

RURAL URBAN STUDIES UNIT



UNIVERSITY OF NATAL DURBAN

**THE DEVELOPMENT OF
CAPITALISM IN
SOUTH AFRICAN AGRICULTURE:
THE RESTRUCTURING OF
AGRARIAN CAPITALISM AFTER
1950**

INSTITUTE OF
16 JUN 1988
DEVELOPMENT STUDIES
LIBRARY

S E Stavrou

DEVELOPMENT STUDIES UNIT

Centre for Applied Social Sciences

WORKING PAPER NO. 14

Rural Urban Studies Unit

The Rural Urban Studies Unit was founded in 1983 by the Human Sciences Research Council for the purpose of studying the dynamics of the links between the rural and urban areas of South Africa. It is situated at the University of Natal, Durban and works in close co-operation with the Development Studies Unit.

ISBN NO: 0-86980-597-5

1. Introduction⁽¹⁾

To interpret the process of the restructuring of capitalist agricultural production, after 1950, it is necessary to view three primary and interrelated processes.⁽²⁾ These include; the changing form of farm labour exploitation, the structural change in farm size, unit and area holdings as well as the concentration of capital, and the process of mechanization.

Marcus (1986:143) has argued, that since the late 1960's, capital restructuring within the agricultural sector has advanced to the point where the balance of relations had shifted away from labour-intensive to capital-intensive production. This shift would therefore have had far-reaching consequences for the reorganization of the labour force in terms of changing supply and demand for labour, and ultimately the size of the black population in white rural South Africa. According to the 1985 Population Census (Report No. 02-85-03), 16,2 percent of all economically active blacks are involved in commercial agriculture in the white rural sector. Nieuwoudt, Professor of Agricultural Economics, at the University of Natal in Pietermaritzburg, in the Natal Mercury, (November 1986:10) in an article dealing with white farm labour, claimed that black farm labourers constituted up to 26,0

-
1. My thanks are due to my supervisor, the late Jill Natrass who commented on earlier drafts of this paper, which forms part of a chapter of my masters dissertation. Any faults remain my own. I should also like to acknowledge financial assistance from the HSRC.
 2. The year 1950 was chosen, for it represents the beginning of the apartheid period under the Nationalist Party who come into power in 1948, introducing a host of new legislative measures that were to have a profound effect on both agrarian labour and capital.

percent of the South African labour force. The first section of this paper describes both the change in farm labour and changing form of farm labour, after 1950.

Ownership of farm units has been accumulating into the hands of fewer individuals and/or corporations. Simultaneously, individual and partnership ownership shares of the commercial farming sector, have been experiencing a gradual decline in favour of company ownership. A concentration and centralization of farm capital has been occurring which has had an effect on average farm sizes. The second part of this paper provides an overview of the structural change in farm size, unit and area holdings and illustrates an emerging trend towards monopoly capitalism.

Mechanization and technological changes have during the past 35 years been amongst the most important variables influencing the agricultural sector. An increase or decrease in the rate at which farms mechanize creates a host of possible influences for both the supply and demand of farm labour, economies of scale and thus farm size, unit and area holdings as well as having important implications for capital accumulation in the agrarian sector. The final part of this paper addresses some of these above issues.

The aim of the paper is to provide an analysis of some of the important issues presently relating to commercial agriculture, present some of my own findings in this field, and generate a possible debate whereby major issues and their future implications for South African agriculture can be discussed.

2 Change in Farm Labour After 1950

In September 1956, an amendment to Chapter IV of Act 18 of the Native Land and Trust Act of 1936 redefined black labour on white owned farms into three categories; servants, labour tenants and squatters (see Appendix One). Employment of black labour on white owned farms grew in absolute terms from Union in 1911 to 1971, from where on it began a steady decline. Over a 50 year period, 1911-1960, 290 000 blacks

Table 1
Labour Movements of Blacks and Whites on Commercial Farms 1911-1980

Period	Out Migration		In Migration Blacks (1000)
	Blacks (1000)	Whites (1000)	
1911/21 ¹	-	-	70
1921/36 ¹	-	40	140
1936/51 ¹	-	88	80
1951/60 ¹	-	53	45
1960/71 ¹	333	44	-
1971/80 ²	671 ³		-

Source : 1. Natrass 1981:106
 2. Abstract of Agricultural Statistics 1985
 3. The figure was calculated assuming a population growth of 2,8 percent and that 75 percent of all farm labourers were resident. An increase in the percentage of migrant farm labourers would reduce the estimate. A constant economic activity rate was also assumed, whilst casual employees are included in this figure, having been excluded from the previous calculations.

took up residence on white owned farms while simultaneously, over the 1911-1973 period, more than 240 000 whites departed from this sector and in many instances were being directly substituted by cheaper black labour (Nattrass 1981:105). Table 1 illustrates white and black labour movements on commercial farms for the period 1911 to 1980.

By the late 1950's, the division of labour through a system of labour distribution, via state administered labour bureaux, had achieved the desired results, but caution must be taken in order not to over emphasize the role played by the labour bureaux. Labour bureaux certainly acted as a means of preventing any unwanted outflow of labour from white farms and the white rural sector at large. However, it was the continued vigilant application of the "pass laws" by the white community in South Africa that prevented any mass migration by blacks within the three sectors. Once farmworkers had their passbooks stamped as being in farm employment, they had very little chance of securing a job elsewhere.

