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MENT RESEARCH
PROJECTPRELIMINARY RESULTS OFA SURVEY OF THE LABOUR MARKET ON MIXED FARMS IN TRANS-NZOIA, KENYA

By

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I. INTRODUCTION

The development of the agricultural sector has been recognised after lengthy academic debate⁽¹⁾ as being crucial for a successful process of comprehensive economic development to take place. This seems self evident in Kenya, where the agricultural sector directly accounted for 41% of GNP and about 85% of total employment in 1964⁽²⁾. In referring to agricultural development, writers have shown primary concern with physical increases in the volume of cash and food crops, increasing levels of efficiency in the utilization of resources and introducing more advanced technology. It is argued that a vigorous policy of development of the sector is essential to:

- (a) Provide increased food supplies to a growing population (where money incomes are rising and where relatively high income elasticities for food products are observed) in order to inhibit internal inflationary pressures;
- (b) expand the agricultural export sector which would supply needed foreign exchange;
- (c) Provide revenues, both private and public, to be used in the financing of further development, particularly in the non-agricultural sectors;

(1) See John W. Mellor, The Economics of Agricultural Development, Chapters 1 and 2, Cornell University Press, Ithaca, N.Y., 1966.

(2) Republic of Kenya, Ministry of Economic Planning and Development, Development Plan 1966-1970, Nairobi, Government Printer, 1966, pp. 100-102.

_____, Kenya Statistical Digest, Vol. V, No. 11, June 1967, p.2.

The total labour force (male and female) is estimated by the Plan to be 3,200,000 of whom 434,000 are reported as non-agricultural employees (13.6% of the total labour force). In addition to the 329,000 persons listed in the monetary agricultural sector, it appears that the bulk of the remaining 2,437,500 persons in the labour force are engaged in the non-monetary agricultural sector. Thus, the total labour force engaged in agriculture can be crudely estimated at 2,766,500 persons or 86.5% of the total labour force.

- (d) provide increased incomes in the agricultural sector which would raise the level of welfare in the sector and concurrently provide an internal market for expanding domestic industry;
- (e) release labour for growing industrial demand. (3)

The latter reason is now rarely mentioned as the experience in country after country indicates growing levels of unemployment and underemployment, often accompanied by impressive gains in production. In part this can be explained by rapid population growth which has occurred throughout the less developed world in the post-war period. But this is by no means the only cause - witness the increasingly common situation where absolute levels of employment (at least in non-agricultural sectors) decline or stagnate as GNP grows (4). In the case of Kenya, the level of reported employment in 1966 was 603,100, only 6,400 greater than 1956 levels, extension of coverage of reported employment in 1964 added some 42,200 employees to the total. Thus, it appears that reported employment has declined by about 45,000 between 1956-1966 while the value of GNP increased by \$125 million (5). Unfortunately

(3) See: W.A. Lewis, The Theory of Economic Growth, Homewood III., Richard D. Irwin, 1955

_____, "Economic Development with Unlimited Supplies of Labour", The Manchester School, XXII, May 1954, pp. 139-91

_____, "Unlimited Labour: Further Notes", The Manchester School, XXVI, Jan. 58, pp. 1-32

B.F. Johnston and J.W. Mellor, "The Role of Agriculture in Economic Development" American Economic Review, 11 Sept. 1961, pp. 566-593.

J. Fei & G. Ranis, Development of the Labour Surplus Economy, Homewood III, R.D. Irwin, 1964.

(4) See: F.H. Harbison, "The Generation of Employment in Newly Developing Countries" Conference on Education, Employment and Rural Development, University College, Nairobi, 1966 and

L.G. Reynolds, "Wages and Employment in a Labour Surplus Economy", American Economic Review, Vol. LV, March 1965.

(5) Robert S. Ray, "The Structure of Employment in Kenya", Conference on Education, Employment and Rural Development, University College, Nairobi 1966 and

Kenya Statistical Digest, op. cit., pp. 2-4.

the Kenya experience is representative of East African as a whole. The net effect of these circumstances is that the agricultural sector no longer needs to "release" labour, but rather has to "absorb" labour. Whether or not there is (or was) underemployment of labour (in the strict Lewis sense of the marginal product of labour being equal to zero) where agricultural output would not decline if people were moved out of agriculture and employed in the "modern" sector is no longer a relevant issue. The really important question has now become how to effectively absorb the large increases in the agricultural labour force while expanding agricultural output. An extremely crude estimate, based on the 1962 10% sample census indicates that 500,000 - 600,000 males came of employable age (15 yrs.) between 1962 and 1967. Most of these people, presumably, are engaged in the agricultural sector. At least the same number of men will enter the employable age in both the 1968-1972 and 1973-1977 periods. It should be emphasized that these people are already born. Irrespective of how successful the economy is in meeting the employment goals of the current plan⁽⁶⁾ there is at least that severe social, political and economic strains will be increasingly evident in the agricultural sector⁽⁷⁾.

