5. CONSOLIDATION AND RE-APPORTIONMENT

5.1 Introduction

Before considering in detail solutions to the problem of fragmentation as found in the study area, it is necessary to return to the problem in its broader sense. This is necessary in order to understand the parameters of the problem, to see how solutions to it vary from country to country, to uncover approaches to solving the problems that exist in South Africa, and so to place the specific problem as found in the study area in some broader and more meaningful framework. In the light of this framework considered in chapters 5 and 6, the solutions proposed for the study area in chapter 7 will be more readily appreciated and understood.

Consolidation and re-apportionment are the obvious solutions to the problem of fragmentation. The methods of consolidation and re-apportionment, the legislation governing it and the means of implementation, will however vary widely according to local, political, sociological, and economic circumstances.

5.2 Consolidation and Re-apportionment in Countries Other than South Africa

Consolidation legislation is most highly developed in the following European countries, France, Poland, Western Germany, Netherlands, Italy, Denmark, Sweden, Switzerland, and Belgium, and to a lesser extent Spain and Portugal. On the Asian continent, India, Pakistan, and Japan apply advanced legislation. The stage that consolidation has reached in certain countries is shown in Table No.8.

Table No.8 Europe: Land Consolidation 1958 [41]
(Areas in Thousand Hectares)

Country	Total Agricultural Area	Land Consolidation: Carried Out	In Course of Execution	Applied For
Austria	4082	314	46	1180
Finland	2879	2319	300	Prov.Vasa
France	34567	2020	862	14000
W.Germany	14383	4320	800	5738
Italy	20905	15	-	10000
Netherlands	2306	92	171	1466
Switzerland	2172	231	30	485

As mentioned previously fragmentation comes in two forms, multiplicity of owners, or multiplicity of units. Consolidation, therefore, must be implemented to group single units into economic units. This is required for the multiplicity of units which occurs in the more backward countries of Africa, Asia, and South America. Consolidation must also be implemented to group together many non-adjoining units representing one farm into a single economic unit, as is required for the multiplicity of units. This latter type of consolidation is generally found in Europe where the Roman laws of inheritence, and the Code Napoléon have been applied.

Certain legislation for the implementation of consolidation schemes other than in South Africa, simply provides for the improvement of the land, whilst other legislation attempts to encourage efficient farming practice.

The method of implementation, and the reason why a consolidation and re-apportionment scheme is implemented depends upon some of the following:-

(1) The amount of fragmentation which exists in a country, and the severity of the problem in connection with the economy of that country.

(2) The percentage of a country's finance which is available to implement a consolidation or re-apportionment scheme.

(3) The political system pertaining in a country, for example a dictatorship may force a scheme upon the population whilst a democracy may require the support of the majority of either the electorate or the farming community.

(4) The reason for applying the scheme, for example, shortage of food, wastage of labour, wasteful farming practices leading to soil erosion, and wastage of land as happens when units are too small so that they are abandoned.

When the need for a scheme has been recognised, the legislation implemented, the funds made available, and the farming community have accepted and given their approval to such a scheme, then the extent to which it is implemented may be one of the following [42]:-

(1) Consolidation of fragmented holdings without any construction work.
(2) Consolidation of fragmented holdings with small improvements in the road systems, but without major construction works.
(3) Land consolidation or consolidation in the wider sense, combined with all kinds of construction work which may be connected with the reorganisation of holdings.

Of the above three types, the first is obviously the cheapest and simplest to introduce, whilst the third is the most difficult and expensive to implement. In undeveloped countries the first method is ideal as an introduction, though in the long term it is found that the third method is the most practical if the legislation and capital are available for its implementation.

Various methods of implementing a consolidation or reapportionment scheme exist. Consolidation by purchase or expropriation of the whole area affected is one method, and Chile, Spain, and Mexico are countries where this method is adopted in various forms. Consolidation and exchange of land by mutual agreement is another method, whereby a number of farmers agree to consolidate or agree to exchange land to allow consolidation. When a majority of farmers, or those farmers holding a majority land area voluntarily agree to consolidate the exercise becomes mandatory in the region where the scheme is to be implemented. Countries that apply these methods are Switzerland, Western Germany, Holland, and Uruguay.

Different methods of financing consolidation exist. The broad outlines of these are listed below [43]:-

(1) Establishment of a consolidation fund by the country.
(2) Advance payments by the participating owners to implement a scheme
(3) Construction credit at a low interest rate where public funds are used.