By the mid 1960's, white agriculture was beginning to experience an oversupply of black labour and black labour out-migration began to exceed in-migration (Nattrass, 1981). Thus, what remained for white agriculture was to complete the process of the elimination of remaining tenants and eradicate squatting in the shortest possible time (Morris 1976:45). A process which was first initiated, during the 1890's, through a number of squatter Acts, in both the Boer Republics and Crown Colonies and formalized throughout the Union by the Native Land Act of 1913. To further exasperate the white farmers,

the redistribution of labour was so successful that an influx of excess blacks, over and above the required labour needs, began to flow on to and subsequently overcrowd white farms. White farmers responded to this by voicing their concern about the 'verswarting' (darkening) of the countryside which they argued was incompatible with the State ideology of separate development.

Separate development sought to not only entrench capitalist relations of production where they existed, but also to create them and thus further increase the privileges of the white community at large. Relocation of blacks from white rural areas into the black reserves, which were by then reconstructed into homelands based on tribal differences, was an important means by which this policy could have been achieved. If implemented, this policy would not only ensure the reproduction of those social classes and categories that had a vested interest in the perpetuation of capitalism in South Africa. Via a system of forced removals, both the State and white farmers forced thousands of black farm residents into their designated homeland (Wolpe, 1972; Legassick and Wolpe 1976; Surplus People's Project, 1983a; 1983b; Freund, 1984; Platzkey and Walker, 1985; Lipton, 1986).

Predictably, those white farmers who voluntarily still continued to practice tenant farming, came to the defence of this system alleging an inability to pay the cash wages. The State, after initiating a policy of tenant evictions during the 1960's, granted a period of respite in order to allow scores of undercapitalized farmers, who were unable to pay the necessary cash wages to a full-time labour

force and were therefore fearful of a mass exodus of black farm labourers to the urban areas, time to reorganize their organization of production. By the late 1960s, however, the state having satisfied itself that conditions were right, began to earnestly implement a removals policy.

Morris claimed that, between 1960 and 1970, 340 000 labour tenants and 656 000 squatters were removed from white farms with a further 400 000 tenant removals occurring between 1971 and 1974 (1976:53). Bundy (quoted by Greenberg, 1983:93), claimed that between 1964 and 1970, labour tenants dropped from 163 000 to 27 585 and that, by 1973, the rest of South Africa was free from tenancy except for the existence of 16 000 isolated tenant cases in Natal. Natrass, taking into account the natural increase in the population growth rate, argued that for the 20 year period, stretching between 1950 and 1970, one and a half million blacks left the capitalist farming sector, of which one million migrated to the white urban sector and the rest to the homelands (1976:57). This trend continued into the 1980s, official statistics show that, between 1974 and 1980, the number of black farm labourers employed in commercial agriculture, decreased by an average of 3,02 percent per annum (Census of Agricultural and Pastoral Productivity, 1978; 1980). The majority of which were resettled into the homelands leading Legassick and Wolpe to argue that, without the existence of these labour reserves, the removal of excess black farm labour would have been difficult to undertake.

The institutional nexus of the Bantustans, ... formed the means through which the surplus - population could be dispersed around the peripheries of South Africa, where social control is easier and cheaper, and from where it could be mobilised, as and when necessary, through the contract system" (1976:95).

The above description however is general and does not offer any clues as to what was occurring to the social composition of the remaining black labour force. Although the absolute numbers of black farm labourers began to decline gradually after 1951 the numbers were sufficiently offset by the increased employment of casual labour. Laubscher and Joubert (1976:8) argued that, between 1960 and 1973, the number of regular/full-time workers per farming unit increased by nearly 20 percent while the number of casual workers increased by over 40 percent. They do, however, qualify that the absolute number of workers at large had throughout the 1955-73 period decreased by 13,6 percent, as the total number of farm units decreased, but because farm units were increasing in size, workers per unit increased. Thus, in order to measure the overall decrease in terms of regular to casual labour, they calculated that employment per 1000 hectares had decreased by 13,5 percent for regular workers but increased by 26,8 percent for casual employees. However, farmers either found it increasingly difficult or unprofitable to continue substituting casual for permanent labour. Nattrass (1976:16,17) argued that during the 1960-71 period, effectively no substitution occurred and between 1971-73 a substantially greater reduction took place amongst the casual rather than the permanent black labour force. She explained this change in patterns of employment behaviour as being indicative of an emerging trend towards the rationalization and capitalization of the farming sector, due to; an increase in the capital : labour ratio, and the need to employ a more stable and a better skilled labour force. More recent trends suggest, that a reduction in full-time resident

farm labour in favour of migrant and/or commuter casual labour, is occurring (Stavrou, 1987:138).

In conclusion, it can be argued given that in 1985, 850 041 economically active blacks were officially enumerated as working on white farms (including forestry and nursery workers - Population Census Report No. 02-85-03 :1985), the implications of an average of 3,0 percent decrease in this labour force per annum, could well be disastrous. In real numbers this would mean that there would be an annual decrease of 25 000 blacks per annum. If it is accepted that the dependency ratio of economically active and employed black farm labourers to the rest of their households as being approximately 1:4, (Stavrou, 1987:311), then 100 000 blacks are directly affected by a shrinking agrarian work force every year - a trend likely to continue.