One cannot look at the historical experience of the presently developed countries as a guideline for future development in East Africa as initial parameters of the two groups of countries are so radically different. Although in the early stages of development the agricultural sector has historically provided expanded output and employment opportunities, no developed country was ever called on to raise output and employment as rapidly or to the extent that seems necessary in today's developing economies which face severe and continuing population pressure (as well as a good many other difficulties).

Nor does "development theory" appear to have much to offer at present. The Lewis-Ranis-Fei model(s), in part based on historical experience, is basically concerned with industrial growth in a "neo-classical" pattern which relegates the agricultural sector to a residual position (albeit one with many important functions on which the rest of the economy depends).

(6) The Plan aims at an overall increase of 282,000 in reported employment over the 1964-1970 period (an average annual increase of 5% in non-agricultural and 6.9% in agricultural employment). Development Plan, op. cit. pp. 100-101. In fact, reported employment fell between 1964-1965 and rose by 2% between 1965-1966. Kenya Statistical Digest, op. cit., p. 4.

(7) See : D.M. Etherington, "Projected Changes in Urban and Rural Population in Kenya and the Implications for Development Policy", East African Economic Review, New Series, Vol. 1 No. 2, pp. 1-19., and D.G.R. Belshaw, The Population Absorption Capacity of the Rural Areas of East Africa: A Summary, R.D.R. Paper No. 10.

This writer is unaware of any other comprehensive development models that could serve as guidelines to development policy, certainly none that focus on the current problems planners face in the context outlined above.

That creative thought and experimentation are necessary to devise a new strategy (or set of strategies) for agricultural development appears obvious. Yet, basic information on actual conditions in agriculture which often serves as the foundation on which new strategies are developed, is generally unavailable. With reference to questions concerning agricultural labour, the data currently available for Kenya mainly consists of studies of labour inputs and labour productivity⁽⁸⁾. A survey of wages and conditions of agricultural employment was conducted in 1955 but is now long outdated.⁽⁹⁾ A recent paper by J.D. MacArthur, based on the results of the F.E.S.U. surveys, broadly discusses future employment prospects in agriculture⁽¹⁰⁾ while the annual reports of the Department of Labour (not published since 1965) give brief and cursory descriptions of labour supply-demand relationships in the agricultural sector. In sum, this information, although often valuable, falls far short of providing the basic data on the operation of the agricultural sector which would be used in designing effective policies.

In an effort to narrow this "agricultural information gap" the writer is engaged in a study of the structure of the agricultural labour market and major factors influencing the supply and demand for labour. Three areas (Trans-Nzoia, Kilifi and Embu Districts) representative of different types of farming in Kenya have been selected for intensive study. Preliminary and incomplete results on the market structure on the large mixed farming sector (Trans-Nzoia) are present below.

(8) See: Farm Economics Survey Unit, Reports 1-24, Ministry of Economic Planning and Development, Nairobi; J. Hoyer, The Economics of Small-Scale Farming in Lowland Machakos, Institute for Development Studies, University College, Nairobi, Occasional Paper No. 1, April 1967; R.H. Clough, "Some Notes on a Recent Survey of Land Settlement in Kenya", East African Economic Review, Vol. 1, New Series No. 3, Dec. 1965; E.S. Clayton, "Labour Use and Farm Planning in Kenya", J. of Experimental Agriculture Vol. 28; No. 110, April 1960

(9) Colony and Protectorate of Kenya, Report of the Rural Wages Committee, Nairobi, Govt. Printer, 1955.

(10) J.D. MacArthur, "Some thoughts on Future Trends on Farm Employment in Kenya", Conference on Education, Employment and Rural Development, University College, Nairobi, 1966.

II Methodology

The Trans-Nzoia District, located in Rift Valley Province, is one of the most important mixed farming areas in the country⁽¹¹⁾. It covers a relatively small area of 953 square miles; all land in the district is classified as A1, high potential arable. In 1965 Trans-Nzoia accounted for 20% of total reported resident agricultural employment in Kenya⁽¹²⁾. Other factors which led to the selection of this district for study are:

- (1) It is representative of the large mixed farming sector.
- (2) It is small enough to allow a reasonable sample of total farms to be studied.
- (3) Transportation facilities are relatively good.
- (4) The extension service, which has been working with most African farmers in the district for over a year, has maintained excellent records on farm operations which can be used as an independent check on the data obtained in the study.

Trans-Nzoia can be broken into three ecological zones:

- (1) a high potential region on the slopes of Mt. Elgon
- (2) a medium potential region in the Trans-Nzoia plains
- (3) a low potential region in the Cherangani Hills.

