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Maree, Johann

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Title: The Under-Utilisation of Labour in the Ciskei and Transkei
 INTRODUCTION.

by: Johan Maree

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The Underutilisation of Labour in the Ciskei and Transkei Introduction:

A neglected problem of the South African political economy is the unemployment of Africans. This paper is an attempt to shed some light on the problem or, rather, to point out that it is indeed a problem.

It is based on a study (1) that attempted to define and measure African unemployment. Fortunately unpublished data was made available by Prof. P.J. de Vos for two districts each in the Ciskei and Transkei. From this data some tentative conclusions which are given below could be drawn.

Outline:

This paper is divided into four parts as follows:

1) Definition of the underutilisation of labour:-

The shortcomings of the concept "unemployment" are pointed out and the concept "underutilisation" is introduced and defined. The complications that result from considering a rural economy with oscillating migrant labour are raised and resolved.

2) Theory of the underutilisation of labour:-

A theory is postulated which aims at describing the relevant economic factors when dealing with the underutilisation of migrant labour.

3) Causes of the underutilisation of labour:-

The numerous and diverse causes of the underutilisation of migrant labour are listed. This part puts some flesh onto the bare bones of the theoretical part.

4) Measurement of the underutilisation of labour:-

The major findings from the Ciskei and Transkei surveys are summarised in order to indicate the dimension of the problem.

1) J.G.B. Maree, Problems of Definition and Measurement of the Underutilisation of Labour in the Traditional Rural Sector of an Economy with Migrant Labour (December 1972)

1) DEFINITION OF THE UNDERUTILISATION OF LABOUR

What is meant by unemployment in a rural economy with migrant labour? As soon as an attempt is made to define it, conceptual problems arise as a result of three complicating factors:

a rural as opposed to an urban economy is being dealt with; migrant labour exists; and the term "unemployment" itself has limitations. The reasons why the concept unemployment does not transfer directly from an industrial to a traditional rural economy are:

- 1) There exists no fixed number of hours per day or days per week which constitutes full employment in the traditional sector. Time is not necessarily the yardstick by which work effort is determined.
- (2) In addition to that the dichotomy between work and leisure is not felt as strongly by the peasants as the industrial workers. (3).
- 2) There is not a particular wage rate in the subsistence sector at which the worker is or is not willing to work.
- 3) The distinction between the actual and potential labour force in industrial societies does not transfer directly to a subsistence traditional society. Nor, from the point of view of planning, can the readily available labour supply be assumed to be the same as the labour reserve. (4) This is due to the fact that: (

2) Edgar Raynaud, "The Time Concept in the Evaluation of Rural Underemployment and Leisure Time Activities", Social Science Information, vol. 8 (3), June 1969, p.60.

3) Ibid., pp. 80-2.

4) Gunnar Myrdal, Asian Drama, An Inquiry into the Poverty of Nations, (Harmondworth, Allen Lane The Penguin Press, 1968), p.999.

"the bulk of the labour force is embedded in a climatic, social, cultural, and institutional matrix that not only tends to perpetuate present low levels of labour utilisation, but also resists rapid and immediate adaption to novel and unfamiliar ways of living and working." (6)

4) In the traditional sector work is often done on a communal basis which makes the measurement of work effort all the more difficult.

5) The distinction that is made between "economic" and "noneconomic" activity in industrial societies is blurred and possibly non-existent in traditional societies. (7)

6) Seasonal fluctuations of demand for labour in the traditional sector plays a much more important role than seasonal fluctuations in the urban sector and therefore needs to be considered more carefully. (8)

The existence of migrant labour makes the definition of unemployment much more complex because workers could have been employed in the rural and the industrial sectors during the same reference period.

The concept "unemployment" itself has severe limitations because it fails to bring out any of the following distinctions:

(i) The whole range of part-time employment between being fully employed and totally unemployed during the reference period. Such part-time employment is called underemployment.

(ii) The attitude of the labourer himself to work: whether he considers himself to be underemployed or not.

6) Ibid., p. 999.

7) See, for instance, E.J. Berg "Backward-Sloping Labour Supply Functions in Dual Economies - The Africa Case", Q.J.E. Vol. 75, 1961 p.473.

8) See W.C. Robinson, "Types of Disguised Rural Enemployment and Some Policy Implications", OEP, vol. 21 (3), Nov. 1969. pp 378-9.

(iii) The income earned from employment; whether full employment exists or not it is of vital concern whether such employment as does exist is providing adequately for the needs of the worker and his dependents.

(iv) The productivity of the worker; not just the length of time a person works, but also the productivity during the period of work is of importance.

(v) Utilisation of human resources; whether fully or productively employed or not the important question also arises if the worker is realising his full human potential. A situation may exist where people are working below their actual or potential skills.

On account of these limitations of the term "unemployment" it is more fruitful to make use of the "underutilisation" of labour.

It is defined as the use of labour below its full human potential and it encompasses the different aspects of working for a shorter time than is normal, working at a low rate of productivity and with low earnings, and working below the full actual and potential skills of the labourers. In order to come to grips with these different aspects we shall adopt three approaches for the conceptualisation of labour underutilisation. They are the shortage of work approach, the inadequacy of income approach and the waste of human resources approach. (9)

9) See ILO, Towards Full Employment, ch. 1;
and ILO, A Programme of Action for Ceylon, ch. 2

Let us now consider these dimensions of underutilisation in detail by analysing each in turn.

(1) The Shortage of Work Approach

In this approach people of working age are defined as being unemployed if they do no work at all during the reference period. Visible underemployment or, simply, underemployment of labour is defined to exist if a person of working age works appreciable less time during the reference period than is considered to be normal full time work during the same period. Both unemployment and underemployment are therefore indicative of a shortage of work, i.e. there is not enough work to keep everybody capable of working fully employed. In terms of demand and supply the demand for work at the existing remuneration for that work exceeds the supply of the labour.

(2) The Inadequacy of Income Approach

The rationale behind this approach is that people work mainly for the purpose of earning an income and if this income is found to be inadequate there must be something inherently inadequate with the work the people are performing. This approach not only incorporates people who are fully employed and earning an inadequate income, but also people who are underemployed and unemployed and therefore serves as a very useful indicator of the extent of underutilisation of labour.