3. Structural Change in Farm Size, Unit and Area Holdings

From the turn of the century, until 1951, the absolute number of white farms in South Africa increased annually and the average size of farms decreased, but from 1951 to 1985 the total number of farms decreased by 50 percent from a high of 118 097 in 1951 to 59 088 in 1985 (Table 2 below). The most dramatic reduction in the number of farm units occurred between 1971 and 1978, when the number of commercial farming units fell by 20,8 percent. Simultaneously, average farm sizes which had been declining up until 1951 increased by 62 percent over the following 27 years, from an average size of 736,5 hectares in 1951 to 1 193 hectares in 1978. A reason for the increase in the number of farms from 1919 to 1951 is the fact that the land area under

cultivation increased from 77,5 million hectares to 88,6 million hectares, a 14.4 percent increase between 1919 and 1946. It can therefore be argued that because, after 1950, the absolute decline in the number of farm units occurred in tandem with an increase in the average farm size, a tendency towards land concentration and farm unit consolidation has taken place.

Table 2
Change in Farm Size and Area Under Cultivation 1919-1980

Year	Number of Commercial Farms	Average Size Farm (ha)	Area Under Cultivation (1000 ha)	Percentage change in:		
				Number of Commercial Farms	Average Farm Size	Area Under Cultivation
1919 ¹	78 086	993	77 504			
1937 ²	104 554	821	85 578	33,9	-17,3	10,4
1951 ¹	118 097	737	86 979	13,0	-10,2	1,6
1960 ²	105 859	867	91 790	-10,4	17,7	5,5
1971 ²	90 422	988	89 298	-14,6	13,9	-2,7
1978 ²	71 621	1 193	85 447	-20,8	20,8	-4,3
1980 ³	69 372	-	-	- 3,1	-	-
1985 ⁴	59 088	-	-	-14,8	-	-

Source : 1. Nattrass 1981:109.
2. Abstract of Agricultural Statistics 1985.
3. Preliminary figures - South African Statistics 1986.
4. Hatting, Lanvokon 1986 (in D. Cooper, 1986:7).

The increasing importance of capital remains an outstanding feature of the changes that are occurring in the commercial agricultural sector.

Cooper (1986) argued that increasing debts amongst white farmers,⁽¹⁾ caused by, amongst other variables, a high inflation rate whereby input prices rose faster than producer prices and by high interest rates, continued the process of concentration of farm ownership into fewer units. Other variables contributing to the rapid increase in the capital requirements of agriculture include the necessary purchase and use of biological and technical innovations. One of the major consequences of the use of such innovations is the fact that they require larger farming units and thus a greater production output, per farm, so that that they are cost effective. This has increased the level of intra-farming competition as farmers, in trying to achieve acceptable economies of scale, have attempted to expand their operational capacities. Consequently, a resultant higher capital investment per farm has increased the vulnerability of a large number of farmers.

During the five year period between 1980 and 1985 the overall commercial farm debt increased from R55 334 million to R184 334 million, a 333 percent increase (Cooper, 1986:19). Concomitantly this increased the number of bankruptcies and the decline in the number of white farm units which during the corresponding period was 14,8 percent, - a fall from 69 372 to 59 088 units.⁽²⁾ By March 1987 farmers were estimated to be R12 billion in debt which was forecasted to reach R14 billion by December of the same year (Business Day, 01-

1. Cooper measured this increase for the period 1975-1984 to be 530 percent (1986:15).
2. It must be noted that bankruptcies did not account for the entire decline in white farm units, but only for an unmeasured portion thereof.

03-87). Whilst this debt was increasing, net income, after increasing by 113 percent between 1976 and 1980, dropped by 3,1 percent between 1980 and 1985 (Cooper, 1986:20).

Hattingh, in response to a 1983 SAAU survey of farmers which found that the distribution of farm incomes was grossly unequal, argued that the reason why 30 percent of all commercial farmers produce 75 percent of all farm income, - according to the survey - is because they control nearly 75 percent of all resources of agriculture in the country.

Hattingh believed that this tendency towards decreasing numbers of farm units was likely to continue and as a result white South African agriculture would in the future be characterized by fewer but larger farms (in D. Cooper, 1986:21). Marcus, (1986:6) in an attempt to measure the level of concentration in commercial farm unit ownership, argued that the number of farm owners was likely to be fewer than the number of units. Thus, assuming that the rate of decline in the number of farm owners is identical to that in farm unit numbers, the size of the group of owners has contracted by some 40 percent between 1950 and 1984, to little under 70 000. She also claimed that a large part of the commercial agricultural sector had been absorbed by non-agricultural producers through corporate and company interests.

Table 3, below, illustrates the unit and area holdings of farms in the modern capitalist farming sector, according to the type of ownership, for selected years between 1960 and 1980. It is important however to note that, as late as 1985, less than 1,0 percent of all private and

partnership ownership of land in South Africa outside the homelands belongs to non-whites (Population Census Report No:02-85-03 : 1985).