With the help of the District Agricultural Officer all farms were distributed by ecological zone. Once this was done a sample of 36 farms (18 European-18 African) in different size groups were selected for study by random sampling. The resulting sample accounts for 9.1% of the farms and 8.5% of the area in farms in the district (See Table 1)

(11) In 1965 the district contained 47% of the total maize acreage and 13% of the dairy herd recorded on all large farms in the country. Ministry of Economic Planning and Development, Statistics Division. Agricultural Census, 1965, Large Farm Areas, Nairobi, 1967, Tables 3a and 13a.

(12) Ibid., Table 33a

TABLE I

DISTRIBUTION OF FARMS IN THE TRANS-NZOIA DISTRICT, 1967

	African Farms				European Farms				Total Farms			
	Less than 1000 acres	1000-2499 Acres	2500 + Acres	Total	Less than 1000 acres	1000 - 2499 acres	2500 + Acres	Total	Less than 1000 acres	1000 - 2499 acres	2500 + acres	Total
No. of farms in District	113	48	2	163	95	96	47	226	208	144	44	396
No. of farms in sample area	26	17	1	44	15	13	14	47	41	36	15	91
No. of farms in sample	11	7	-	18	6	8	4	18	17	15	4	36
Farms in sample as a % of farms in District	9.7	14.6	-	11.0	6.3	8.3	9.5	8.0	8.2	10.4	9.0	9.1
Average level of employment on sample farms	15	34	-	25	26	47	53	41	19	41	53	32

SOURCE: District Agricultural Committee of Trans-Nzoia, Owners and Occupiers of Land in the Trans-Nzoia, 1st April, 1967, Mimeo, 1967.

An employer questionnaire was administered to all 36 farm operators (owners or managers) by the writer. Concurrently, 4 research assistants conducted intensive interviews with 393 farm workers on 6 European and 9 African farms.⁽¹³⁾ Selection of farms for employee interviews was on the basis of size group and proximity to major roads. On those farms where employees were not interviewed, information on tribe, wage, length of employment, etc., was provided by the employer for each of 755 employees. All interviewing took place between June and August of 1967.

III Market Structure

One could conceive of a spectrum of market structures ranging from the perfectly competitive model to perfect monopoly-monopsony conditions (where the union represented the sole seller and an employers' association the sole buyer of labour). In the case of the labour market in Kwa-Zulu it is obvious that the latter situation does not prevail. What follows is an examination of (a) the extent to which the labour market exhibits perfectly competitive conditions in the area (b) and the forms that imperfections take.

The conditions for a perfect labour market are given below; each will be discussed in turn:

- (1) A large number of small employers in the industry.
- (2) Freedom of entry and exit into the industry.
- (3) Absence of collusion among employers.
- (4) Production of a homogenous product (or small number of homogenous products).
- (5) A large number of homogenous employees.
- (6) Absence of collusion among employees.
- (7) A high degree of horizontal mobility of labour between employers in the industry.
- (8) A high degree of horizontal mobility of labour between all industries.
- (9) Perfect knowledge of all costs, revenues and opportunities on both sides of the market.
- (10) Rational behaviour by both employers and employees.
- (11) Diminishing returns to all factors of production.
- (12) Absence of government intervention.

(13) To the extent possible, the entire labour force was interviewed on each farm selected for employee interviews. Originally, 33% of the total farms in the sample were to have such interviews. However, as the average size of the labour force on African farms in the sample is only 23 as compared with 41 on European farms, interviews were conducted on 50% of the African farms in the sample. 236 employees were interviewed on European farms whereas only 157 employees were interviewed on African farms, despite increased coverage of the latter.

It should be noted that all numerical data presented are preliminary tabulations and should be viewed as describing orders of magnitude rather than precise results.

A Large Number of Small Employers

Previous to this study there was no data available on employment by size of farm. In 1965, the last year for which data is available, resident agricultural employment in the district was given as 7,800. In that year there were 347 farms listed in the Census, giving an average of 22 workers per farm (13:1). As is seen in Table I, no farm group in the sample had average resident employment of more than 53 per farm. No individual farm employed more than 100 workers. Assuming that the total level of agricultural employment has not changed significantly since 1965, and that the sample farms are in fact representative of the area, the condition that there is a large number of small employers appears to be satisfied.

Freedom of Entry and Exit

At this moment there are no formal barriers to entry into large scale farming in the district. The proposal to restrict all future land sales to Kenya citizens will probably have the effect of significantly narrowing the land market, as many Europeans who may wish to purchase land are unwilling to take up Kenya citizenship.

The Land Bank and the Agricultural Finance Corporation, the primary agencies involved in the provision of credit for land, cattle and machinery purchases, have a policy of only serving new African large scale farmers. This policy provides a major subsidy to African entry. However, almost half of the European farms in the sample have been purchased since 1962 (see Table II) and it appears that in the past few years there have been no real barriers to entry. There are no restrictions on exit.