(10)

A special aspect of the inadequacy of income that this study is concerned with is that of poverty. This is because the traditional rural sectors of developing countries almost all appear to face this problem which requires urgent attention. (11)

10) See, for instance, D. Turnham and I. Jaeger, The Employment Problem in Less Developed Countries, p.16.

11) Concepts of Labour Force Underutilisation (Geneva, ILO, 1971)

The question arises what constitutes an adequate income or how poverty is defined and, as in the shortage of work approach, value judgements inevitably have to be made. However, the inadequacy of income approach probably allows for the most "scientific" or "objective" evaluation of poverty and an inadequate income level. However, normative assumptions have to be made when determining which items to include in the PDL and EML "basket of goods", and many human needs are socially determined (12) so that even this approach is not completely value-free.

(Abbreviations: PDL = Poverty Datum Level; EML = Effective Minimum Level.)

(3) The Waste of Human Resources Approach

The aim of this approach is to indicate that human resources are not being used to their full extent and that people are performing work below their actual or potential skills. There is thus a loss of human resources which is a cost to the society as a whole and to the individuals concerned. This phenomenon is defined as invisible underemployment which is the situation where a person's working time is not appreciably reduced, but he is working below his full human potential.

A three-fold categorisation of this loss of human potential of workers has been made as follows: (13)

- (1) Workers employed in occupations below their highest skill.
- (2) Workers functioning below their capacity, either because they work in inefficient enterprises or because they are prevented from functioning at their highest capacity.

12) See Riad B. Tabbarah, "The Adequacy of Income: A Social Dimension in Economic Development", JDS, vol. 8 (3), April, 1972 pp. 58-61.

13) Harold Goldstein, "On Aspects of Underutilisation of Human Resources", in Proceedings of the Social Statistics Section, (Washington D.C., American Statistical Association, 1967) p. 119.

- (3) Workers employed at their highest present skill but below their potential if they had more education or training.

We are now in a position to extend the concept of underutilisation of labour by incorporating migrant labour. The definition is again made in terms of the three approaches, namely the shortage of work, the inadequacy of income and the waste of human resources approaches.

(1) Shortage of Work Approach

Unemployment and underemployment are still defined in terms of the time spent working, but to overcome the problem that a migrant labourer can work in two sectors during the same reference period it is helpful to make use of the diagram in fig. 1

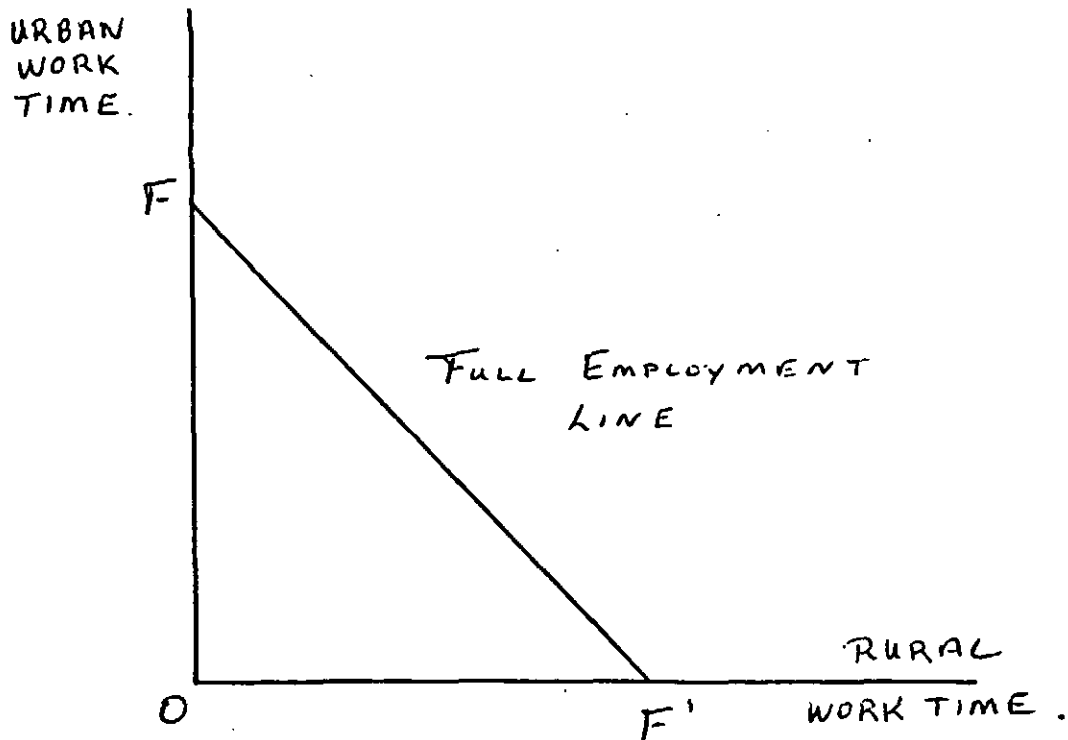


fig. 1.

The vertical axis represents the time spent working in the urban sector and the horizontal axis the time spent working in the rural sector, both expressed in the same units. In order to determine the duration of the work it is only necessary to add the time spent working in both the urban and the rural sectors. The line FF' is the full employment line and represents all the possible combinations of work-time spent in the two sectors that constitute full employment.

(2) Inadequacy of Incomes Approach

In order to extend the adequacy of income approach to apply to the migrant labour economy it is necessary to include the income remitted by a migrant labourer to the subsistence income of the remaining members of the same household. The income of a household is considered to be inadequate if the sum of the remitted income and the subsistence income is not above the EML of the household. The PDL and the EML of the household are determined by including only the members of the household that are resident in the household for most of the year. This concept of labour underutilisation incorporates a measure of the utilisation of labour in both the urban and the traditional sectors.

(3) The Waste of Human Resources Approach

Because of the difficulties in measuring the waste of human resources this approach is also best used in the migrant labour economy by concentrating on establishing the relationships between the waste of human resources and other phenomena such as poverty.

The incorporation of migrant labour increases the factors that need to be examined to see whether, and to what extent, they contribute towards a waste of human resources.

2) ECONOMIC THEORY OF THE UNDERUTILISATION OF LABOUR

Thus far only the definition the underutilisation of migrant labour in a rural economy has been discussed. In order to understand the problem of labour underutilisation itself it is necessary to examine the underlying economic theory.