Table 3

Unit and Area Holdings of Farms in the Modern Capitalist Farming Sector, According to Type of Ownership, 1960-1980

Year	Individual and Partnership 1	Private and Public Companies 2	State and Quasi State Enterprises 3	Other 4	Total n
1960	98,4	1,1	0,3	0,2	105 859
1964	98,1	1,3	0,3	0,2	105 387
1970-1	96,8	2,7	0,3	0,2	90 422
1972-3	96,4	3,1	0,4	0,1	81 935
1975	95,4	4,0	0,4	0,2	77 100
1978	95,6	3,8	0,3	0,2	71 621
1979	91,5	7,7	0,4	0,4	69 360
1980	91,1	8,2	0,3	0,4	69 372
% Area Holding 1978	90,7	7,3	1,8	0,2	85 447

1. Includes land owned by the; white, coloured and Asiatic population groups.
2. Includes private co-operatives.
3. Includes Government enterprises, municipal and State lands and public corporations.
4. n = (1000) hectares.

Sources : 1. Report on Agricultural and Pastoral Production, and Timber and Wattle Plantations - Report No. 06-01-01, Census No. 37; 1962-1963.
 : 2. Reports on Agricultural and Pastoral Production; - Report No. 06-01 : 03, 08, 10, 12 - Census No. : 38, 44, 46, 48; 1964, 1970-1971, 1972-1973, 1975.
 : 3. Census of Agricultural and Pastoral Production; - Report No. 06-01 : 14, 15, 16; 1978, 1979, 1980.

The most notable trend emerging from the above table has been the decline in individual and partnership farm unit ownership which has corresponded with an increase in private and public company farm unit ownerships. Between 1960 and 1970-71 the former declined by 1,6 percent whilst the latter increased by 1,8 percent of the total

percentage share. During the following decade, 1970-71 to 1980, the former declined by 5,7 percent whilst the latter increased by 5,5 percent of the total percentage share. Although both trends have been gradual over the 20 year period, the change in ownership patterns was greatest between 1978 and 1979. Individual and partnership ownerships dropped by 4,3 percent; whilst private and public company ownerships rose by 102,6 percent.

No specific set of reasons can be given for this abrupt change in tempo for, whilst the changes were uniform throughout the country, three regions stood out - Southern Natal, Northern Transvaal and the North Eastern Orange Free State, which experienced the greatest drop in percentage share of individual and partnership ownerships. A number of farm units in both Southern Natal and Northern Transvaal were lost due to homeland consolidation. However, it may be argued that because these regions which were amongst the last to enter into full capitalist relations of production may have been experiencing a belated period of capital concentration and centralization. They thus registered the largest percentage share decrease in individual and partnership ownership. This process may have been rapidly accelerated by a continuing drought, increasing debt and an ending of certain selective tax subsidies. The maize belt of the North Eastern Orange Free State may have experienced similar forces but would mostly have been influenced by the increasing trend towards mechanization. Thus, because of mechanization, perhaps many marginally profitable farms were consolidated into larger units in an attempt to achieve the required economies of scale.

By 1978 private and public companies held 7,3 percent of all land area under cultivation. In 1980 the operations of these companies constituted 28,7 percent of the total current expenditure and 30,5 percent of the total value of sales in South African agriculture (Census of Agricultural and Pastoral Production : Report No. 06-01-16, 1980). Assuming that these companies have links with capital in the urban sector, then the above trends are compatible with Marcus' contention that there has been an inter-sectoral fusing of capital, which in turn could mean that ownership and control is concentrated still further, although it must be stated that this process is still very much in the infant stage.

In short, commercial agricultural production has been transformed by a process of capital concentration and centralization. Marcus (1986:11) argues, that for the sector as a whole, and for the inter-relation of the sector with mining, industrial and finance capital, it is clear that a small group of organizations represented by a handful of men and women, own and control a substantial part of agricultural production directly, and indirectly determine most, if not all, production within the sector. Given this recent process of capital concentration and centralization, it is likely that this trend will continue but it must be noted that presently private and public companies own approximately only 10 percent of all farm units and area holdings in the modern capitalist farming sector.

Nevertheless the shift towards a greater capital:labour ratio in agricultural production and mechanization, both reflects and reinforces this trend towards capital concentration and centralization.

4. Mechanization Trends in Commercial Agriculture

Although mechanization in agriculture began during the first half of the century, it was only after the Second World War - 1945 - that this process took upon a new dimension. The immediate post-war period witnessed an intensification of production and acceleration in the rate of accumulation and mechanization which lasted until the mid 1980s (Surplus Peoples Project, 1983a:17). Africa (1976:11), argued that the combined effects of this increased level of mechanization in the cultivation and harvesting of crops along with an increase in the use of minerals and fertilizers and the expansion of irrigated and drained areas, as well as many other developments have resulted in better yields per hectare, per labourer and per farmer.

'Conventional' economic analysts argue that the choice of technique depends almost entirely on cost, which in turn is determined by the available state and level of technology and by the relative price of both capital inputs, (capital goods and services) and labour. A change in the cost price in any of the latter three variables may, in effect, change the cost of the available technology. As a result, a different type of technology may now be cheaper to employ, which in turn might effect the cost of the other three variables.

Marxist analysis also assumes that capitalists wish to maximize profits, and that this will be achieved through a selection of techniques that increase the rate of surplus value extraction, which in turn, is most easily attainable through an increase in the organic

composition of capital (the capital intensity of production). Machinery and technology can achieve this not only by increasing the organic composition of capital but also by reducing the uncontrollable element in production - labour. By reducing labour and increasing management control over labour, capitalists may exert a downward pressure on wages. Indirectly therefore, machinery and technology act to suppress labour through labour-saving, and thus increase profits (De Klerk, 1983b:11,12).