Table II. Purchase of Farms in Trans-Nzoia Sample.

Year of Purchase	African No.	European No.
Pre 1961	-	10
1961	1	-
1962	-	1
1963	4	3
1964	5	2
1965	6	1
1966	1	1
1967	<u>1</u>	<u>-</u>
Total	18	18

(13:1) Agricultural Census 1967. op. cit. Tables 1 and 13

Collusion Among Employers

Most farm operators in the district belong to one or more farmer organisations (i.e. Kenya Farmers' Association, the Agricultural Society of Kenya, Kenya National Farmers Union - KNFU), but only the KNFU and its independent subsidiary, the Agricultural Employers Association, deal with labour questions. The Trans-Nzoia KNFU branch has a standing committee which is responsible for labour problems but any disputes are sent to Nakuru where they are handled by the National Office. Labour questions are discussed at annual meetings or special meetings which are called when urgent questions arise⁽¹⁴⁾. Decisions taken at such meetings are not binding on members.

The Agricultural Employers Association (AEA) is a recent outgrowth of the national KNFU labour committee. This association deals directly with the Agricultural and Plantation Workers Union and negotiates wage agreements. AEA members are said to be more active negotiators with the union than the national committee.

KNFU claims a membership of 1000 members in the district. It has been actively recruiting new members since 1964 and has recently gained the support of 36 employers interviewed, 7 Africans and 11 Europeans (50%) claimed KNFU membership. Most of those interviewed said that they had not been to any meetings where labour problems were discussed. No one interviewed claimed membership in the AEA. On the basis of this information it appears that there is no formal organized collusion among employers.

Sixteen employers (45%) said that they informally discussed labour problems with other farmers. The most frequently mentioned topics of discussion were local wage rates for casual labour (8 employers) and identification of "trouble makers" (6 employers). As local wages rates for casual labour range between \$ 1/-/85 and \$ 3/- per day, any intent of informal collusion among employers is obviously ineffective.⁽¹⁵⁾

(14) The local KNFU labour committee chairman said that the last special meeting held on labour problems was about two years ago when the tripartite agreement was discussed. This was an agreement between employers, unions and the government whereby private employers voluntarily increased employment by 10%.

(15) The average daily rate of casual labour is \$ 1/66.

Homogenous Products

In analysing the labour market in agriculture it is important to see the extent to which heterogenous output composition influences labour requirements. All farms in the sample are primarily concerned with the production of maize and dairy products. In addition, sunflower and coffee are grown as subsidiary crops on half of the farms (20 sunflower and 13 coffee producers). Of these four commodities, the only one that calls for any degree of labour specialization is dairy farming. In this case, it is only milkers who require a short period of initial training. There are no restrictions to entry to dairy employment on the basis of tribe (see Table III). To a large degree, all four activities are homogenous with respect to the degree of labour specialization required, and employment opportunities do not appear to be determined by output composition.

Homogenous Labour Supply

The majority of the labour force is unskilled and has little formal education⁽¹⁶⁾. Although the district is in a predominantly Luhya-Kalenjin area, about half of the labour force is composed of tribes from other areas (see Table III). The majority of jobs (73%) require little, if any, skill.

Those workers who are in skilled or administrative and supervisory positions (27%) do not appear to possess any special characteristics other than greater educational qualifications or previous experience and training (i.e. tractor drivers). Skills are most often acquired on the farms by individuals selected by the operator for training. Most headmen are selected on their ability to effectively exert authority and organize workers. The only qualification for clerical positions is literacy (i.e. a minimum of 4 to 5 years of primary education).

Thus, the labour force can be divided into unskilled (categories III and IV) and skilled (categories I and II) workers. General characteristics (tribe, age, education level, etc.) of employees in both groups are basically similar and there is a degree of upward vertical mobility from unskilled to skilled positions.

Collusion Among Employees

There is no strong agricultural labour organisation functioning in the district. The Agricultural and Plantation Workers Union has an office in Kitale (the major town in the district) and claims a dues paying membership of 300 workers. The Union entrance fee is K 5/-

(16) Preliminary tabulations indicates the average level of education on all farms in the sample is less than 1 year.

Table III

Occupational Distribution of the Sample Labour Force by Tribe

Skill Classification	Luo	Kikuyu	Luhya	Karba	Kalenjin	Turkana	Other	Total	%
I Administrative and supervisory	4	5	11	1	2	-	3	26	6
II Skilled workers (drivers and artisans)	4	2	39	4	5	1	19	81	21
III Semi-skilled workers (dairy employment and apprentices)	1	6	34	5	7	5	29	89	23
IV Unskilled workers	8	41	85	5	6	10	42	196	50
Total	17	53	169	15	20	16	93	393	100

and dues are \$ 2/- per month, quite high relative to wage levels (about \$ 15 - 45/- per month in cash).

