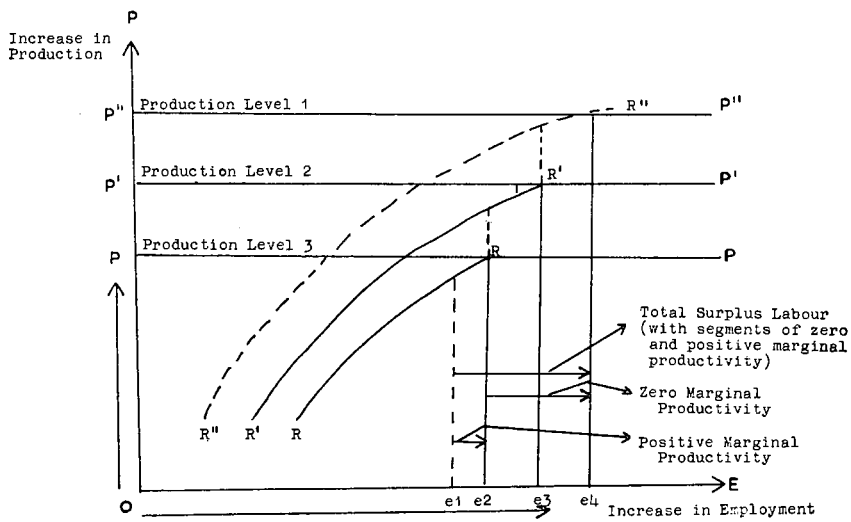

FIG. 1. Production levels 1, 2, and 3 correspond to e_2, e_3, e_4 representing positive marginal productivities respectively. Beyond these levels of labour employment, mainly in each category, labour becomes surplus with zero marginal productivity, a case of disguised unemployment in definitional sense.

Fig. 1 presents a compromising model in a graphical form. The vertical axis *OP* measures agricultural productivity or output and the horizontal axis *OE* gives the labour employment in agriculture. As such, *RR*, *R'R'*, and *R''R''* depict agriculture's contribution to the national product with the employment of different amounts of resources. These are total productivity curves at different levels of outputs corresponding to the various amounts of resource employment (land in this case). As new land is added, the total productivity curve would shift upward from *RR* to *R'R'* and to *R''R''* positions. This shifts the productive employment of labour as depicted by e_2 corresponding to *R'R'* and e_3 corresponding to *R''R''* (total productivity curves).

By definition, total surplus labour therefore is represented by Oe_4 minus Oe_1. The labour force represented by Oe_4 minus Oe_2 gives that portion of surplus labour which can be removed from agricultural sector without affecting the total output. This segment has zero marginal productivity and constitutes 'disguised unemployment' in strict definitional sense. The second segment as represented by Oe_2 minus Oe_1 has a positive marginal productivity such that a withdrawal of this portion of surplus labour force from the agrarian sector will give a smaller output in agriculture no matter what sort of reorganization of the remaining labour force may take place.

Conclusively, the real amount of surplus labour can be expressed by Oe_4 minus Oe_1 (segment Oe_2 minus Oe_1 with zero marginal productivity and segment Oe_4 minus Oe_2 with positive marginal productivity).

By this interpretation, the concept of surplus labour comes to include both segments either with zero or positive marginal productivity. From the policy point of view as referring to the shift of labour from one sector to another it is, however, the segment of labour force with zero marginal productivity which has the most direct relevance. Economists have been interested in measuring the amount of this segment of surplus labour in several underdeveloped countries and as a matter of fact, some of their attempts have been extremely significant. The next sections of this paper are designed to analyse some of the salient points of their empirical studies and the nature and worth of their conclusions.

II. *Basis of empirical studies in measuring disguised unemployment*

Empirical studies in economics mean the organization of observations, collection of data and analysis of the collected data for the purpose of obtaining a comprehensive and objective understanding of an economic phenomenon. The need for such studies arises from the essential complexities of economic organizations and the problems contained therein. Disguised unemployment is one of the many problems claimed to be existing in the complex agricultural organization of many underdeveloped countries and, therefore, always demanded for concrete and accurate empirical investigations. For the last two decades, following the emergence of a great deal of theoretical literature, several empirical works have been completed to measure the extent of disguised unemployment. Most of them have been in a scattered way which makes it difficult, if not impossible, to draw some definite and logical conclusions with the required degree of validity.

As Cho puts it, these studies range from establishing the 'simple relation between resources and population right up to technocratic, unrealistic and impractical calculations of what employment in an optimum agriculture should be'. As a result, they do not lend themselves to the framing of any concrete and definite conclusions with policy implications.

(*a*) *Different assumptions used in the empirical studies on disguised unemployment*

Various empirical investigations in this field have used different assumptive points to start with but most of them, however, considered the following:

(i) Inclusion of only those agricultural holdings which have direct cultivators (either peasant proprietors or tenants):
(ii) Exclusion of the wage-employed agricultural labour from the measure of disguised unemployment;
(iii) Fourteen to sixty years of age considered as working age of the labour force;
(iv) One woman in a household of four considered to be engaged in the household activities and thus excluded from the labour force on farm.
(v) Methodologically, the whole agricultural area divided into the requisite representative segments according to:
  (*a*) geo-physical aspects;
  (*b*) patterns and types of farming;
  (*c*) other economics aspects of labour utilization;
  (*d*) social aspects.