During the 1940's and 1950's an increasing use of mechanization and technology in agriculture led to a replacement of animal power by mechanical tractive power and also increased the amount of land used for cultivation. Furthermore the process of mechanization transformed many farm activities, such as, planting, growing and harvesting and because of relative efficiency of the mechanical process, higher yields both in quantity and quality were consequently achieved (Africa, 1976; Nelson, 1983; Marcus, 1986).

Initially, this led to an expansion of agricultural activities which resulted in an increase in the demand for labour. At this stage much of the mechanization amounted to capital substituting (tractors for oxen) rather than labour saving and indeed shortages were being experienced (Surplus Peoples Project, 1983a:17). Even as late as the 1974-5 peak season white sugar cane farmers were experiencing large shortages of labour adversely affecting production (Ardington, 1976). Standish (1976:18) argued that during the same time period, 36,7 percent of white Natal farmers experienced a lack of skilled labour and 25,8 percent, unskilled labour.

However, although by the 1980s, the increase in the demand for labour had shifted in terms of the type of labour demanded, shortages were still in evidence. A study on employment and migration patterns undertaken in the Natal Midlands, during 1986, showed that nearly 8,0 percent of all white farmers experienced casual labour shortages, while just over 18 percent lacked certain types of skilled and semi-skilled labour (Stavrou, 1987). Consequently, a white farmer preference for a smaller and more skilled full-time resident and larger unskilled part-time labour force began to emerge. Lipton described this phenomenon as having occurred because of a higher grade of skills that were required thus "... mechanization led to a quantitative change in the labour requirements of farmers who needed younger and better educated men of whom they were still short" (1986:93). The existing 'surplus' of unskilled labour had to be controlled and thus farmers pushed, "... unskilled labourers living on white farms to some place where, while they (would) remain available for seasonal requirements, they (would) not be a drain on the farmer's resources during those portions of the year when he (the farmer) no longer needs them (Wilson, 1971:169 - parenthesis my addition).

The demand for casual labour though grew even more than that for full-time labour, mainly due to the fact that in the maize and wheat regions activities were centred on the pre-harvest period, which experienced a slack period thereafter. Thus, a contradiction was occurring for, whilst the cry of labour shortages continued and were throughout the early 1950's being met via the elimination of squatter

and in certain areas tenant rights, as well as through the influx of removed urban labour, many of these labourers were not being accommodated into full-time employment, but utilized on a part time basis only (Wilson, 1971; Natrass, 1981; Platzky and Walker, 1985).

It would have been expected that farmers rationalize in terms of the size of their labour force, but in South Africa generally mechanization has not been accompanied by a reduction in the number of workers employed. Africa (1976) argued that, between 1947 and 1969, permanent workers associated with mechanization increased in absolute numbers by 13 percent. This however is not strictly true for all sectors of agriculture. De Klerk (1983a), in his study on maize farm employment and technological change, found that between 1968 and 1981, following the introduction of large scale mechanical harvesters, the number of seasonal and permanent workers per farm employed in harvesting and delivery declined by 50 percent and 20 percent respectively. These figures tend to be conservative though, for, if the increase in the average size of farm units because of the decrease in the total number of farm units is taken into account, then the overall decrease is much larger. Thus, employment figures measured per 1000 hectares show a fall of 70 percent for seasonal and 50 percent for permanent workers. Nevertheless, in some agricultural sectors, as late as the mid-1980s farmers in response to mechanization, particularly tractorization, had generally failed to rationalize in terms of their capital:labour ratio. The Natal Midlands study showed that the average number of labourers to tractors per farm fell by only 7,4 percent between 1976 and 1986 (Stavrou, 1987:161).

The influence of mechanization on the social composition of the labour force has been immense. Increased levels of mechanization have produced an identifiable hierarchical skill structure, that had not previously existed, subsequently bringing about a reorganization of existing labour structures. Skilled and semi-skilled labourers have increased their percentage share of the labour force and, in the process, have become exclusively the preserve of male labour (Stavrou, 1987:225). While this enskilling of the labour force has occurred a simultaneous deskilling process is also in motion. Increasing levels of mechanization have, in many instances, rendered many traditional skills, upon which thousands of black farm labourers relied on for employment, obsolete.

Perhaps the most significant impact that mechanization has had in the South African agricultural sector is that because it effectively increased the amount of land under cultivation, directly increased the possibility of achieving higher economics of scale by lowering the average cost of production. For farmers the larger the initial fixed investment in a particular method of production, the greater the potential for lowering the average cost per unit by increasing the level of production. Cultivated and irrigated land as a percentage of total farm area increased from 6.4 percent in 1930 to 8,3 percent in 1946 to 13,2 percent in 1976 - a near doubling of cultivated land (Abstract of Agricultural Statistics 1986). Budlender also emphasized the role played by complimentary scientific and technological innovations to the mechanization process, which initially had an impact in increasing and then decreasing the demand for labour.

Herbicides, pesticides, fertilization and irrigation helped facilitate further expansion in farmer production and alter the demand for labour (1984:302). It was the tractor, followed by harvesters, mechanical loaders, cranes and, to a lesser extent, economical light lorries and trucks that laid this base and which allowed for the usage of other farm instruments.