Of 593 employees enumerated, 11 employees on European farms and 5 employees on African farms claimed to be dues paying members. Most employers stated that union representatives had never attempted to organize their farms. On those farms where organizing meetings were held, employers claimed that after initial dues were collected union representatives did not return to the farms and workers soon lost interest. No employer felt that the presence of the union had brought about any changes in labour relations.

Employers accounts were corroborated by the District Labour Officer who said that most union officials were untrained, inefficient and had low motivation. He went on to suggest that most workers preferred to go to the local K.A.N.U. office with their complaints as K.A.N.U. workers are more effective in dealing with employers and aid the workers without charge. (17) (18)

In no case did the union have a representative on the farm or bargain directly with the employer. It appears that the union has had no impact in either obtaining better conditions or higher wages for its few member employees. From the above it is obvious that agricultural workers as a group are unorganised.

However, a separate form of collusion does seem to exist between African employers and employees. On African farms 60% of the labour force is of the same tribe as the operator or headman, as compared to 23% on European farms. These figures strongly suggest that African operators prefer employees of their own tribe. The extent to which the labour force previously on the farm was discharged and replaced by new workers of the African operators tribe will be investigated in the near future.

High Mobility Within the Industry

In a perfect market one would expect a high level of horizontal mobility coupled with a high degree of accurate knowledge about the market on the part of employees to lead towards a situation where

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- (17) Before a union representative will investigate a worker's complaint the worker must be a paid up member of the union and in addition, pay transport costs (\$5-10) of the representative to the farm.
- (18) The local K.A.N.U. representative claimed an average of 50 employee complaints per week. Most disputes were said to concern discharge without proper notice and non-payment of wages (predominantly on African operated farms).

Table IV

Length of Residence of Permanent Employees in Sample

(years)

	Less than 1	1 and under 2	2 and under 3	3 and under 4	4 and under 5	5 and under 6	6 and under 10	10 and under 15	15 and under 20	20 and above	Total
White Males											
Number	34	27	22	11	12	8	7	7	9	7	154
Percent	22.0	17.5	14.3	7.1	7.8	5.2	4.5	4.5	5.9	4.5	100.0
European Males											
Number	50	16	11	13	15	28	17	24	9	7	170
Percent	17.3	9.4	6.5	7.6	8.8	16.5	10.0	14.1	5.3	4.1	100.0
All Males											
Number	74	43	33	24	27	36	24	31	18	14	324
Percent	22.6	15.3	10.2	7.4	8.3	11.1	7.4	9.6	5.6	4.3	100.0

employees have moved to higher paying jobs within the sector. To the extent that the "rural labour force" is homogenous, similar movement would be expected to occur between industries in favour of the highest paying industries.

The majority of employees have spent most of their time in paid employment in agricultural occupations⁽¹⁹⁾. However, data analysis is not at this stage where definitive conclusions can be reached about horizontal labour mobility in the district. Table IV, based on incomplete tabulations, indicates that 22.8% of the labour force have held their current positions for less than one year and a total of 46.3% have been employed in their current jobs for less than three years. This may be an indication of a fairly high level of voluntary labour mobility. It could also mean that there is a high rate of turnover due to a number of other causes (e.g. because some people prefer a rotation of short wage employment periods and periods at home, because people are called home for various reasons, because there are a number of "unemployables" who can't hold their jobs, etc.). Another important factor to be considered is that African employees, who have only taken over farms in the past few years, are most likely replacing and/or expanding their labour force in which one would expect the length of residence to be fairly low. On the other hand, the relatively shorter period of residence on African as compared to European farms, pronounced in all cases of residence of less than three years may be representative of horizontal mobility away from lower paying and less secure African employment (from the point of view of the employee) in favour of European employment possibilities.

As a general phenomenon, one would not expect too high a level of horizontal mobility as (a) there is a high level of unemployment in the district,⁽²⁰⁾ and one would not expect workers to leave their relatively low paying jobs when the possibility of finding higher paid employment opportunities is low (b) employee information about actual conditions in the labour market is poor (see below) and (c) most workers consider the farms their homes⁽²¹⁾. All factors considered, evidence on the degree of

(19) This is indicated on employment histories which have not, to date, been analysed.

(20) No figures on unemployment in the district are available, but all local government officials that the writer spoke with believe that there was a "good deal" of unemployment in the area. These contentions were supported by employers who said that at no time in recent years did they ever face a shortage of labour.

(21) Of 395 employees asked of their future expectations 267 (68%) said that they had no further plans and hoped that they would be able to stay on the farms where they were currently employed.

of horizontal mobility within the industry does not allow one to draw any firm conclusions at this time.