In each area, an appropriate grouping of size of holdings is necessary.

(vi) In each representative area and in each size of cultivation holding, previously derived coefficients of labour efficiency of men, women, and children as are used in the calculation of the total labour force;
(vii) Labour employed less than two months in a year assumed to be removable.

(*b*) *Methodological considerations*

Two methods have been commonly employed to measure the extent of surplus labour in the agricultural sector.

(i) *'Indirect' Method* or *'Norm' Method* as named by Rosenstein-Rodan uses the standard of labour productivity to estimate labour surplus, and gives the net amount of surplus labour as the actual labour available for farming less the amount of labour required to produce a given output (norm). The number of labour hours needed to produce a given output is subtracted from the number of labour hours available from the active agrarian population—the balance gives the agrarian surplus population. This can also be done by subtracting from the actual density of population the density of population required for a given type of cultivation. The difference gives the surplus population in the agricultural sector. The norm method is also specified by calculating a norm from the amount of land required under a given type of cultivation to provide one person a standard income. This norm then is compared with the amount of land and the available agricultural population to arrive at the size of the landless population or the surplus population. Standard income is calculated from the crop units and, for the difference in agricultural productivity of land, appropriate conversion coefficients for arable equivalents are used.

(ii) *Direct Method* has been used by many economists keeping in view the difficulties and impreciseness associated with the 'Indirect' Method. This method entails a direct empirical sample inquiry with questionnaires distinguishing different kinds of cultivation, sizes of holdings, forms of property, the composition of the labour force and the number of labour hours required and available. This method may give a reliable estimate of the true disguised unemployment as well as the frictional and seasonal unemployment in the agricultural sector of the underdeveloped economies. Cho, however, identifies several difficulties and complications as inevitable in this method because the calculations of labour required need very intensive investigation involving intricate farm management relationships. Such intensive studies are actually not difficult though they may be time consuming.

III. *Some conclusions of empirical investigations on disguised unemployment*

Though there are several scattered studies on disguised unemployment made for different countries, the following, however, are of interest in this paper:

(*a*) Rosenstein-Rodan's study in southern Italy;

(*b*) Paglin's study on Indian data;

(*c*) Nurul-Islam's study on data of Pakistan;
(*d*) Cho's study about South Korean agriculture;
(*e*) Mathur's study on Indian data;
(*f*) Robinson's study on data for East Pakistan.

These studies will be discussed and analysed one by one with a view to drawing collective conclusions at the end.

(*a*) *Rosenstein-Rodan's* (*1957*) *study in southern Italy*

This study pertains to southern Italy and its results have been published in the *Monthly Bulletin of Agricultural Economics and Statistics*. It substantiates the hypothesis that the agricultural sector in underdeveloped countries contains a significant amount of idle work force in terms of man-equivalent hours existing at the peak of the agricultural operations. This amount of idle work force is recognized by Rosenstein-Rodan as 'disguised unemployment' consisting of two segments—one removable and the other frictional. It is the removable portion of disguised underemployment which constitutes disguised unemployment in the underdeveloped economies (covering those workers who work for less than 60 days a year). Transference of this portion is considered not to cause total agricultural output to fall and no significant change in agricultural organization to be required to remove this surplus except that wage-workers may be employed for 60 days or less per year to compensate. This, he claims, will disturb the condition of *ceteris paribus* in the least noticeable way and so may be considered as justified. Regarding the other segment of disguised underemployment, it is his contention that it comprises those who are partially employed for more than 60 days during the year and, therefore, their removal from the agrarian sector may mean some significant changes in the organizational set-up or resource allocation, thereby violating the assumption of *ceteris paribus*. His analysis is intrinsically static in nature because of the difficulties associated with calculating potential surplus labour under dynamic assumptions.

Rosenstein-Rodan based his estimate of disguised underemployment only on small holdings of peasant proprietors and tenants with an assumption excluding all other tenure classes. It is only on such small farms that family labour remains mostly underemployed and so disguised unemployment, as a portion of it, becomes a dominating problem. Hired agricultural workers according to his connotation do not constitute surplus. He established that the basic principle on

which small-farm family labour is employed on its own farm is its adherence to the extreme point where the marginal labour productivity equals zero because the non-farm employment opportunities are extremely limited in the agricultural sector in underdeveloped countries.

However, under the strict categorization as used by Rosenstein-Rodan between removable disguised underemployment, disguised frictional underemployment and seasonal underemployment, his estimation indicated more than 10 per cent of the active labour force in southern Italy as surplus in the agricultural sector. But in areas with diversified types of farming, including mixed cultivation or some industrial production on a small scale in rural areas, the removable surplus is much less or even negligible. The exactness of his estimation of labour available and labour employed, of course, depends on the validity of his assumptions as well as the representativeness of the sample. Important assumptions as made by him, however, seem to be valid as he explains their nature with their justification especially in regard to the exclusion of inactive population, the allotment of one woman out of four family members to household activities, 270 days annual workdays figured for male and female workers on the average, and the coefficients of available labour used. Moreover, the exclusion of all tenure classes other than peasant proprietors and tenants and also of large holdings involving hired workers seems to be scientifically valid. However, his estimate of the hours of work per day, ranging from 8 to 13 hours, does not seem to be very true and in his study it reflects nothing at all about differences in food consumption at different times of the year, which of course is different from season to season depending on the seasonal nature and the limited volume of agricultural output. Moreover Rosenstein-Rodan has fixed lesser hours of work per day during winter which he attributes to shorter daylight and cold weather. This does not seem to be a correct assumption because in such situations much indoor work can be done and therefore may inflate the figure for hours of work per day. His allocation of hours of work per day for women also does not seem too realistic and therefore may be open to criticism.