The most common theory that has been put forward to explain the existence of invisible underemployment (14) in the traditional sector of a dual economy is that the marginal product of labour is zero or very close to zero. (15) The zero MPL has also been identified with the existence of surplus labour in the traditional rural sector. By this is meant that labour can be withdrawn from this sector without a decline of the total rural product taking place. (16).

The theory of the zero marginal product of labour and the existence of surplus labour has received the attention of numerous economists (17) and both assertions have come under serious attack.

14) In development literature invisible underemployment is usually called disguised unemployment.

15) W.A. Lewis, op. cit., page references given below refer to reprint in A.N. Agarwala and S.P. Singh, eds., The Economics of Underdevelopment, (Oxford University Press, 1958)

16) Lewis, p. 402.

17) The literature on this is enormous. For good surveys thereof see C. Kao, K. Anschel, and C. Eicher, "Disguised unemployment in Agriculture: A Survey", in C. Eicher and L. Witt, Agriculture in Economic Development, (New York, McGraw-Hill, 1964) chapter 7; and Myrdal, vol. 3, Appendix 6.

The marginal product of labour has been shown to be zero only when special conditions pertain by Berry and Soligo (18) who used an indifference curve analysis and by Sen (19) who used welfare criteria. By assuming a smooth and normal production function Sen has shown that a peasant family maximizes its welfare by applying labour to the point where the marginal product of labour $Q'(L)$, is equal to the marginal disutility of income, $V'(l)$, per unit marginal utility of income, $U'(q)$, (20) i.e.

where
$$Q'(L) = \frac{V'(l)}{U'(q)} = x$$

Sen defines x as the "real labour cost" and his theory thus states that labour is applied to the point where its marginal product equals the "real labour cost". Furthermore, Sen shows that the existence of surplus labour depends on the marginal utility and the marginal disutility schedules being flat over the relevant region if the schedules are independent of each other. On the other hand, if they are not independent, then all that is necessary is the invariance of the "real labour cost" with respect to joint

18) R.A. Berry and R. Soligo, "Rural-Urban Migration, Agricultural Output, and the Supply Price of Labour in a Labour-Surplus Economy", OEP, vol. 20 (2), July 1968 pp. 230-249.

19) A.K. Sen, "Peasants and Dualism with or without Surplus Labour", JPE, vol. 74 (5), Oct. 1966 pp. 425-450

20) Ibid., p. 426.

variations of income and work per person when the size of the family is reduced by the withdrawal of a working member. (21) Thus, according to Sen, the assumption of zero marginal productivity is neither a necessary nor a sufficient condition for the existence of surplus labour. (22)

Sen's theory can also be extended to explain how an equilibrium situation can arise in a dual economy so that a labour surplus in the traditional sector can exist at the same time as an unfulfilled demand for labour in the modern sector. The urban "real labour cost" is usually higher than the rural "real labour cost" and therefore the urban wage rate is required to be higher than the rural rate of remuneration before the rural worker migrates to the urban area. The urban wage rate has therefore got to be high enough to act as an "enticement wage" in order to draw the labourer out of the rural area. If the urban wage is lower than the "enticement wage" rural unemployment and excess urban demand can exist simultaneously.

21) Ibid., pp. 429, 431

22) Ibid., p. 431

Todaro's Model of Rural-Urban Migration

In order to understand the economic behaviour of the migrant labourers with regards to the unemployment aspect of the underutilisation of labour it is necessary to look at the theory of urban unemployment and the existence of rural-urban migration. Todaro has formulated "an economic behavioural model of rural-urban migration" (23) which explains the basic behavioural and economic principles of this phenomenon and which forms the basis of this section. This model has subsequently been elaborated upon and extended by Todaro and Harris, (24) but the basic model originally developed by Todaro remained essentially unaltered. Other refinements have also been added to the model (25) which have served to make it more comprehensive and in this section some aspects of the model will also be developed.

The central theme of the Todaro model is the comparison by the potential migrant of the present value of expected income streams from employment in the rural and urban areas. When the present value of the expected urban real income stream exceeds that of the rural income stream migration from the rural to the urban sectors occurs.

23) See M.P. Todaro, "A Model of Labour Migration and Urban Unemployment in Less Developed Countries", AER, vol. 59 (2), May 1969, p. 138.

24) J.R. Harris and M.P. Todaro, "Migration, Unemployment and Development: A Two-Sector Analysis", AER, vol. 60, March 1970, p.p. 126-42.

25) G.E. Johnson, "The Structure of Rural-Urban Migration Models", Eastern African Economic Review, vol. 3 (1), June 1971, pp. 19-28; M.J. Frankman, "Labour Migration in Less Developed Countries: Comment", Manpower and Unemployment Research in Africa, vol. 5 (1) April 1972, pp. 1-5.

Todaro believes that a realistic picture of labour migration in less developed countries is one that views migration as a two-stage phenomenon. "The first stage finds the unskilled rural worker migrating to an urban area and initially spending a certain period of time in the so-called 'urban-traditional' sector. The second stage is reached with the eventual attainment of a more permanent modern sector job." (26) In deciding to migrate to the urban sector the rural worker "must balance the probabilities and risks of being unemployed or sporadically employed in the city for a certain period of time against the favourable urban wage differential." (27)

The dynamics of the model is summarised as follows:

"Suppose we consider a developing economy in the very early stages of industrialisation such that almost the entire population resides in rural areas. The urbanisation process is just beginning to accelerate but as yet the pool of urban unemployed is relatively small so that the probability of obtaining a job is high. Therefore, given a significantly positive urban real wage premium and a positive rate of urban job creation exceeding the natural rate of urban population growth, the resulting urban expected real income differential induces rural urban migration such that the labour force grows at a faster rate than that of job creation. This more rapid growth of labour supply results in an increase in the relative size of the urban traditional sector with the result that ceteris paribus the probability of a rural migrant finding a job in the next period is somewhat lower. This lower probability should result in a slowing down of the rate of urban labour force growth. Eventually, however, the equilibrating function stabilizes the urban unemployment rate at some level." (28)

26) Todaro, p. 139

27) Ibid., p. 140

28) Ibid., p. 144

Extension to and Modification of Todaro's Model

Todaro's model assumes that there are two stages of migration. In the first stage the migrant labourer moves to the urban area and spends some time in the urban-traditional sector. To all effective purposes he can be considered unemployed. In the second stage he finds permanent employment in the urban sector. This theory can be extended to explain the length of time that a migrant labourer spends in the urban traditional sector.