High Mobility Between Industries

Clearly, urban employment offers higher wages than agricultural employment in Kenya. Whatever natural tendencies there are in this direction (e.g. resulting from the abundance of urban labour) are reinforced by Government minimum wage legislation which applies to all urban areas. This creates a strong incentive for agricultural labour to migrate in search of urban employment opportunities. Moreover, there are no restrictions to the entry of such migrants. Further knowledge of high rates of urban employment in other areas should not inhibit the flow of labour from rural to urban areas.

The only tabulated evidence on urban migration shows that about 50% of the labour force⁽²²⁾ on both African and European farms, have sought employment in urban areas in the past. The average number of trips per employee is about 2, ranging from a low of 1 to a high of 8. This information indicates a strong tendency toward inter-industry horizontal mobility in favour of higher paying industries, but little more can be said without further analysis.

Perfect Knowledge

Imperfect knowledge exists at a number of levels on the part of both employers and employees. Only 10 (7 European and 3 African) farmers cost any of their operations, none of the employers have costed more than one or two (i.e. mechanical milking vs. hand milking, tractor vs. air vs. hand spraying, purchase of additional tractors, etc.). Some employers stated that most operations could not be mechanized while others felt that they could, and said that they would like costings, but had neither the time nor the data to do the job properly. There is an experimental farm in the district, but no costings have been made on any operations. The same is true of studies by the Farm Economics Survey Unit conducted in the district.

Other areas of imperfect knowledge on the part of employers include poor understanding of minimum wage legislation (discussed below) and poor information on local casual wage rates (see above).

At this time there are only a couple of tabulations regarding the amount of accurate knowledge about the current labour market at the disposal of the employee. The value of the wage paid to most unskilled employees about K 50-60 per month, including the value of rations and shamba rental. An incomplete tabulation shows that most workers have no idea of local wage rates or believe that the value of wages is much lower than it actually is (see Table V). However, it seems most reasonable to assume that those who did respond assumed that the question referred to

(22) 100 out of a labour force of 324 have sought employment in urban areas; 54 out of a labour force of 170 and 46 out of a labour force of 154 on European and African farms respectively.

Table V Estimated Permanent Monthly Wage Rates by Unskilled Workers

	Less than 40	40-49.9	50-59.9	60	61-70	Above 70	Don't know	Total No. of workers responding
European farms	1	49	13	7	3	5	88	153
African farms	15	50	3	3	-	-	48	151
Total farms	69	99	15	12	3	6	110	304

cash wages only, and if this is taken into account, the majority of workers believing are in the correct range (i.e. a cash wage of \$ 30 - 40/- on African farms and \$ 40 - 50/- on European farms). It also appears that most workers believe that the wage they currently receive is the current market wage for unskilled labour. This is not true, as wages on African farms are usually about \$ 10/- per month lower than wages on European farms. In general workers are aware that there is a high level of unemployment in the district.

The preliminary findings above indicate that the employees in the survey have relatively poor access to information on the local labour market. As these employees are most often on farms which are only 3-5 miles from Nitsile, one could assume that market information in the hands of employees residing on outlying farms in the district is probably even less accurate.

Rational Behaviour

It will be necessary to examine the extent to which employers and employees exhibit "rational" behaviour patterns. In this study rationality will be judged by behaviour patterns or attitudes which lead to long run income maximizing decisions. This of course does not mean that other behaviour patterns are not rational in the more common sense of the term. According to this criteria, an employee who refuses temporary employment at higher pay in preference to lower paid permanent employment would be behaving rationally.

At this time the only tabulated data which gives an indication of income maximizing behaviour on the part of employees shows that out of a labour force of 393, 15 employees (4%) actually seek supplementary part-time employment and an additional 151 employees (33%) would seek part time employment if they thought that such opportunities were available. This information, in itself, does not allow one to draw any firm conclusions.

Of 10 employers who are paying more than the minimum wage, 12 responded by saying that higher wages were a reward for good work (on the part of individuals or the farm labour force as a whole) or expressed the belief that higher wages stimulated labour productivity. These responses are consistent with income maximizing behaviour, but, as in the case of employees, no firm conclusions can be drawn without further analysis.

Diminishing Returns

Insofar as the writer is aware, there is no evidence to contradict the assumption of diminishing returns to all inputs in agriculture.