Rosenstein-Rodan concludes as a policy measure, that in a type of dual economic system comprising one agricultural and another non-agricultural sector, a free transfer of labour from the former to the latter is possible without a loss of agricultural production. This connotes that the agricultural sector contains surplus labour in the

sense of workers whose marginal productivity is negligible, zero, or even negative.

(*b*) *Paglin's (1965) study on Indian data*

Morton Paglin made his study on secondary data which he obtained largely from the extensive seventeen-volume Farm Management Studies of 2,962 farm holdings in six states of India.

In offering an empirically based contradiction of an absolute surplus of agricultural labour with zero marginal productivity, Paglin established a correlation between inputs and outputs per acre using both real and imputed costs for cost data. Correlation came to be so high as to throw the hypothesis of surplus labour into doubt. 'If the marginal productivity of a large segment of family labour was zero, it is doubtful that so high a correlation between inputs and outputs would have resulted', says Paglin. He attributed the assumption of absolute surplus of agricultural labour with zero marginal productivity as held by many economists to the lack of an attempt to calculate such correlation between inputs and outputs in earlier studies. It is interesting to note here that Paglin's estimation of correlation gives an overconfident conclusion which does not seem to have an explicit indication of a cause and effect relationship. His correlation coefficient of 0·94 is no doubt very high but how far this high figure can be attributed to the contribution of labour only is not clear in his explanation. Paglin is using real and imputed costs data which include other factors besides labour. Labour is only one factor contributing to this coefficient figure and so a high correlation coefficient tells nothing about the exclusive marginal productivity of labour. It is not logical to conclude that this high correlation is due to higher labour productivity and may refute the hypothesis of zero marginal productivity. Paglin's input-output functions do not give the elasticities of production of each input factor separately and independently and further have no consideration for laws of return which may show their reflection on a final correlation coefficient figure. How far Paglin's approach gives the marginal return in yield or output due to an increase in any input resource is not known and how far his method takes into account the quantities of other inputs used and the level of the single input (labour) whose marginal return is required to be calculated is not clear from his analysis. It is probably true that Cobb Douglas power function using the formula of multiple correlation would have been much better to reach valid conclusions.

From his work, it is easy to gather that considerable doubt has been created against the hypothesis of disguised unemployment and also against all the models suggesting the transfer of surplus labour from the agricultural to the non-agricultural sector.

As a concluding remark, he puts himself in the category of those economists (Viner, Schultz, Cho, Oshima, etc.) who are against the hypothesis of surplus labour because all his empirical data and analysis indicate not only a positive marginal product of labour but rather show an increasingly high demand for labour in years to come due to the improvement in agricultural techniques in Indian economy.

(c) Nurul Islam's (1964) study on data of Pakistan

He suggests two approaches to the problem of measuring unemployment and underemployment—one from the point of view of the individual members of a community and the other from the point of view of the community as a whole. In the former approach he indicates that the felt needs of the individual members expressed in their search for work opportunities are to be considered. Technically there may be a large number of able-bodied persons of working age who are willing to work but cannot find it due to the lack of work opportunities. Hence this portion of the labour force remains idle or unemployed either for a whole year or a part of a year and constitutes, according to Nurul Islam, visible unemployment. Explaining his second approach, he brings out that mere engagement in some productive occupation does not necessarily mean absence of unemployment. People who are partially employed or are doing inferior jobs and therefore make a negligible net marginal contribution to the social product of the existing labour force constitute another type of unemployment which can accurately be termed as 'disguised'.

Commenting on a generally held concept of disguised unemployment that a condition when a section of the labour force can be withdrawn from work due to a change in organization or in equipment without reducing output shows the presence of surplus labour, Nurul Islam indicates that it may be possible only when the marginal product of labour is negligible. But it requires that the exact nature and extent of the contemplated reorganization of agricultural production should be known before evaluating the surplus labour. Similarly, a change in the form of existing equipment to employ less labour but to produce the same output is in effect a change in the techniques of cultivation which perhaps cannot be effected without

extra investment. Making extra investment means widening 'the range of alternatives and so the extent of disguised unemployment becomes conditional upon an exact specification of changes in these variables'.

In conclusion, Nurul Islam brings out that visible unemployment in the rural areas of East Pakistan seems to vary from 15 per cent to 25 per cent of total man-days throughout the year. This visible unemployment indicates considerable variation during different seasons creating shortage in peak seasons and surplus in the slack periods. Removing of this surplus labour from rural areas means making necessary adjustments to meet the excess demand for labour during the peak season. He suggests that within the rural areas a programme of cottage industries and other public works may be extremely useful in reducing the visible unemployment.

As to the measurement of visible unemployment, we need to observe directly all the farming operations continuously throughout the year supplemented by interviews of the farmers. But the measurement of disguised unemployment actually becomes much more difficult since it involves the social marginal product of labour.