The measure of the increase in ownership of tractors - tractorization - is not an adequate measure of increasing levels of mechanization, but because of the important role that the tractor played, since its introduction on a relative mass scale during the 1930's, in determining labour needs, the measure of this trend offers a good indication, as to the increase in mechanization. Marcus argued that tractors embody the essence of mechanical power in agriculture, and it

Table 4
Number of Tractors in Commercial Agriculture 1918-1980

Year	No. of Tractors
1918	231
1926	1 302
1930	3 684
1937	6 019
1946	20 292
1950	48 422
1953	74 610
1957	100 420
1965	138 422
1977	182 000
1980	173 000

- Sources : 1. Africa, R. (1976:2)
 2. Abstract of Agricultural Statistics 1986
 3. South African Statistics 1986

is the use of mechanical power, as opposed to animal and human-power, which underlies mechanization (1986:13). Table 4 above illustrates the increase in tractor ownership between 1918 and 1980.

From a modest total of 231 tractors in commercial agriculture in 1918, the number of tractors rose to peak at 182 000 in 1977. The biggest increase in tractor ownership took place after 1946, with the number of tractors increasing by 487,4 percent between 1946 and 1960. The overall increase in tractors has primarily resulted in a decline in the number of hectares under cultivation per tractor from 1,44 hectares per tractor in 1930 to 0,06 hectares in 1976. Secondly as a direct consequence of tractorization, the total arable area under cultivation increased by 119 percent, from 1930 to 1971 before declining by 12 percent by 1976. The total land area available to agriculture has, after increasing by 11 percent from 1930 to 1960 decreased by 7 percent over the following 18 years.

Perhaps the most important impact that the increased use of tractors, lorries - 264 percent between 1950 and 1980 - and harvesters - 86 percent between 1965 and 1980 - (Abstract of Agricultural Statistics 1986) as well as other mechanical equipment and fertilizer, apart from the natural expansion it created for the sector is that, by increasing the amount of capital investment in the sector as a whole, they have brought the urban and rural capital sectors closer together. By the late 1960's, the commercial agricultural sector had mechanized and continued to do so well into the 1980's. This can best be illustrated by showing the investment in tractors, machinery and other

implements as a percentage of the gross capital formation in agriculture (Table 5).

Thus, two periods have witnessed a rapid increase in the capital investment of machinery and implements as a proportion of the gross capital formation in agriculture. These have been between 1937 and 1947 and 1977 to 1984. It may be said that the 1937-47 period were the "take-off" years for mechanization in commercial agriculture, as the investment in new tractors, machinery and implements as a percentage share of the gross capital formation in agriculture increased by 190 percent and set a rapid pace for the future mechanization of agriculture. The increase of investment in new

Table 5
Investment in New Tractors, Machinery and Implements as a Percentage of the Gross Capital Formation¹ in Agriculture 1937 - 1984²

Year	% Share
1937	18,2
1947	52,8
1957	44,1
1967	61,6
1977	54,4
1984	77,3

1. Capital goods in agriculture consist of the following divisions:
 - a) fixed improvements: such as houses, sheds, stables, dams, boreholes, fences, orchards and vineyards;
 - b) machinery and implements, such as tractors, planters, harvesters, trucks and water pumps and
 - c) livestock, including poultry (Africa, 1976:13).
2. Preliminary figures used for 1984.

Sources : 1. Africa, R. (1976:13).
2. Abstract of Agricultural Statistics 1986.

tractors, machinery and implements percentage share of the gross capital formation in agriculture between 1977 and 1984 was 42,1 percent - (although calculated on preliminary data) may be indicative of a new phase which commercial agriculture has entered - that of nascent monopoly capitalism.

Increasing farm sizes due to the concentration of capital and a decreasing cost of capital also increased the levels of mechanization of white farms which have, apart from influencing the level of black farm labour employment, also altered production patterns.

The tendency to a large scale mechanized farming has been accompanied by a move away from diversified agricultural production. Pricing policies, as well as the nature of mechanized production has seen a growing concentration of maize and wheat production at the expense of other grain production (Financial Mail Review on Agriculture in D. Cooper 1986:21).

Mechanization is thus set to become a vital cog in this latter stage of capitalist development and, as far as labour is concerned, could take upon a new role. New and more sophisticated mechanical implements should reduce the need for casual and unskilled labourers, and in the process demand a strata of skilled labourer-technicians in order to operate them. There is little evidence to suggest that during the past half century mechanization has resulted in a vast displacement of labour, but this position could alter. De Klerk (1983a) in a study on technological change and employment in the maize region of the Western Transvaal argued that, in order to maximize profits, capitalists should select those techniques which increase the rate of surplus value extraction. This he envisaged as being

primarily achieved through increasing the capital intensity of production and it is thus felt that a strategy of substituting labour for capital could effectively be implemented through a sustained process of mechanization. The future threat of farm labour unionization may merely serve to reinforce this trend towards increased levels of mechanization, in spite of the fact that many individual farmers are already overcapitalized and face serious debt problems. Finally, Marcus has argued that mechanization has accelerated and intensified the process of reorganization and rationalization such that the increasing division of labour between producers has tended towards mono-production and specialization (1986:33). This again is evidence of an industry which has attained a higher level of capitalization and is rapidly moving into the orbit of monopoly capital.