Absence of Government Intervention

The major influence of Government on the agricultural labour market is through the imposition of the minimum wage for monthly (K 50/- per month) and ticket employees (K 70/- per ticket). However, the provisions of the law are not fully understood by most employers. The law allows the employer to deduct up to K 25/- month for rations; only two of the employers interviewed realised this. Employers know that they can deduct the "value" of rations, but are unsure of the basis on which to value rations (e.g. market or farm gate prices)⁽²³⁾. The law allows a further deduction of K 5/- per month per half acre shamba, up to a maximum deduction of K 20/- per month. A number of employers think the maximum deduction for a shamba is K 5/- per month and/or that no worker should be allowed more than one half acre. The resulting confusion has led to a situation where no employer is paying his workers less than the legal valuation of the minimum wage, although a number of employers (in most cases Africans) who are paying above the minimum wage believe that they are in fact paying no more than the minimum or less.⁽²⁴⁾

The district labour office does not pursue a vigorous policy of enforcement with respect to the minimum wage, nor is it necessary on the majority of farms. In some of the new African farms there are complaints of low wages. These do not usually refer to the level of wages, but rather delayed payment of wages. Such cases most often arise in the dry season when neither the dairy herd nor crops are bringing in sufficient revenues to meet both loan repayments and wage obligations. The actual number of

(23) Most employers value their rations at K 15/- per month. It is interesting to note that the District Labour Officer was also unsure of the law and had to consult the statute for clarification. He then said that any employer could deduct up to K 25/- per month, but that the local market value of rations is only K 15/- per month. A check on local market prices revealed that, given the rations most employers issued to their employees, the true market value was closer to K 20/- month.

(24) Of course all employers knowingly pay their skilled workers more than the minimum wage.

formal complaints by workers is rather small, probably due to the fact that with so much unemployment in the district, the worker fears that he is likely to lose his job if he registers a complaint against his employer⁽²⁵⁾.

The impact of minimum wage legislation has been to raise the average agricultural wage to a level that is in fact higher than originally conceived by the framers of the law. It is particularly effective on European farms where (a) employers can afford to pay higher wages and (b) there is fear of breaking the law. The effect of the current level of wages on employment will be examined in the future.

IV Evaluation of the Market Structure

Given the evidence available at this time, it appears that the structure of the labour market in the Transvaal exhibits a number of features necessary for the functioning of a perfect labour market.⁽²⁶⁾ However, to the degree that lack of mobility and poor quality of information are characteristic of the present operation of the market, the self-regulating adjustment tendencies of the market, which would lead to equal rates of pay on all farms, are inhibited.

Minimum wage regulation by the Government (to the extent that it is effective) probably fosters a higher level of unemployment than would otherwise prevail as the "market wage" for labour is kept artificially high and unemployed workers are not in a position to bid down the wage and thereby increase the level of employment⁽²⁷⁾. The impact of a lower wage level on employment cannot be evaluated unless one considers the elasticity of demand for labour with respect to the wage rate. Employers were asked what their response would be to a fall in the minimum wage from R 60/- to R 50/-. Only 3 out of 36 employers said that they would increase the size of their labour force (6 African and 2 European employers), the total estimated increase being 67 employees (i.e. an increase of 5.8% on the base labour force of 1148). Clearly the demand for labour with respect to the wage is inelastic, the elasticity coefficient being .35.

(26) Large numbers of unorganised sellers and buyers, no restrictions on entry, homogenous products, rationality, and diminishing returns.

(27) This is not always true as indicated above. Some farmers report that a number of workers offer their services for contract work (e.g. pitsawing, brickmaking, clearing bush, etc.) where payments are based on the task. These workers are often willing to accept task rates that would work out at less than minimum wage rates if the task were to be done on a "time" (i.e. monthly) basis.

(25) In fact the labour officer reported that fear of unemployment often leads a worker to state that he is a partner on the farm, rather than an employee, as the former are not subject to minimum wage legislation. This attitude on the part of the employee is quite understandable as most workers regard the farm as their business and as their source of employment.

The fact that European and African farmers exhibit different behaviour patterns (as groups) also influences the operation of the market. These patterns may be attributed to different economic positions⁽²⁸⁾, cultural differences, etc. The importance of these differences will be evaluated at a later stage in the analysis.

Finally, it may be more correct to divide the analysis into separate investigations of skilled and unskilled labour markets, as labour in these two categories is not homogeneous.

It is left to the reader to decide where in the competitive non-competitive market spectrum the Trans-Nzoia market falls.

V Possible changes in the Market and their Implications on Employment

As noted above, African farmers currently enjoy subsidized conditions to entry whereas a number of Europeans may soon be excluded from entry. Should this trend continue, which seems likely, there will be two opposing effects on employment. On the one hand, African farms appear to have more labour intensive production functions than European farms and a shift in control should increase employment opportunities. Preliminary calculations indicate that on African farms the number of cultivated acres per field worker is 19.6 as compared to 30.6 on European farms; in both cases the⁽²⁹⁾ level of labour intensity is higher, the smaller the unit (see Table VI). African farms are also more labour intensive in dairy production, with an average of 22.8 livestock units per livestock worker as compared to 36.7 on European farms. A further indication of a labour intensive production function on African farms is seen by the fact that on African farms total acres per tractor is 553, as opposed to 451 on European farms.⁽³⁰⁾

On the other hand, European farms are more developed and therefore exercise a greater demand for labour. As is seen in Table VI, the percentage of cultivated acreage is significantly higher and the number of uncultivated acres per livestock unit significantly lower on European farms in all size groups. This indicates a much higher level of land utilization as compared to African farms. Unless one assumes that new African operators will be able to maintain the level of production formerly prevailing on the farms, which is doubtful, the effect of land transfers on

(28) African farmers are operating under the constraint of a heavy debt burden and have not had the time to develop their farms to the extent that European farmers have (See Table VI).