(*d*) *Cho's* (*1963*) *study on Korean data*

Cho starts his study of disguised unemployment with a claim that numerous studies so far made on this topic failed to provide a definite analysis of the problem in its real perspective. He therefore makes the main objective of his study a clarification of the points of confusion by re-examining the problem of surplus labour in the agricultural sector of underdeveloped countries and then proceeds to more practical aspects by resorting to an empirical estimate of surplus labour and of actual manpower utilization in such economies. On the basis of his two-sided approach, Cho suggests certain policy recommendations which according to him must be executed without waiting for other socio-economic changes to materialize.

In this theoretical analysis, Cho assumes purely static conditions in which the size of population, the amount of capital, and other technical means of production are considered as given. He thinks that to get a correct estimate of what constitutes surplus labour at any given time one has to assume rigid constraints on the availability and nature of technology and capital. His whole study relates to South Korean agriculture where the actual conditions coincide with his assumptions

of keeping capital and technology constant. He recognizes that, though the quantitative and qualitative data collected on Korean agriculture may not suffice for broad generalizations applicable to all underdeveloped countries due to serious differences in their socio-economic and political conditions, yet agricultural economies especially in rice-growing regions share much of the same conditions and therefore the results of this study may be of practical significance to them.

Cho, first of all, clarifies the concept of unemployment as it differs from country to country according to the type of economic advancement. In an economically advanced country, says Cho, unemployment is 'open' which implies scarcity of employment opportunities for those who want them at prevailing wage rates. In underdeveloped countries, he mentions a different concept of unemployment as the so-called 'disguised unemployment'. This concept implies that certain labourers apparently seem to be working but do not thereby increase the total output. Therefore, such employment of workers is regarded as being no better than no employment at all. Cho's clarification of the term 'disguised unemployment' is very precise and unique and his interpretation of the generally accepted notions is really noteworthy. Current literature on disguised unemployment indicates that if the amount of capital stock available is more or less fixed at a very low level, the growth of population causes diminishing returns up to the point where the absorption of labour into the given stock of capital reduces the marginal productivity of employed labour to zero or to near zero (or even to a negative value). According to this concept of unemployment, the reason such unnecessary labour is employed rests on the nature of the prevailing social institutions.

Cho's main conclusions, in brief, can be listed as follows:

(*a*) There is much seasonal variation in employment conditions in Korean agriculture;
(*b*) there are shortages of family labour in peak agricultural seasons; and
(*c*) self-supporting family workers are relatively more underemployed than attached wage workers.

The second point indicates that there is no chronic underemployment. On the whole, Cho's conclusions can be further summarized as follows:

(*a*) Approximately 30 per cent of the total labour available (i.e. self-

supporting family labour plus attached wage labour) is annually utilized;

(*b*) disguised unemployment in the sense of chronic idle labour does not exist;

(*c*) approximately 62 per cent of the unutilized labour, or about 19 per cent of the total labour available, represents tradition-directed underemployment. This cannot be considered available for alternative use unless there are significant social changes and/or a substantial addition of capital;

(*d*) technical underemployment, including both self-supporting family labour and wage labour, amounts to approximately 12 per cent of the total labour force available, or about 38 per cent of the total unutilized labour;

(*e*) the volume of tradition-directed underemployment is greater than the underemployment of self-supporting family labour stemming from the hiring of wage labour.

On the whole, the main conclusion which can be drawn from Cho's work is that only technical labour is true surplus—the only withdrawable surplus under the *ceteris paribus* assumption. Under the constraint of this assumption, tradition-directed (closed) underemployment cannot be withdrawn from the land unless, as Nurkse (1953) points out in his *Problems of Capital Formation in Underdeveloped Countries*, some compulsory or totalitarian approach is used —which of course does not seem to be too appealing. Therefore, as Lewis suggests, the supply of labour in underdeveloped countries is not unlimited and as Reisman (1950) puts it, all the unemployed in tradition-directed societies are not surplus labour. Therefore, underemployment, which Cho measured, is all visible, not disguised, in the sense of the traditional school. In technical underemployment, there is nothing disguised or hidden, though in tradition-directed underemployment there is something which makes it disguised. Cho, therefore, suggests breaking down of social institutions which cause such tradition-directed underemployment in underdeveloped countries.

(*e*) *Mathur's (1964) study on Indian data*

Mathur starts his analysis of the problem of disguised unemployment with an assertion that the agricultural sector in developing countries is poorly organized which contributes to the creation of

disguised unemployment on a large scale. In this basic recognition, Mathur fails to recognize that the defective agricultural organization is not the cause of the so-called disguised unemployment; it may be rather itself the effect of numerous causes among which disguised unemployment occupies an important position. It may be pointed out that the organization in the farming sector involves a proper co-ordination of the factors of production—land, labour, capital, and management—in such a way that highest return per acre may be obtained from the resources at the command of the farmer. It is empirically evident that in the Indo-Pakistan sub-continent, farmers fail to achieve an effective economic co-ordination of these factors of production because of several factors among which scarcity of capital, over-abundance of labour, and too much pervasiveness of social institutions are the most important. It is pointed out by many economists that, especially in India, certain inherent weaknesses in the agrarian system are due to copious population with limited resources of land and capital which do not allow the farmers to adopt a better organization in agriculture. Among these, in my judgement, extreme elasticity of labour with scarcity of capital are heavily responsible for creating defective agricultural organization and so resources cannot be related to a well-knit farm organization. From this background, it seems appropriate to contradict Mathur's basic recognition that defective agricultural organization is responsible for the creation of disguised unemployment in underdeveloped countries—rather the latter may contribute to the creation of the former. It is, however, possible that the problem of surplus labour may look more acute in a properly organized agriculture.