5. Conclusion

In concluding it may be argued that the policy of separate development has entrenched the conditions whereby agriculture could continue to travel along a capitalist development path, and consolidate the sector within the overall South African economy. This was to have profound effects on both the employment and migration patterns of black farm labourers, the level of capitalization and the rate of mechanization in white agriculture.

This paper has briefly outlined black farm labour movements which have occurred during the past 35 years, underlining an overall net decline. This poses questions about the future of black labour in the

white farming sector. Clearly, more research is necessary in order to address the main issues relating to both the current patterns of black farm labour employment and migration. Variables such as the type of demand for labour including; migrant versus resident, permanent versus casual, male versus female, skilled versus unskilled and unionized versus un-unionized need to be studied. With one third of the black population resident and directly dependent upon this sector for a livelihood, the importance of such research must not be under-emphasized.

The effects of rationalization, including the rate of capital concentration and farm unit centralization in commercial agriculture may be said to be a clear sign exhibited by an industry well into the nascent monopoly stage. A continued development along such a path is going to have a vast array of implications for agriculture in the future, particularly if established urban monopoly capital succeeds in 'penetrating' the sector. The ramifications of the present transition path on any future transition path need to be examined, in particular the possibility of the emergence of a future socialist, peasant, state monopoly or corporate monopoly path in South African agriculture.

Finally, there can be no doubt over the role that mechanization has played over the past 35 years in the restructuring of South African agriculture. The rate at which future mechanization occurs is likely to have profound effects on both farm labour and the level of capitalization. Herein may lie the key with which we can view the future of South African agriculture.

APPENDIX ONE

Chapter IV of Act 18 of the Native Land and Trust Act of 1936, 1956 :

This Act which was designed primarily to effect an even distribution of labour for the white farming community, was made available to the whole Union. The Act divided black residents and labourers living on white farms into three categories; servants, labour tenants and squatters (Roberts, 1959:114) Servants were defined by the Act as comprising of any black who was continuously employed in any capacity by the owner of the land on which he was a resident. This had important repercussions for all wage labourers, for a doctrine of an asymmetrical distribution of rights and duties in the employment contract was adopted. Haysom and Thompson outlined how the medieval authority of the master was imported wholly into the contract as a necessary implied term. The 'right' of the master to command, the 'duty' of the servant to obey, was the concept used to ensure control of the myriad of daily tasks which form part of the servant's work but which were not anticipated at the inception of the contract (1986:222). In effect this approach gave the employers the sole and exclusive control over their employees working and residential conditions, and also allowed for the establishment of rules and the discipline of offenders. Consequently the farmer, as the master, had the right to enforce dismissal from both the work place and residential domain of the labourer and his family. This meant that the termination of employment, through legitimate means or via a breaching of the contract of employment, to which the labourer rarely had any recourse, could also have resulted in the loss of housing and land, upon which a family may have resided for generations.

Labour tenants on the other hand were defined as any black adult, other than a servant, who was employed by the farm owner on whose land they resided, or on any such other land to which the farmer held title to, or who were obliged by contract to render service to the farmer. The service to be rendered as in lieu of the right to reside and cultivate the land upon which they stayed and could have extended to other members of their family or to any person dependant upon them. The relationship between a farmer and his labour tenants were more flexible than that between farmers and their servants. The tenant system allowed for a six month escape from the year long service contracts which the servant had to endure. Nevertheless legal restrictions on the mobility of the farm labourer, be they tenants or servants, meant that in the final analysis the tenant was effectively at the mercy of the farmer.

The final category of blacks living on the farms, were squatters, who were defined as any black male over the age of eighteen who resided on land belonging to a farmer, and who paid rent for the right of residence. A squatter had to be neither a servant or tenant and reside on the farm without rendering any service to the farmer. By 1956 only those squatters who had been continuously registered and resident on the farms for more than twenty years could have remained and stayed on white owned farms. Registered squatters and tenants incurred fees for their white farmers, whereby the State hoped to pressurize farmers to reduce this type of farm resident.

REFERENCES

- Africa, R. (1976) **Mechanisation in South African agriculture, 1936-1974**, Paper Presented at the SALDRU Farm Labour Conference, University of Cape Town, Cape Town.
- Ardington, T. (1986) **Factors affecting Wages and Employment in the South African Sugar Industry**, Paper Presented at the SALDRU Farm Labour Conference, University of Cape Town, Cape Town.
- Budlender, D. (1984) "Technological Change and Labour on 'White' Farms," in **South African Review Vol. II**, Johannesburg : Ravan Press, pp.300-307.
- Business Day : 01st March 1987.
- Cooper, D. (1986) **Ownership and Control of Agriculture, in South Africa**, Paper Presented at the South African Economy After Apartheid Conference, University of York, Leeds.
- Davies, R., Kaplan, D. Morris, M. and D. O'Meara (1976) "Class Struggle and the Periodisation of the State in South Africa", in **Review of African Political Economy**, No7, Sept, pp.4-30.
- De Klerk, M. (1983a) "Maize Farm Employment", **South African Labour Bulletin**, Vol. 9, No. 2, pp.19-46.
- De Klerk, M. (1983b) **Technological Change and Employment in South African Agriculture : Some Findings and Implications**, unpublished seminar paper, Centre for African Studies, University of Cape Town, Cape Town.
- Freund, W. (1984) "Forced Resettlement and the Political Economy of South Africa", **Review of African Political Economy**, No. 29, July, pp.49-63.
- Greenberg, S. (1980) **Race and State in Capitalist Development : South Africa in Comparative Perspective**, Johannesburg : Ravan Press.
- Haysom, N. and L. Thompson (1986) "Labouring Under the Law: South Africa's Farmworkers", **Industrial Law Journal**, Vol. 7 pp.218-240
- Legassick, M. and H. Wolpe (1976) "The Bantustans and Capital Accumulation in South Africa," in **Review of African Political Economy**, No. 7, September, pp.87-107.
- Lipton, M. (1986) **Capitalism and Apartheid, South Africa, 1910-1986**, Cape Town : David Philip.
- Marcus, T. (1986) **Restructuring in Commercial Agriculture in South Africa: Modernising Super-Exploitation**, Amsterdam: Dr. Govan Mbeki Fund.