(29) Although African farms are smaller than European farms in all size groups at present, there is no reason to assume that future transfers of land from European to African operators would involve smaller farms only. However, if this were the case, the employment creating effects would be relatively greater.

(30) Clough is also in the process of estimating production functions on African farms in the Trans-Nzoia.

LAND AND LABOUR UTILIZATION ON SAMPLE FARMS

Table VI

Size of Farm		No of Farms	Total Acreage	Cultivated Acreage	Cultivated as % of total acreage	Total labour force ⁽¹⁾	Total acres/worker	cultivated acres/field-worker	Livestock Units	Uncultivated acres/livestock unit	Livestock units/livestock worker	Total acres/Tractor	Cultivated acres/tractors
		1	2	3	4	5	6	7	8	9	10	11	12
African farms	Less than 1000 acres	11	4741	1895	31.7	169	28.0	16.5	780	4.1	18.0	395	145
	1000-2500 acres	7	9635	2154	22.4	936	40.8	23.7	1397	5.4	26.0	600	153
	Total	18	14376	4049	25.5	1105	35.5	19.6	2177	4.9	22.2	995	298
European farms	Less than 1000 acres	5	4551	1756	39.5	173	29.7	23.9	1098	2.5	21.0	297	112
	1000-2500 acres	8	13191	4410	33.4	376	35.0	33.0	4249	2.1	49.0	413	197
	2500+ acres	4	11135	2302	20.7	214	52.0	31.0	2350	3.8	33.0	596	115
	Total	17	28877	8508	29.5	763	30.8	30.6	7697	2.6	36.7	1306	424

(1) Includes partners working on the unit full time

(30:1)

employment is indeterminate of this of the analysis

At present there does not appear to be any shortage of either skilled or unskilled labour. If there were to be a shortage of skilled labour in the future, to the extent that skilled and unskilled labour are complementary inputs and there are no substitutes for skilled labour inputs, one would expect total production and total employment to fall until new skilled workers could be trained. However, this possibility seems academic at this time.

Increased knowledge of market conditions on the part of employees coupled with increased horizontal mobility would lead to a situation where vacancies were filled faster and wage rates for similar work would tend toward equality on all farms. Given (a) the present degree of isolation of workers on individual farms, (b) the situation where most workers consider their permanent home to be the farms on which they are working, and (c) the lack of any programmes to change these conditions, it is difficult to foresee any change from the present situation.

Access to accurate costings by employers could have a number of effects on employment (assuming that employers would in fact base their employment decisions on the results of such costings). If information indicated that capital intensive methods were cheaper, there would be a tendency toward labour substitution unless the Government provided a subsidy to increased employment (e.g. for use of the labour intensive methods) which outweighed the marginal profit derived from the use of the more capital intensive techniques. It is also quite possible that labour intensive techniques would be found more profitable, particularly when the marginal benefits of closer supervision are investigated. Costings might also indicate the lack of management skills form a crucial bottleneck to expanded employment; programmes designed to overcome such deficiencies could increase employment opportunities.

Finally there is the possibility that the cost of labour could rise, despite increasing unemployment, through an increase in the minimum wage. Of 36 employers asked what effect they thought would come about from a general wage increase of £ 10/- month, only 4 (3 African, 1 European) felt that there would be an increase in output that could be sustained. In response to a similar question regarding a rise in labour costs 12 out of 36 (4 African, 3 European) employers stated that they would seriously attempt to increase the level of mechanization on their farms if costs rose in the future. No information is available at this time on the probable impact on employment of a rise in the minimum wage (31).

(30:1) Other factors also enter into the analysis: the availability of working capital to maintain a large labour force; improvements in labour productivity on African farms; the desire to increase the level of mechanization on African farms, particularly when the debt burden is eased, etc.

(31) The writer intends to resurvey all employers with a follow-up question on their response to an increase in the minimum wage, which was omitted in the original survey.

As a general attitude, successful farmers, particularly Europeans, do not appear to be worried about the prospect of an increase in the minimum wage (which could probably be easily financed out of profits). In part this attitude appears to stem from a feeling of responsibility toward their labour force. African farmers, in much "tighter" economic positions, are quite concerned about the possibility of increasing labour costs. It is likely that a rise in the minimum wage, accompanied by falling maize prices, would probably bring about a decrease in production and employment on all farms in the district and might well stimulate the introduction of measures designed to decrease the size of the labour force and increase labour productivity of the remaining workers.

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