Mathur, in the prelude to his analysis, contends that most of the approaches made so far to the problem of disguised unemployment are of a macro-nature and therefore obscure certain important micro-level characteristics. His definition of a micro-approach to the problem of disguised unemployment includes the study of micro-units consisting primarily of family farms working with self-sufficient supplies of labour. According to his arguments, the macro-approach is inadequate and creates inconsistencies between the theory and the facts about the problem of disguised unemployment. His disaggregative analysis is claimed to show detailed aspects such as the inter-relationship between the structure of farms, labour productivity, income levels found to prevail on them, and the different types of unemployment (open, disguised, underemployment) prevalent in developing agricul-

tural economies. In his micro-analysis of the problem of disguised unemployment, Mathur gives a special treatment to the relationship of the marginal productivity theory of wages with disguised unemployment. Quoting Nurkse, the marginal productivity of labour under disguised unemployment is assumed to be nil and if the marginal productivity of labour is taken to determine the wage-rate it follows that the wage-rate should settle at zero. It is under this condition, writes Mathur, when the marginal productivity theory of wages is interpreted as determining the level of wages in the economy that the real contradiction between the simultaneous existence of positive wages and disguised unemployment makes its appearance. According to him, the marginal productivity theory of wages seems to be untenable because marginal productivity of labour itself depends upon the size of the labour force in employment. Actually, according to the original assumptions of this theory, it is argued that this difficulty can be overcome by considering the condition of full employment which implies that the available supply of labour is always absorbed in the productive services. According to classicists, and even neo-classicists including Clark, Pigou and Hicks, the supply of labour is automatically assumed to be equal to the demand for labour under the assumption of full employment. Any deviation from the full employment equilibrium point is assumed to be self-correcting under a regime of flexible prices. This self-correcting mechanism, Mathur argues is true only when certain other assumptions like perfect competition, full mobility of labour between employments, homogeneous character of all labour, given rates of interest and rent, given prices of the product and the net revenue are fulfilled.

These assumptions are not present in the real world and entail a static condition whereas, in practice, the economy has dynamic characteristics. All the factors assumed to be constant are in fact constantly changing—competition is never perfect, mobility of labour is restricted for various reasons, all labour is not of the same grade, remunerations to other factors of production do not remain constant, and the prices of labour also vary. All these changes modify the theory when applied to actual situations. Even under static conditions as envisaged within the context of this theory, the prevalent uncertainties and adverse anticipations in the economic system are ignored and as Keynes puts it, even when an infinite relaxation is made regarding the consideration of these uncertainties and adverse anticipations involving the time element, the assumption of full employment containing

a self-correcting mechanism does not seem to be true. And once the assumption of full employment is dropped, it becomes incorrect to state that marginal productivity of labour determines the level of wages.

Mathur seems to be criticizing the idea of Professor Nurkse that the marginal productivity of labour, over a wide range in developing countries, is zero and therefore the wage-rate so determined by the marginal productivity of labour ought to be zero. Mathur asserts that the concept of marginal productivity as determining wage level is purely hypothetical and helps to indicate only the intensive margin up to which labour will be employed in a micro-sense once the wage level is known. Mathur is justified in asserting that real wages at the aggregative level are determined by forces other than the marginal productivity of labour. Especially in a country like India where most of the work force is made up of family labour instead of wage labour, the assumption of full employment on which the marginal productivity theory is based does not apply. The competitive wages cannot be determined by the intersection of supply and demand curves for labour. In a realistic sense, Mathur points out, such countries, being overpopulated, on the whole have an extremely elastic labour supply curve especially in rural areas and therefore wages tend to be determined on subsistence level rather than at a level equal to the marginal productivity. From this connotation, it can be inferred that there is no reason in posing the problem why wages should be positive and not zero under conditions of disguised unemployment where marginal productivity of labour is assumed to be nil. Wages, in practice, have got to be positive irrespective of the level of marginal productivity of labour. Deducing his basic assumption from Lewis, Carter and Raj, Mathur indicates that wages as such do not correspond to marginal productivity of labour but to the subsistence level, because in an underdeveloped overpopulated country, the price of labour is a wage at subsistence level so long as the supply of labour is unlimited and exceeds the existing demand.

Having discussed Mathur's deviation from the marginal productivity theory of labour, it seems plausible to indicate that his contention of subsistence wages also seems to be cryptic in certain aspects. The concept of subsistence wages is in itself a controversial topic which even according to the original version of classicists appears to be of an interpretative nature. Subsistence, as it appears from the Malthusian version, involves only the biological minimum required to sustain an

employed worker. In its intrinsic sense what sustenance means is not clear from this explanation. Sustenance can be at different levels of physical fitness and therefore what allowances should be made in determining the minimum requirements of subsistence is still a controversial point. How far is the introduction of some allowance for maintaining the workers' status in a given social environment justified? As a matter of fact the minimum wages at subsistence level should constitute a socio-biological minimum which under the classical dictum is not well defined. Actually, the requirements for a subsistence scale of living in a society may vary if it includes both biological and social necessities. Hence, the concept of subsistence wages, though approved by Mathur, is not innately clear and Mathur, though contradicting the determination of wages by the marginal productivity of labour, fails to provide an adequate definition of the subsistence level which he holds determines wages.