In the first place it is necessary to change the assumption of Todaro that all the workers are homogeneous unskilled workers and that all the urban job opportunities are open to all the workers and that they do not differ in the degree of skill required, but only in the expected income streams. Instead, we have to assume a heterogeneity of both workers and jobs. Some of the migrant labourers are assumed, for various reasons like being educated, having acquired a skill through work experience, or having received technical training, or because of economic demands of their households, to have higher employment aspirations than other migrant workers. This is reflected economically by the fact that they will not accept an urban job unless the urban-rural real income differential, is above a certain minimum level. On the other hand the employment opportunities are not all assumed to be unskilled jobs, but a certain proportion of them are assumed to be sufficiently rewarding to match up to the expectations of the workers with higher aspirations. Economically these are the better paid jobs.

It can then be shown mathematically that the average duration of the unemployment is directly proportional to the ratio of new jobs relative to the number of unemployed migrant labourers. It is also directly proportional to the square of the planning horizon of the worker.

The migrant labourer with high aspirations is therefore a risk-taker. He is willing to turn down certain employment opportunities and risk being unemployed for a period in the hope that a suitable job that matches his expectations will turn up. The theory outlined above determines the average time period that such migrant labourers remain unemployed.

The paradox, outlined in part one, of the simultaneous existence of unfulfilled demand of labour in the urban sector at a wage rate that is higher than the rural remuneration and of unemployment in the rural sector, can also be explained by this behavioural model. Migrant labourers with increased job expectations are willing to take the risk of foregoing unattractive employment opportunities and wait for better paid jobs to match their expectations. It is a structural form of unemployment although it can more aptly be described as a "psychological" structural unemployment than an "occupational" structural unemployment since the workers could, if they wanted to, do the less popular work that is available.

3. CAUSES OF UNDERUTILISATION OF LABOUR

(1) Shortage of Work Approach

The analysis of the immediate causes is complicated by the fact that a worker has two separate labour markets to choose from and he can spend some time of the reference period working in either of the two or in both. Some of the causes of unemployment and underemployment are listed below:

- 1) Seasonal fluctuation of demand for labour in the traditional rural sector: This is due to the fact that in the rural sector there is not an adequate demand for labour sustained throughout the whole year. (29)

The extent of the seasonal fluctuation of demand is a function of the type and size of crops produced, the diversification of the farming, the size and nature of the land holdings, the climatic factors particularly the rainfall, and the degree of mechanisation of production. These underlying structures have to be taken into consideration in any serious attempt to measure seasonal underemployment of labour and to plan for its elimination.

- 2) "Psychological" structural unemployment and underemployment: This takes place on account of employment opportunities that do not match up to the raised expectations of the migrant workers. In Sen's terminology used in part two the urban "real labour cost" thus is higher than the urban wage rate and the prospective migrant labourer considers the expected gains from urban employment to be outweighed by the losses due to an absence from home.

29) W.C. Robinson, pp. 378-9.

The urban "real labour cost" can be high either because the marginal disutility of work is high or because the marginal utility of income is low. Factors which decrease the marginal utility of income are the following:

- a) higher cost of living in the urban sector because of transport costs, rents and rates, sanitation, water and electricity, and so on; (30)
- b) the development of new tastes in the urban area which raises the desire to consume more goods and subsequently lowers the marginal utility of income; (31) and
- c) the remission of money back to the rural household. This lowers the marginal utility of income since the labourer does not himself enjoy the fruits of his marginal units of labour other than the psychic income of knowing that he is caring for the needs of his family.

Other factors operate by increasing the marginal disutility of work. These are the following:

- a) real and expected danger to life and limb in some of the employment opportunities in the urban area, particularly that of mining; (32)
- b) raised expectations of the workers who have had an education or training or who have held down good jobs in the urban sector before. In the analysis above it has been shown how risk-taking by the migrant labourer leads to periods of unemployment while waiting for a suitable job to turn up;

30) W.A. Lewis, p. 410; S.T. van der Horst, African Workers in Town, A Study of Labour in Cape Town, (Oxford University Press, 1964), p. 46.

31) W.A. Lewis, p.411;

32) F.A. Wilson, Labour in the South African Gold Mines 1911-69, (Cambridge University Press, 1972), p. 21, points out that 17 670 Africans had died as a result of accidents in the gold mines between 1936 and 1966.

- c) the higher work effort that is required in the urban sector. This can either be due to the fact that the worker now has to work a fixed number of hours per day and that these hours are longer than the average hours worked in the rural sector, or it can be due to the intensity and speed of the work due to mechanisation; (33)
- d) a sense of job insecurity on the part of the workers who fear that they can be arbitrarily dismissed from work. (34)

In addition there are factors which do not pertain directly either to income or work, but can be considered to have the effect of raising the urban "real cost of labour." These are:

- a) the social environment and living conditions of migrant labourers in the urban areas. A careful sample survey of the attitudes of Xhosa labourers in Port Elizabeth, revealed that "the contents of that which determines (the Blacks') negative disposition towards the city, is significant First and foremost stands the moral decay of the city life. The list of wrongs which are usually enumerated without hesitation is impressive and oppressive. It is murder, robbery, terrorising gangs, fraud, rape and sexual permissiveness, while demoralisation of the youth and disruption of family life are accompanying manifestations". (35)

33) A.K. Sen, pp. 438-9; also J.J.F. Durand, Swartman, Stud en Toekoms (Cape Town, Tafelberg, 1970), p. 46.

34) J.J.F. Durand, pp. 54, 57.