- Morris, M. (1976) **Apartheid, agriculture and the state : the farm labour question**, Paper presented at the SALDRU, Farm Labour Conference, Cape Town.
- Natal Mercury : 10th November 1986.
- Nattrass, J. (1976) **Capitalist Agriculture: Accumulation and the Labour Supply: The Case of South Africa**, Paper Presented at the SALDRU Farm Labour Conference, University of Cape Town, Cape Town.
- Nattrass, J. (1981) **The South African Economy, its growth and change**, Cape Town : Oxford University Press.
- Nattrass, J. (1985) "The dynamics of black rural poverty in South Africa", in H. Giliomee and L. Schlemmer (eds), **Up Against the Fences**, Cape Town : David Philip, pp.16-27.
- Nelson, J. (1983) **A Survey of Technical Change and Employment in the South African Cane Industry**, Unpublished Honours Dissertation, Department of Agricultural Economics, University of Natal, Pietermaritzburg.
- Platzkey, L. and L. Walker (1985) **The Surplus People : Forced Removals in South Africa**, Cape Town : Ravan Press.
- Roberts, M. (1959) "The Law Relating to Farm Labour" in **A Survey of African Farm Labour**, South African Institute of Race Relations Journal, Vol. 26, No. 3, pp.107-116.
- Standish, B. (1976) **Aspects of Wage and Labour Supply Conditions of Farm Labourers in Natal**, Paper Presented at the SALDRU Farm Labour Conference, University of Cape Town, Cape Town.
- Stavrou, S. (1987) **Employment and Migration Patterns among Black Farm Labourers in the Natal Midlands**, Unpublished Masters Dissertation, Development Studies Unit, University of Natal, Durban.
- Stavrou, S., Mbona, D., Yokwe, X. and C. Mbona (1988) **K5 - a preliminary study of an informal rural settlement**, Rural-Urban Studies Unit Working Paper No. 12, University of Natal, Durban.
- Surplus People Project (1983a) **Vol. I Forced Removals in South Africa**, Cape Town, Ravan Press.
- Surplus People Project (1983b) **Vol. IV Removals in Natal**, Cape Town, Ravan Press.
- Wilson, M. (1971) "Farming 1866-1966" in M. Wilson and L. Thompson, (eds), **The Oxford History of South Africa Vol. 2 South Africa 1870-1966**, London : Oxford, pp.104-171.
- Wolpe, H. (1972) "Capitalism and Cheap Labour - Power in South Africa : from Segregation to Apartheid", **Economy and Society**, Vol. 1, pp.425-456.

GOVERNMENT PUBLICATIONS

- 1962-3 **Report on Agricultural and Pastoral Production and Timber and Wattle Plantations**, Census Report No. 06-01-01, Pretoria : Government Printers.
- 1964, **Census of Agricultural and Pastoral Production** Report No. 06-01-03, Pretoria : Government Printers.
- 1970-71 **Report on Agricultural and Pastoral Production** Report No. 06-01-08, Pretoria : Government Printers.
- 1972-73 **Report on Agricultural and Pastoral Production** Report No. 06-01-10, Pretoria : Government Printers.
- 1975 **Report on Agricultural and Pastoral Production** Report No. 06-01-12, Pretoria : Government Printers.
- 1978, **Census of Agricultural and Pastoral Production** Report No. 06-01-14, Pretoria : Government Printers.
- 1979, **Census of Agricultural and Pastoral Production** Report No. 06-01-15, Pretoria : Government Printers.
- 1980, **Census of Agricultural and Pastoral Production** Report No. 06-01-16, Pretoria : Government Printers.
- 1985, **Abstract of Agricultural Statistics** Pretoria : Department of Agricultural Economics and Marketing.
- 1986, **Abstract of Agricultural Statistics** Pretoria : Department of Agricultural Economics and Marketing.
- 1985, **Population Census, Geographical Distribution of the Population** Census Report 02-85-01, Pretoria : Government Printers.
- 1985, **Population Census, Industry by Development Region, Statistical Region and District** Census Report 02-85-03, Pretoria : Government Printers.

This work is licensed under a
Creative Commons
Attribution – NonCommercial - NoDerivs 3.0 Licence.

To view a copy of the licence please see:
<http://creativecommons.org/licenses/by-nc-nd/3.0/>