Using the conclusion that wages tend to remain at subsistence level, Mathur attempts to reduce the importance of the point that emphasizes the simultaneous existence of surplus labour in agriculture and of labour receiving a positive wage rate in cases where the marginal productivity of labour is zero. According to his reasoning, it is more important to consider the question of the simultaneous existence of disguised unemployment and an agricultural labour force which must in any case receive positive wages. From this he proceeds to provide an analysis for giving an answer to the above question by looking at man–land ratios over different farms representing an uneven distribution of population over land resources. From the empirical evidence of the uneven distribution of labour over land he dismisses the assumption of the existence of perfect competition which entails perfect mobility of factors of production and on which is based the marginal productivity theory. As the basic interpretation of the marginal productivity theory goes, factors of production tend to move from those uses in which their marginal productivity is low to those in which it is high. In this manner a given supply of factors of production gets distributed in such a way that its marginal productivity is equal in all its uses. Under the assumption, therefore, that land is of the same quality, the ratio of family workers to the area of their holdings should thus be the same on all farms. But the available statistics as given by Mathur indicate that the average size of family declines as we go towards the smaller farms, but the average size of farms declines much faster than the size of families.

From the dispersion of the standard man–land ratio, Mathur works out an important implication that even under conditions generally referred to as those of disguised unemployment, the marginal productivity of labour on all farms need not be zero. He therefore concludes that disguised unemployment cannot be generalized as a situation of zero marginal productivity of labour with respect to land at the macro-economic level. It is because on some farms the marginal product of family labour may be zero while on the others it may be positive and in some cases even quite high. Mathur, on this basis, gives an intelligent observation about the existence of a class of agricultural labourers as related to the concept of man–land ratio. According to his calculations, farms where the standard man–land ratio is comparatively low have a fairly high level of marginal productivity of labour and thus are in a position to engage non-family labour to the extent required. At the other extreme, he indicates that the family members on farms where the man–land ratio is very high may not even be able to subsist on income from the family farm and thus have an urge to offer their services for wages. The reason for very low marginal productivity of labour is quite obvious. It is because the use of their labour has reached a point at which additional units yield very little. It is from this class of farms that the agricultural class of labour emanates for wage employment elsewhere.

In brief, Mathur points out that these facts justify the explanation of the existence of agricultural labour receiving positive wages side by side with surplus labour which he refers to as 'disguised unemployment'. Most of this disguised unemployment, according to Mathur's hypothesis, therefore exists on family farms with high man–land ratio different from those which employ wage labour due to low man–land ratio.

Regarding the mobilization of disguised unemployment surplus for economic development activities, Mathur requires the disengagement of the passive working strength from the farms for use elsewhere. The main difficulty arises from the fact that the passive and the effective working forces exist side by side in the case of each worker and therefore the removal of a complete marginal worker may create problems requiring redistribution of the work between the family workers so as to make certain individuals completely free with the rest fully employed. This cannot, however, be achieved by any simple reorganizational changes and may simultaneously demand changes in the existing social institutions.

(f) Robinson's (1969) study on data for East Pakistan

Studying the problem of disguised unemployment in rural East Pakistan, Professor Robinson reached the conclusion that between 1951 and 1961 the extent of disguised unemployment increased sharply amounting to almost 20 per cent of the 1961 labour force. He attributed this phenomenon to two factors, namely:

(i) rapid expansion of population;
(ii) more or less fixed supply of other factors of production.

The main characteristics of the labour surplus that developed during the period 1951–61 had been disguised through the practice of work-sharing, entailing a reduction in average hours worked per worker. The labour surplus of 20 per cent was in addition to whatever surplus existed in 1951 before the impact of population growth was felt. This, therefore, represents an incremental measure of surplus labour. Professor Robinson's estimate, brief as it is, evidently substantiates the presence of surplus labour in the agricultural sector of East Pakistan.

IV. *Conclusions and some comment on labour mobility*

A review of these empirical investigations reveals a great deal of disagreement among the development economists on the status of disguised unemployment in the agricultural sector of the underdeveloped countries. In seeking to reconcile this disagreement, it is relevant to conclude that one important aspect of the problem of surplus labour in the underdeveloped countries is in the context of the mobility of rural population. The fact that, under the assumption of disguised unemployment, agricultural surplus labour with zero or low marginal productivity can be removed from agriculture in a certain area without lowering the level of output is generally accepted in all empirical studies. But the point that the population is removable but actually does not move out is not significantly stressed in most of the empirical investigations. This raises such questions of policy as why people do not move out to other occupations and places if their marginal productivity in agriculture is zero or low? What are the main forces that oblige them to stay within the agricultural sector despite zero or low marginal contribution? Raising these questions automatically connects the whole issue of disguised unemployment with a chain of other economic and non-economic factors that reveal this phenomenon in its great complexity.