(4) Sufficient time for amortization, to allow the owners to pay off their debts.

(5) Levying a rate on landowners some years in advance of a land consolidation scheme.

Whilst methods (2) and (5) appear similar, method (2) is likely to be found where voluntary consolidation is allowed, and method (5) a compulsory consolidation scheme where all owners pay the levy in the area in question.

Where consolidation has been implemented various benefits have accompanied the process. Examples of these benefits are as follows [44]:-

(1) In Austria, the gross yields of farms increased from between 18 and 40 per cent when consolidation took place.

(2) Also in Austria, the average increase in nett agricultural production as a whole amounted to 25 per cent.

(3) In Austria, the implementation of consolidation schemes resulted in increased labour efficiency, so that the rural labour force was reduced by 14 per cent.

(4) In Switzerland, a rise in agricultural output of between 20 and 30 per cent was noted within three years after consolidation schemes were implemented.

(5) In Italy, agricultural production was in part trebled or quadrupled owing to changes in crop intensification and irrigation where consolidation was applied.

5.3 Examples of Consolidation in Various Countries

To consider the solution to fragmentation in South Africa, two examples follow in more detail than that given elsewhere in this chapter. Details of the methods of consolidation in the two countries are commented upon, with more attention being given to those parts of the legislation which could be adopted for a consolidation scheme in South Africa.

5.3.1 Consolidation in the Netherlands

Up to 1924 consolidation had been achieved by the voluntary exchange of individual plots. [45] The legislation that was introduced in 1924 allowed the majority of the land owners, who owned more than 50 per cent of the land falling within a scheme to apply for consolidation. The outcome of the 1924 legislation was not significant, and when amendments were made in 1938 only approximately 12000 hectares had been consolidated.

The "Ruilverkaveling"goes hand in hand with comprehensive land improvement projects. The term "Ruilverkaveling" cannot be translated directly into English, but the nearest concept would be the pooling of parcels of land under separate ownership, and after replanning and subdividing the consolidated area, redistributing the parcels to the various owners. (46)

The function of the "Foundation for the Administration of Farm Lands", a State organisation, is to provide funds for the purchase of agricultural holdings. One of the objects of consolidation is the transferring of farmers from one overcrowded region to another region which has a reduced density of population and larger farms. An example of this was the large scale resettlement as a result of the Act of 27 November 1947, which was for land reallocation on Walcheren. The Act provided for a "new parcelling" (Herverkaveling) by the transfer of farmers with undersized properties on the island onto the newly drained land, their former properties could thus be purchased from them for use in rounding off undersized holdings within the consolidation area. (47)

The introduction of Act No.510 of 1954, the "Land Consolidation Act" (De Ruilverkavelingswet), (48) produced the legislation to permit re-allotment by agreement and where such agreement could not be reached, provision for re-allotment by the force of legislation was also provided. Under agreement, three or more owners may undertake in writing to merge specific properties owned by them and to divide the resultant whole in a specified manner, and to distribute it among themselves by notarial act. The iniative of consolidation comes from the State, the provinces and the communes, and requests for action may be submitted to the authority having jurisdiction over the area in question.

Approval for a scheme is obtained by a majority of voters and also those owning more than 50 per cent of the land in the scheme giving their favourable vote. Abstaining voters are presumed to be in favour, and adjoining owners though not included in the scheme may, if they so wish may be included.

The first stage for a scheme is a public enquiry to determine the feasibility of consolidation, and the area to be included in the proposed scheme.

The Local Commission draws up a list of rightful owners which is brought to the attention of the persons concerned.

The Land Consolidation Commission then names experts, who working in teams, each containing an odd number of members, establish land values. Two valuations are obtained, one at the beginning of the procedure to permit the redristribution of plots, and another when consolidation has been completed, to determine the change of value which occurred, for compensation purposes. The Central Consolidation Commission establishes a land classification system, and for each class fixes a value per hectare. Permission to change property values must be obtained from the Central Commission.

The consolidation plan is produced by the local commission, then it is approved by the Central Consolidation Commission, with interested parties being informed and having the right of appeal. The ratio between the value of the plots assigned, and the total value of properties after the land value deductedrequired for works in general interest, must be equal to that of property brought into the scheme. Where possible the land allocated should be of the same quality, for the same use as that brought in, and should include all or part ofthe original land. Leases on land are treated in a similar way with the proviso that only registered leases are considered. Owners of land should have access to a public road or watercourse. Exceptions to the difference in valuation may be permitted up to 5 per cent, the di[illegible] being paid in cash after consolidation on the b[illegible] of the new valuation.