35) Ibid., pp. 24-5; Also see S.T. van der Horst, p. 46; M. Wilson and A. Mafeje, Langa, A Study of Social Groups in an African Township, (Oxford University Press, 1963), p. 16; and P. Mayer, Townsmen or Tribesman, 2nd edn., (OUP 1971), p. 72

- b) Insecurity of residence and employment rights. These are due to the legislation and official utterances that consider the African's presence in the urban area to take place only at the bidding of the white man.
 - c) Long run insecurity in the urban sector because of insufficient provision by employers of migrant labourers of old-age pensions and other social benefits.
 - d) The hardship to the migrant labourer of being separated from his wife and family for extended periods of time. (36) In addition to that there is the cultural tie with his own rural environment that has to be overcome and the possible fall in production of his household's agricultural production because of his absence for the greater part of the year.
- 3) "Physical" or "occupational" structural unemployment and underemployment: This is due to the existence of relatively fixed proportions of factors of production. (37) In the South African case the industrial colour-bar serves to keep the white and African labourers broadly as two separate factors of production with fairly fixed proportions. (38)

36) M. Wilson and A. Mafeje, p. 19

37) W.C. Robinson, pp. 381-2.

38) For example, the white trade unions of the gold mines oppose the employment of Africans in certain jobs and also resist the ratio of Africans to Whites from rising above a certain maximum. F. Wilson, Labour in the S.A. Gold Mines, found an extremely high correlation between the levels of white and African employment between 1910 and 1969. 85% of the variance in the level of African employment in any year could be explained by differences in the level of white employment.

- 4) Labour immobility: This can contribute towards unemployment on a regional basis. This can be the case either because transport facilities are lacking or because of the government's policy of zoning the recruitment areas.
- 5) Cultural values: These may be such that the migrant labourers voluntarily work less time than is considered to be equivalent to full employment.
- 6) Social practices such as looking after children, or performing certain rites and rituals can also contribute towards the underemployment of labourers in the traditional sector.

(2) Inadequacy of Income Approach

The immediate causes of inadequate incomes can be classified as follows:

- 1) Unbalanced composition of the household. The composition of a household may be such that it has a relatively large number of dependants compared to breadwinners, e.g. in the case when a widow is the head of a household. (39) In such a case although the productivity and earnings of the breadwinner(s) may be relatively high, the income is still not adequate to meet the requirements of the household.
- 2) Low productivity of labour. If we assume that a labourer earns his marginal revenue product and fails to raise the income of his household above the EML then low productivity is causing the inadequate income. This aspect usually relates to low physical productivity of labour and discussion of this is left to the waste of human resources approach.

39) This household type is surprisingly common in the Ciskei and Transkei. See P.J. de Vos, p. 64.

3) Exploitation. (40)

~~(40)~~ When a worker is not receiving a "fair" (41) wage or, more strictly, when his remuneration is below his marginal revenue product he is being exploited. This exploitation is made easier in cases where the mobility of the labour is curtailed, (42) the employer is a monopolist, or if labourers are not allowed to organise themselves into legitimate trade unions that can protect their interests. The labour bureaux recruitment system does not allow the migrant labourers to seek employment on a competitive basis and the gold mines have a monopsonistic method of recruiting labour. (43) Effective trade unions with the right to strike are illegal for all Africans in South Africa. From this we can conclude that exploitation of migrant labourers is likely to exist.

- 4) Low net prices for agricultural goods. The traditional rural sector is not entirely a subsistence sector and since exchange of agricultural production for other goods takes place the net price obtained for products sold via local traders influences household income as well.

40) In the Pigovian and not the Marxian sense. For an outline of the Pigovian meaning see J.R. Hicks, Theory of Wages, 2nd edition, (London, Macmillan, 1966), pp. 81-6.

41) Ibid., p. 82

42) Ibid., p. 83

43) F. Wilson, Labour in the S.A. Gold Mines, pp. 3-5

- 5) Insufficient remittances. It is possible that a migrant labourer remits an insufficient proportion of his income to the traditional sector. There exists an upper limit, R' , to the proportion of his own income which a migrant labourer can remit. This limit is determined by his own EML in the urban area. If the migrant labourer actually is in a position to raise the per capita income of his distant household above the EML before his remittances reach such critical proportion R' , but he fails to do so, then his remittances can be said to be too small a proportion of his income.

(3) Waste of Human Resources Approach

The waste of human resources approach considers one aspect of labour underutilisation, i.e. the loss of human production potential. Thus, low productivity is an indication of the waste of human resources. In an economy with oscillating migrant labour there are numerous reasons why a migrant worker's productivity is low. Some of the more immediate causes are listed below:

- 1) Inefficient utilisation of the available factors of production in the urban and traditional rural sectors can cause low productivity. In the industrial sector the migrant labourer is often invisibly underemployed because of his inability to acquire skills in the short period he works at a particular firm. (44) Inefficient labour management also occurs on a wide scale. (45) Socio-political, institutional and legal factors also contribute to the labourers' invisible underemployment, i.e. many occupations are closed to them as a result of conventional or statutory restrictions.

44) D. Hobart Houghton, The South African Economy, 2nd edition, (Oxford University Press, 1967), pp. 87-8.

45) Ibid., p. 91

In the agricultural sector low productivity of the land can also be caused by extensive periods of absence on the part of the migrant labourer. Inefficient farm management and a poor use of the available factors of production can also cause low productivity. Part of this can be due to cultural factors preventing the farmers from modernising their means of production and from striving to be highly productive. (46)

The inefficient organisation of domestic labour in the traditional sector can also contribute to a waste of human resources. Often, for very little capital expenditure on the part of the household the domestic chores could be changed, economising with respect to time. Here too the social, cultural and institutional matrix determining the traditional households' way of life should be seen as a cause of the underutilisation.

- 2) A shortage of certain factors of production can cause low labour productivity. In the rural sector a shortage of land and capital like tractors, harvesters, and so on can prevent the farmer from attaining a high productivity. There are also other more indirect inputs of production which, if absent, can also reduce the farmer's productivity, e.g. water, power, transport and communication, agricultural credit, extension services, and market institutions. Short supply of one or more of these factors of production will enhance diminishing returns with regard to labour.
- 3) Work-spreading on the part of the migrant labourers can lower the productivity of the workers.
- 4) A lack of education and training can prevent the workers from attaining their potential production level.
- 5) Workers may not be able to be very productive because they are undernourished or suffering from malnutrition. (47)

46) W.C. Robinson, p. 376

47) Ibid., pp. 375-6.

4) MEASUREMENT OF THE UNDERUTILISATION OF LABOUR

(1) Shortage of Work Approach

The employment and "unemployment" (48) figures are given in Tables 1 (i) to 1 (iii). The totals in these tables relate to people who were actually resident in the districts at the time the surveys were made plus the migrant labourers from the districts who were not in the districts at that time.