If the mobility of labour from the agricultural sector to the industrial sector is zero or negligible, it supports the assumption that the former sector is in a state of equilibrium. It implies that the mutual interaction between the endogenous attractive and expulsive forces is in balance. In most of the underdeveloped economies, the agricultural sector is in a general state of equilibrium caused by this balancing effect of the endogenous attractive and expulsive forces (Fig. 2). Representing the endogenous attractive forces by X_1 and the endogenous expulsive forces by X_2, this state of equilibrium can be expressed by

$$X_1 = X_2 \quad \text{or} \quad \frac{X_1}{X_2} = 1$$

The outflow of agricultural surplus labour therefore would depend on the counteracting forces that disturb this equilibrium position. This can be done by either decreasing the effectiveness of endogenous attractive factors or by increasing the effectiveness of endogenous expulsive factors. The magnitude of success of any measures designed to achieve this goal in turn would depend on the nature and significance of the gradient existing between the agricultural and non-agricultural sector. By gradient is implied the 'economic gradient' conditioned and constituted by the difference in the existing economic resources in two sectors of the economy.

Normally, there is a significant gradient from the agricultural sector to the industrial sector and according to the 'Diffusion Theory' surplus population should move out from the former to the latter. In practice it does not do so. It is because of the role played by the 'Diffusion Coefficient' that makes the effect of the existing gradient almost insignificant. If the existing gradient is represented by G, the outward movement of the labour force M can be expressed by a simple relationship:

$$M = kG$$

where (k) is the 'Diffusion Coefficient' and can be expressed in terms of the 'Mean Free Path' (δ) that defines the interaction of the various endogenous attractive factors existing within the agricultural sector. If the 'Mean Free Path' (δ) is too small it means that strong socio-economic and psychological forces constituting the endogenous attractive factors influence individuals to interact very closely with each other and therefore create a cohesive and a well-knit system. This reduces the influence of the endogenous expulsive forces and despite their significant impact the whole system remains in a state of equilibrium (Fig. 2).

MUTUAL INTERACTION OF ATTRACTIVE AND EXPULSIVE FACTORS CAUSING A STATE OF EQUILIBRIUM

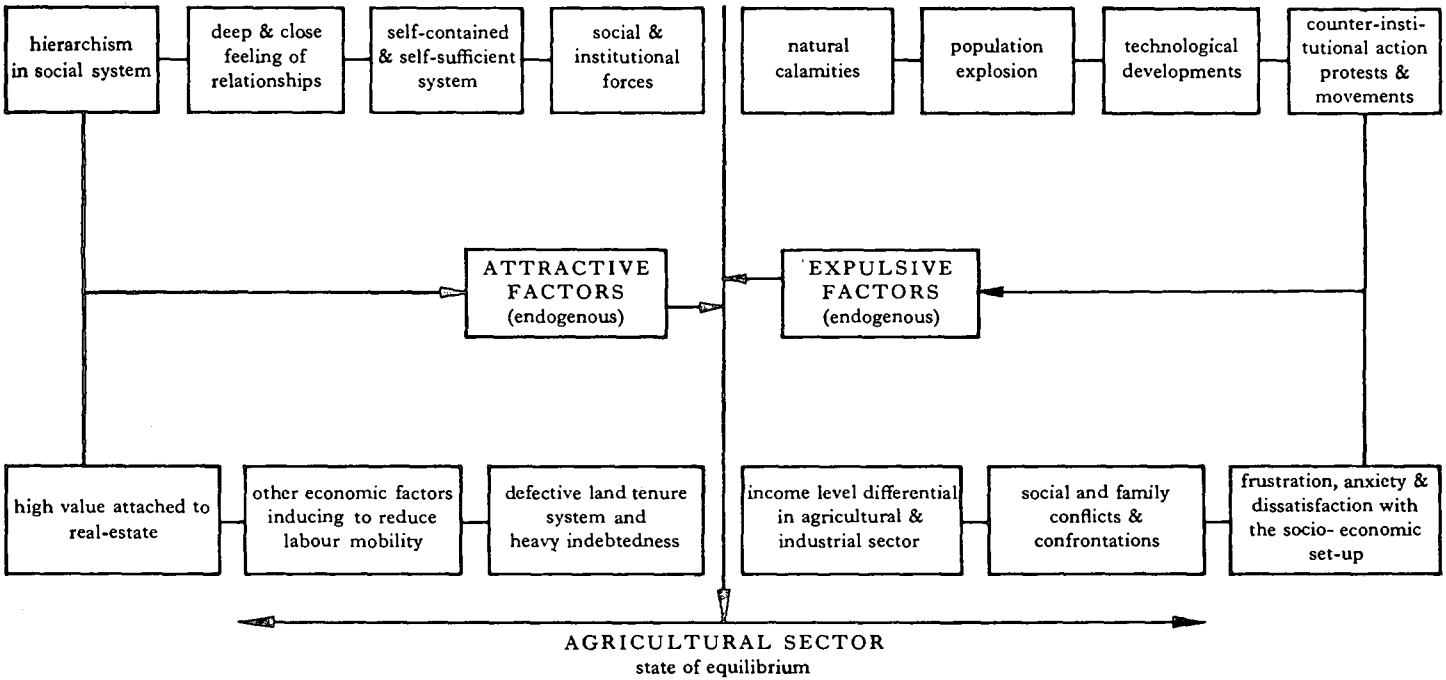

FIGURE 2.