The legislation for consolidation provides that real rights and easements are to be adjusted or liquidated by settlement of the financial liabilities incurred, or are to be redeemed. Mortgages are transferred with the same priority of rank to the replacement units.

The local consolidation commissions are appointed by the Permanent Commission of the State. They include at least one land owner and, in certain cases, a tenant, and are assisted by a land surveyor from the Land Registry Service. The general supervision of consolidation matters is exercised by a Central Technical Farming Commission, with at least two fifths of its members being appointed from a double list recommended by agricultural organisations, and including owners, tenants and agricultural workers.

The operating costs of the Central Commission, the Land Registry and of assemblies are borne by the Crown. All other expenses, to the extent that they are not covered by subsidies, are payable by the participants, who receive advances from the Crown for this purpose. The Crown also pays the over-all cash compensation received by owners where they transfer land to public agencies, or when their entire properties are bought out at their request.

Under the 1938 Consolidation Act, costs were divided in accordance with pre-consolidation land valuation. This Act was replaced by an other in 1941 under which plot areas formed the basis for the division of costs. The 1954 Act, gives the advantage gained by the owner from consolidation as the basis for payment; for this purpose the consolidation procedure includes a second valuation. Sums due are collected through a "consolidation rent", payable to the Crown over a 30 year period, or earlier at the option of the debtor.

As a result of the legisltaion of 1954, by 1961 approximately 134000 hectares had been consolidated, 274000 hectares were in the process of being consolidated, and consolidation had been requested for 1215000 hectares. The total of the three areas represented over half the agricultural land in the Netherlands.

5.3.2 Consolidation in Belgium

The formation of the "Société Nationale de la Petite Propriété Tenienne" (SNPPT) in 1935 for the purpose of buying abandoned or neglected land improving it and then redistributing it was the start of consolidation in Belgium.[49] The original object of the Société was to assist the problems of unemployment due to the economic crisis at the time of its formation.

Since the 1940's the SNPPT has been conducting a policy of land improvement. Land which is abandoned, uncultivated or badly cultivated is either bought or expropriated by the Société and then consolidated with farms which are not viable or for the establishment of new farms.

The legislation for consolidation schemes requires that they be so designed as to establish the new parcels of land as near to the farm buildings as possible. Consolidation can be considered as "statutory" (legal) or "by mutual agreement" (volontaire).[50]

Consolidation can be carried out at the request of interested parties and approval of a scheme is by a majority, with those abstaining from voting presumed to be in favour. As a result of a public enquiry, the practicability and the area to be considered being defined, a scheme can be implemented. Those areas which are unsuitable for agricultural purposes are not included in a consolidation scheme. The documents necessary for assessing the situation of farm enterprises are drawn up and may be consulted by the parties concerned.

The valuations of properties are classified by the consolidation commission assisted by an advisory commission. The properties are classified according to their productivity; with no account being taken of elements unrelated to productivity, but these elements, adding to, or subtracting from, the value after the establishment of the new plots, are made the object of special estimates. The "value zones" formed by grouping lands of the same class are designated on a map which shows the existing subdivisions.

The preparation of the consolidation plan is the responsibility of the local commission which is established under the land consolidation legislation. The plan is drawn as soon as the consolidation proposal has been approved by the assemblies of owners and tenants, and plans are produced for the owners, the usufructuaries and the tenants.

Where a cash balance is paid it may not exceed 5 per cent of the value of the plots allocated to the owner. If during the process of consolidation the value of large areas has been increased as a result of improvement measures financed by public funds, then these plus-values are used as a basis for fixing compensation values. Compensation for loss of tenure is payable to the farmer if the over-all value of the plots is lower than that of the original ones. All real rights are transferred to the replacement plots. If the state of work, or the settlement of disputed accounts threatens to delay the implementation of consolidation, the Consolidation Commission may include in the costs to be divided, a reserve for liquidation.

Prior to 1956 the Act of 4th May 1949 had provided only for consolidation by mutual agreement, which was to be by at least two owners with an exchange operation carried out under State control. The "Act Relative to the Statutory Consolidation of Rural Estates June 1956", gave the SNPPT extended powers to implement consolidation schemes, and to assist in the implementation of voluntary schemes. The Crown encourages this operation by granting tax advantages and other benefits, especially in the technical field.

All land included in a consolidation scheme is reduced in value by that of the land required in the common interest for roads, waterways and buildings. When land is required outside the scheme the Consolidation Commission may be authorized to expropriate, provided it is in the public interest.