Workers in the employed category are all the workers who were actually working at the time of the survey, or migrant labourers who were on leave and were intending to return soon to their jobs in the urban sector, or people who were not working at the time, but had been working of late, i.e. who had been working by up to as much as 4 months ago.

Workers in the "unemployed" category are those who were doing absolutely no work at the time of the survey nor had they been doing any work over the last period of 4 months. These people own no land, have no right of land use anywhere, do not work as farm assistants nor do they fulfill household tasks (in the case of women). "Unemployment" is therefore very rigidly defined as the case where people are not working at all or have done no work over the last period of 4 months.

There are inadequacies in the data insofar as the shortage of work approach is concerned.

(48) To avoid any confusion "unemployment" refers to unemployment as defined and used in this study.

(2) The Inadequacy of Income Approach

The EML for the areas under consideration is R 63.94. The EML is calculated to be 119% of the PDL which is rather low.

The average monthly income of the households is evaluated in Table 2. It shows that, on average for all the households, the total household income from all sources is only 38% of the PDL and 32% of the EML. Furthermore 91% of the households in the Ciskei and 85% of the households in the Transkei receive an income that is below the PDL. With some reservations, about the reliability of the results it is definitely the case that widespread poverty exists in these rural areas. These results are borne out by reports and studies of undernourishment, malnutrition and infant mortality rates in and around these areas. (49)

49) See M. Horrell, Surveys, 1969, 1970, 1971, chapters on Health and Nutrition; also J.V.O. Reid, "Malnutrition", and H.L. Watts, "Poverty", in P. Randall, ed., Some Implications of Inequality (Johannesburg), Spro-Cas, 1971) for a more general discussion.

(3) Waste of Human Resources Approach

The data is least satisfactory when trying to establish the extent of invisible underemployment and its relationship with other phenomena like poverty. The best that can be done is to show indirectly what some of the causes of the waste of human resources are by making as much use of the available data as possible.

The determination of the waste of human resources in the Ciskei and Transkei districts is carried out according to the three categories expounded in part one. These are (1) employment in occupations below the highest existing skill of the worker; (2) employment below the highest potential skill of the worker; and (3) employment below the full productive capacity of the worker either because the enterprise is inefficient or because the worker is prevented from functioning at his highest capacity.

(1) While it is very difficult to determine what a person's highest skill-attainment could be, we can indirectly conclude that there must be invisible underemployment of labour in the Ciskei and Transkei by examining the occupational structure of workers as indicated in Tables 3 and 4. No less than 45% of the men in the Ciskeian areas and 55% of the men in the Transkeian areas are classified as unskilled workers while, at the other end of the occupational spectrum, only 4% and 3% respectively have professional and semi-professional occupations. The occupational structure is also relatively undifferentiated. Farming and unskilled labour account for over 80% of all the male workers in both the Ciskei and Transkei. For women the situation is even more stereotyped: 98% of the women in the Transkeian areas are either housewives or domestic servants. It is thus conceivable that there is a very large proportion of workers who are in occupations that are well below their highest skills.

(2) Once again it is not possible to determine the number of workers who are employed in occupations below their potential, because they had insufficient education and training. We can, however, infer that this must be the case by looking at the educational training of the workers as indicated in Tables 5 and 6. Amongst the men 28% and 49% in the Ciskeian

Transkeian areas respectively have received no formal education, and amongst women 24% and 61% respectively have had no schooling at all. 86% of the men and women in the Ciskeian areas and 91% of the men and women in the Transkeian areas have received less than 9 years' education, i.e. never attended a secondary school.

It can therefore safely be concluded that these rural workers are not extensively educated and are subsequently in occupations below their highest potential skill because of a lack of education.

The situation is however a dynamic one and there is a definite rising trend in education. The younger the workers are the more highly are they educated. For children in the 7 - 15 years age group only 11% of the Victoria-East and 8% of the Middledrift boys had no formal education while 7% and 5% of the girls respectively had no education.⁵⁰

- (3) To try and show that workers are functioning below their capacity from the available statistics is even more difficult than the two cases discussed above.

It is possible that the law of diminishing returns of labour is setting in because of the small size of the land holdings of most of the households as indicated in table 7. According to official calculations, the size of an "economic arable plot" from which a household can be expected to make a living is considered to be 10.5 acres of arable land in the Umtata district of the Transkei and somewhere between 12.7 and 19.0 acres in the King William's Town district of the Ciskei.⁵¹

50 P.J. de Vos, pp. 238-9

51 M. Horrell, The African Reserve, p.38. These are the official government estimates based on the existing methods of production. However, Merle Lipton has argued in "The South African Census and the Bantustan Policy", The World Today, vol. 28 (6), June 1972, pp. 257-71, that with carefully planned labour-intensive agricultural production methods the size of the holdings required could be reduced to 4.2 acres per household.

Table 7 indicates that 98% of the households in the Ciskeian areas have less than 13 acres of arable land available and that 95% of the households in the Transkeian areas have less than 11 acres of arable land available. Taking these figures as provisional guides, it is reasonable to expect that diminishing returns of labour must come into force. This conclusion is strengthened further by noting from Table 7 that the size of the arable plot of the median family in the Ciskeian areas is 4 acres and of the median family in the Transkeian areas is 5 acres.

Although it is not possible to say to what extent each of these three categories contribute towards the waste of human resources, their combined contribution is quite considerable. This is so because of the wide-spread poverty present in these areas which cannot be explained by the existence of only unemployment and underemployment. There must also be invisible underemployment of labour that is considered to be "fully employed".

Conclusion

The major points which this paper have brought out are to show up the inadequacy of the concept "unemployment" and to replace it by the concept "underutilisation of labour" which manages to incorporate all the major aspects of the employment of labour.

An evaluation of the data made available by Prof. de Vos indicated that widespread and serious underutilisation of labour existed in the Ciskei and Transkei in the late 1960's. The data was insufficient to indicate the dimensions of the various aspects of labour force underutilisation as defined in this paper. This is however not surprising as this data was not collected primarily to determine the degree of underutilisation of labour.

Johann Maree
University of Cape Town,
27th May, 1973.