Contrarily, with a large 'Mean Free Path' (δ), individuals do not interact so closely and thus the relationship that develops among them remains loose and breakable. The 'Mean Free Path' determining the limits of the 'Diffusion Coefficient' (k) therefore is very small in the agricultural sector of underdeveloped countries because of:

(i) Social and institutional factors; family allegiance, paternalism, collective solidarity, etc.
(ii) Self-contained, self-sufficient, and less-commercialized systems.
(iii) Deep-rooted and close feelings of relations with other members of the community.
(iv) High value attached to land as such.
(v) Existing hierarchies and their serious significance for the functioning of the rural society.
(vi) Social structural rigidities and social factions making each social class an endogamous group with severe dampening effects on initiative, aspiration, and progressive thinking.
(vii) Defective land tenure system keeping the cultivators tied to their cultivation holdings.
(viii) Indebtedness and financial limitations.
(ix) Compulsory or induced land settlements.
(x) Lack of sufficient infra structure within rural areas.
(xi) Heavy investment in indivisible fixed capital.

These factors, making the effect of the 'Diffusion Coefficient' small, cause M to remain effectively negligible despite a large gradient existing between the agricultural sector and non-agricultural sector. Agricultural population, therefore, does not move out and a state of overpopulation persists in the form of available surplus labour. This creates a situation in which the inelastic demand for agricultural products is matched by an inelastic supply of labour. This state of equilibrium can be upset by several factors of which a 'Convective Thrust' is important for quick results. Convective thrust may either reduce the impact of endogenous attractive forces or increase, in a greater proportion, the influence of endogenous expulsive forces. The latter course is not favourable in the sense that its effects are not over all good.

These endogenous expulsive factors are not a healthy means of pushing out agricultural surplus labour into the industrial sector. Mobility caused by the endogenous expulsive forces can be cate-

gorized as involuntary or forced and may create post-mobility problems of adjustment. Rural population in this category may face problems in assuming the role patterns of the non-agricultural sector with their deep sociological, status-related, and socio-psychological footings. The 'convective thrust' forces, as a matter of fact, may impose mobility on the individuals whether they want it or not. As such, these factors may involve more post-migration adjustment problems. Disruption of social and economic roles is most likely to be experienced in relation to each of these endogenous expulsive forces.

Under these conditions, a right method of pulling out surplus labour from the agricultural sector is through the development of sufficiently effective exogenous attractive factors besides decreasing the effect of endogenous attractive forces. The elasticity of migration of labour from the surplus sector to non-surplus sector would be fairly high if there were developed sufficient exogenous factors to motivate labour to move out. Lack of capital to finance the transfer of surplus agricultural labour, lack of knowledge among agricultural labour about existing job opportunities in the non-agricultural sector, and lack of alternative jobs available at prevailing wages are some of the important variables that constitute problems in the development of these exogenous attractive forces. Individually, these may serve as serious impediments to labour mobility unless appropriate policies are forthcoming to provide travel grants to cover costs of moving to urban areas, subsidies or allowances to maintain the moved-out labour force for some time during frictional unemployment and even policies to increase the returns from non-farming jobs as compared with the farming employment are important. These are prerequisites for any programme designed to move surplus labour out of the agricultural sector. Lack of knowledge is an effect of malfunctioning of the knowledge market and, as such, serves as a serious limiting force for labour mobility. The appropriate policy is to provide relevant information about the job opportunities and prospects in the non-agricultural sector. Employment exchanges and manpower centres if started on an extensive scale can do a great deal to provide accurate and relevant information to the rural people.

The most important factor which can be effectively considered as an attractive exogenous force is the availability of a sufficient number of jobs for the surplus agricultural population. This poses the most difficult policy implications. Mobility of surplus labour from the

agricultural sector to the non-agricultural sector can be greatly encouraged if the number of additional non-farm jobs created exceeds new entries from the farming sector in an economy. This facet of policy implementation requires that appropriate monetary and fiscal programmes consistent with a high rate of growth of employment should constitute an important part of an agricultural development scheme in an underdeveloped country. Technically, it involves altering conditions of demand for non-farm labour by shifting the demand function to the right. Industrial expansion schemes specially in the sphere of cottage industries, etc., can be extremely effective in this direction.

These factors will bring about a change for the better and may facilitate post-mobility adjustment which may be difficult in the case of endogenous expulsive forces. The principle involved in the exogenous attractive factors is not basically moving agricultural labour out of the rural sector; rather these forces provide more productive employment for the rural population in the non-agricultural sector or bring non-farm jobs to the rural communities. This may be justified from the point of view of the public interest as well as from the point of view of increasing total national output and also equalizing economic opportunities. This will increase welfare and income of the whole agricultural population, both those remaining on the farm and those transferring to other jobs. In conclusion, it is important that a direct farm programme to enhance and increase agricultural labour mobility to non-farming areas be carried out in a properly organized manner in underdeveloped countries. It may include four main areas of emphasis:

1. Provision of financial assistance in the form of grants, loans, or both to the farm families interested in moving out.
2. Increased services of employment agencies for agricultural labour to examine, advise, and place those who are interested in moving out to the non-farm sector.
3. Special manpower and womanpower training programmes for jobs in the non-agricultural sector. This may include vocational trade and industrial training and also a thorough orientation as how to make socio-economic and psychological adjustments when transferring to the non-agricultural sector.
4. Development and expansion of occupational guidance programmes for young members of the agricultural labour force.

These positive policies and measures designed for increasing labour mobility would have both direct and indirect effects in the context of exogenous attractive forces.

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