Tables I (i) (ii) (iii)

Employment and "Unemployment" in Districts in the Ciskei (1965) and the Transkei (1968)¹

Table I (i) Males, 16 years and older

Category	Ciskei						Transkei					
	Victoria-East		Middledr.		Total		Bizana		Kentani		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Employed ²	1153	90.4	1148	89.1	2301	89.8	1290	71.7	1313	84.7	2603	77.7
"Unemployed"	122	9.6	140	10.9	262	10.2	509	28.3	237	15.3	746	22.3
Labour Force	1275	100	1288	100	2563	100	1799	100	1550	100	3349	100
Pensioners ³	53		41		94		15		34		49	
Unspecified	23		14		37		3		38		41	
Total ⁴	1351		1343		2694		1817		1622		3439	

Table I (ii) Females, 16 years and older

Category	Ciskei						Transkei					
	Victoria-East		Middledr.		Total		Bizana		Kentani		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Employed ²	1493	90.9	1590	90.9	3083	90.9	1629	72.0	1537	83.8	3166	77.3
"Unemployed"	149	9.1	160	9.1	309	9.1	633	28.0	298	16.2	931	22.7
Labour Force	1642	100	1750	100	3392	100	2262	100	1835	100	4097	100
Pensioners ³	41		20		61		16		64		80	
Unspecified	16		6		22		2		50		52	
Total ⁴	1699		1776		3475		2280		1949		4229	

Table I. (iii)
Total, Males and Females, 16 years and older

	Ciskei						Transkei					
	Victoria-East		Middledr.		Total		Bizana		Kentani		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Employed ²	2646	90.7	2738	90.1	5384	90.4	2919	71.9	2850	84.2	5769	77.5
"Unemployed"	271	9.3	300	9.9	571	9.6	1142	28.1	535	15.8	1677	22.5
Labour Force	2917	100	3038	100	5955	100	4061	100	3385	100	7446	100
Pensioners ³	94		61		155		31		98		129	
Unspecified	39		20		59		5		88		93	
Total ⁴	3050		3119		6169		4097		3571		7668	

Notes

- 1) These figures include migrant workers who are temporarily absent;
- 2) in the case of females this includes housewives.
- 3) Pensioners include both old-age pensioners and disability pensioners;
- 4) scholars and students have been excluded from these tables.

Sources

Ciskei - P.J. de Vos et al., 1970,

Tables VIII, IX and X, pp. 281, 283, 284 and 282.

Transkei - P.J. de Vos, unpublished data, 1968.

P.J. de Vos et al., A Socio-Economic and Educational Survey of the Bantu Residing in the Victoria-East, Middledrift and Zwelitsha Areas of the Ciskei, (University of Fort Hare, 1970).

Table 2

Extent of Poverty

	Ciskei			Transkei			Both
	Vict.- East	Middle- drift	Total	Bizana	Kentani	Total	Total
Monthly Avge. Income ¹	R 19.97	R 17.87	R 18.93	R 20.73	R 22.94	R 21.73	R 20.33
PDL Coefft. ²	0.37	0.33	0.35	0.39	0.43	0.40	0.38
Adequacy Ratio ³	0.31	0.28	0.30	0.32	0.36	0.34	0.32
% Households with Income below PDL	91.2 %	90.3 %	90.7 %	87.8 %	82.0 %	85.1 %	87.9 %

Notes

1) At 1968 prices

2) Poverty Datum Line Coefficient = $\frac{\text{Average Household Income}}{\text{PDL}}$

= Available Income Ratio

3) Adequacy Ratio = $\frac{\text{Average Household Income}}{\text{EML}}$

EML = Effective Minimum Level

Sources

Concepts:

PDL Coefficient - Hubbard, p. 56;

Available Income Ratio - Batson, p. 1;

Adequacy Ratio - Tabbarsh, p. 62.

Ciskei: P.J. de Vos et al., Tables III A, E, F,
pp. 299, 304, 306.

Transkei: P.J. de Vos, unpublished data, 1968.

Table 3

Occupational Structure, Employed Males

Occupation	Ciskei						Transkei					
	Vict.-East		Middledr.		Total		Bizana		Kentani		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Admin. + Clerical ¹	19	1.65	10	0.87	29	1.26	40	3.10	23	1.75	63	2.42
Business (own)	5	0.43	5	0.44	10	0.43	0	0.00	2	0.15	2	0.08
Business (employed)	16	1.39	4	0.35	20	0.87	19	1.47	8	0.61	27	1.04
Domestic Service	5	0.43	6	0.52	11	0.48	6	0.47	0	0.00	6	0.23
Farmer (self-employed)	283	24.54	466	40.59	749	32.55	353	27.36	326	24.83	679	26.09
Farm Labourer	61	5.29	57	4.97	118	5.13	0	0.00	0	0.00	0	0.00
Health Service	5	0.43	1	0.09	6	0.26	1	0.08	1	0.08	2	0.08
Housekeeper	0	0.00	0	0.00	0	0.00	0	0.00	5	0.38	5	0.19
Labour:												
(Skilled + Semi-skilled)	114	9.89	41	3.57	155	6.74	24	1.86	15	1.14	39	1.50
(Unskilled)	545	47.27	485	42.25	1030	44.76	711	55.12	720	54.84	1431	54.98
Mineworker	18	1.56	18	1.57	36	1.56	23	1.78	176	13.40	199	7.65
Professional ²	38	3.30	34	2.96	72	3.13	49	3.80	21	1.60	70	2.69
Professional (semi) ³	5	0.43	9	0.78	14	0.61	6	0.47	2	0.15	8	0.31
Services	24	2.08	3	0.26	27	1.17	34	2.64	7	0.53	41	1.58
Traditional Occupations ⁴	15	1.30	9	0.78	24	1.04	24	1.86	7	0.53	31	1.19
T o t a l	1153	100	1148	100	2301	100	1290	100	1313	100	2603	100

- Notes
- 1) Chiefs were included because "they were remunerated by the State for their judicial and other duties".
 - 2) Besides teachers and clergymen, etc., agricultural extension officers were also included.
 - 3) These people "required some training in specialized fields, such as dipping-tank inspectors".
 - 4) Professional thatchers of huts, manufacturers of pipes and grass-mats, herbalists, witchdoctors, etc.

Sources Ciskei - P.J. de Vos et. al., Tables VIII and IX, pp. 281, 283 and pp. 261-67.
 Transkei - P.J. de Vos, unpublished data, 1968.

Occupational Structure, Employed Females
Table 4

Occupation	Ciskei						Transkei					
	Vict.-East		Middledr.		Total		Bizana		Kentani		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Business Assts.	0	0.00	7	0.44	7	0.23	0	0.00	7	0.46	7	0.22
Domestic Service	329	22.04	235	14.78	564	18.29	59	3.62	31	2.02	90	2.84
Farmer (self-employed) ¹	6	0.40	7	0.44	13	0.42	6	0.37	24	1.56	30	0.95
Health Service	3	0.20	2	0.13	5	0.16	31	1.90	9	0.59	40	1.26
Housewife/keeper	1130	75.69	1314	82.64	2444	79.27	1416	86.92	1394	90.70	2810	88.76
Labour:												
(Skilled + Semi-skilled)	0	0.00	0	0.00	0	0.00	3	0.18	0	0.00	3	0.09
(Unskilled)	0	0.00	0	0.00	0	0.00	76	4.67	37	2.41	113	3.57
Professional	20	1.34	11	0.69	31	1.01	37	2.27	31	2.02	68	2.15
Professional (semi)	0	0.00	9	0.57	9	0.29	0	0.00	0	0.00	0	0.00
Services	1	0.07	1	0.06	2	0.06	1	0.06	0	0.00	1	0.03
Traditional Occupations ²	4	0.27	4	0.25	8	0.26	0	0.00	4	0.26	4	0.13
T o t a l	1493	100	1590	100	3083	100	1629	100	1537	100	3166	100

Notes

- 1) Widowed Leads of households who classified themselves as farmers.
- 2) Herbalists and witchdoctors.

Sources

Ciskei - P.J. de Vos et. al., Table X, p. 284 and pp. 262 - 65, 282.
Transkei - P.J. de Vos, unpublished data, 1968.

Educational Level Attained

Table 5

Household Males, 16 years and over

Level of Education (No. of years attended)	Ciskei						Transkei					
	Victoria-East		Middle-drift		Total		Bizana		Kentani		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No Education	304	22.6	419	33.5	723	27.9	835	43.8	927	55.0	1762	49.1
Lower Primary (1-4 years)	272	20.2	243	19.4	515	19.8	282	14.8	247	14.7	529	14.7
Higher Primary (5-8 years)	574	42.7	428	34.2	1002	38.6	558	29.3	416	24.7	974	27.1
Secondary (9-13 years)	119	8.8	117	9.4	236	9.1	188	9.9	55	3.3	243	6.8
Tertiary	48	3.6	37	3.0	85	3.3	43	2.3	41	2.4	84	2.3
Unspecified	28	2.1	6	0.5	34	1.3	0	0.0	0	0.0	0	0.0
T o t a l	1345	100	1250	100	2595	100	1906	100	1686	100	3592	100

Table 6

Household Females, 16 years and over

Level of Education (No. of years attended)	Ciskei						Transkei					
	Victoria-East		Middle-drift		Total		Bizana		Kentani		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No Education	342	17.9	590	30.6	932	24.3	1182	48.9	1484	75.3	2666	60.8
Lower Primary (1-4 years)	230	12.0	236	12.3	466	12.1	255	10.6	108	5.5	363	8.3
Higher Primary (5-8 years)	1022	53.4	867	45.0	1889	49.2	707	29.3	273	13.9	980	22.3
Secondary (9-13)	237	12.4	190	9.9	427	11.1	209	8.7	49	2.5	258	5.9
Tertiary	42	2.2	32	1.7	74	1.9	62	2.6	57	2.9	119	2.7
Unspecified	40	2.1	11	0.6	51	1.3	0	0.0	0	0.0	0	0.0
T o t a l	1913	100	1926	100	3839	100	2415	100	1971	100	4386	100

Sources Tables 5 and 6

Ciskei - P.J. de Vos et. al., Tables XII, XIII, XVII, XVIII, XX, XXI,
pp. 200, 202, 214, 216, 225, 229.

Transkei - P.J. de Vos, unpublished data, 1968.

Table 7

Land Availability per Household

Arable Land Available Acres	Ciskei						Transkei											
	Victoria- East			Middle- drift			Total			Bizana			Kentani			Total		
	No.	%		No.	%		No.	%		No.	%		No.	%		No.	%	
	No.	%		No.	%		No.	%		No.	%		No.	%		No.	%	
No. Land	498	47.38	188	18.23	686	32.95	215	18.02	89	8.97	304	13.91						
1 - 2	32	3.04	47	4.56	79	3.79	92	7.71	20	2.02	112	5.13						
3 - 4	77	7.32	198	19.20	275	13.21	333	27.91	173	17.44	506	23.15						
5 - 6	109	10.37	363	35.20	472	22.67	270	22.63	293	29.54	563	25.76						
7 - 8	281	26.74	192	18.62	473	22.72	125	10.48	198	19.96	323	14.78						
9 - 10	15	1.43	17	1.65	32	1.53	128	10.73	140	14.11	268	12.27						
11 - 12	12	1.14	9	0.87	21	1.01	12	1.01	37	3.73	49	2.24						
13 - 14	3	0.29	3	0.29	6	0.29	5	0.42	7	0.70	12	0.55						
15 - 16	17	1.62	8	0.77	25	1.20	7	0.59	16	1.61	23	1.06						
17 - 20	0	0.00	4	0.39	4	0.19	1	0.08	14	1.40	15	0.68						
21 - 25	7	0.67	1	0.10	8	0.38	2	0.17	2	0.20	4	0.18						
26 - 30	0	0.00	1	0.10	1	0.05	0	0.00	1	0.10	1	0.05						
31 - 35	0	0.00	0	0.00	0	0.00	0	0.00	2	0.20	2	0.09						
36 - 45	0	0.00	0	0.00	0	0.00	3	0.25	0	0.00	3	0.14						
T o t a l	1051	100	1031	100	2082	100	1193	100	992	100	2185	100						

Sources Ciskei - P.J. de Vos et. al., Table II C, p. 296.
 Transkei - P.J. de Vos, unpublished data, 1968.