Any legal acts relating to consolidation are explicitly exempted from registration and stamp taxes. Tax advantages are granted for the exchange of rural holdings.

6. CONSOLIDATION AND RE-APPORTIONMENT IN SOUTH AFRICA

In South Africa there is no legislation that can be used to implement a consolidation scheme or re-apportionment scheme. The consolidation of land can however be carried out by private individuals who own adjoining units and have the separate titles replaced by a consolidated title. There are certain Acts that can be used to prevent further subdivision of land where it will create uneconomic units, certain Acts that prevent the exploitation of land, and other Acts that could be adapted to implement consolidation and re-apportionment.

6.1 The Acts that Prevent Fragmentation and Bring About Consolidation and Re-apportionment

"The Subdivision of Agricultural Land Act, (Act No.70of 1970) as amended", (24) was created to prevent further fragmentation. It makes no attempt to consolidate land, but would prevent a reoccurrence of fragmentation when the problem has been rectified. Since the implementation of this act, subdivisions of agricultural land have to be approved by the Soil Protection Unit of the Department of Agricultural Technical Services. The method by which an economic unit is reached is to liase with the local extension officer, and the Department of Agricultural Economics and Marketing, who find the typical crop grown in an area and the expected nett return from this crop. If in the opinion of the Soil Protection Unit both the subdivision and remainder are economic, then approval for subdivision will be given.

"The Soil Conservation Act, 1969 (Act No.76 of 1969) as amended", (19) was created to prevent soil erosion and for the conservation, protection and improvement of the veld, the soil, the surface of the land, the vegetation and the sources and resources of the water supplies. The object of this Act is therefore to prevent the exploitation of the natural resources. The various parts of the Act if implemented in an area where fragmentation existed could prevent farmers from farming if the exploitation of land had reached severe proportions, and this could result in farmers being forced from the land.

"The Expropriation Act, 1965 (Act No.55 of 1965) as amended"[51] was created to allow the Government to expropriate, or to take the right to use property for public purposes. This act may be used to prevent exploitation and could be amended for implementing a re-apportionment scheme. There are certain amendments which are suggested if the Act were to be adapted for such a scheme. Section 8 covers compensation to be paid and could be amended as follows:-

"Section 8.(1)(c) in the case of a Government Re-Apportionment Scheme

(i) an amount related to the economic value of the property; and or

(ii) an amount that would have to be invested at the Land Bank interest rate, to obtain the nett income as presently derived from the property or portion thereof".

The present wording for Section 8.(1) is as follows:-

"The price shall not exceed:-

(a) in the case of any property other than a right, the aggregate of:-

  (i) the amount which the property would have realised if sold on the date of notice on the open market by a willing seller to a willing buyer; and

  (ii) an amount to make good any financial loss or inconvenience caused by the expropriation; and

(b) in the case of a right, an amount to make good any financial loss or inconvenience caused by the expropriation or the taking of the right.

To enable farmers to improve their farms, and to take into account this improvement when expropriating, an additional section in the act is required. The suggested wording is as follows:-

"Notification of the implementation of a proposed re-apportionment scheme shall be served on the owners of farms as laid down in Section 4 of the Act. A period of time, not exceeding two years will be allowed, during which the owner may improve his farm with the intention of making it an economic unit, (various Government Departments may assist in enlightening the farmer on the course of activity if he is not aware of what is required of him) if it does not already qualify under this classification. Provisional classification may be given at the start of the scheme, purely as a broad outline, but the final classification will not be given until the expiry of the time period".

Section 4 of the Act empowers the Minister to expropriate land. As far as improvements are concerned it is felt that the period of time from the start of a re-apportionment scheme to its implementation may well be longer than the 60 days for other forms of expropriation. This period of time enables property owners a chance to improve their units before they are classified. After this period of time and before classification no further value of improvements would be accepted.

With these amendments it is suggested that this Act will assist the implementation of a re-apportionment scheme.

"The Unbeneficial Occupation of Farms Act, 1937 (Act No.29 of 1937) as amended,"(52) was created to provide for the "appropriation" and "allotment" of land which is not beneficially occupied by persons carrying out the farming operation. This Act could be used to bring about consolidation as it can evict the farmer from an uneconomic unit, or a number of farmers (multiple ownership) from one unit that is not equivalent to the same number of economic units. The one amendment in the Act that provides an escape clause in section 2 (c) should be amended as follows :-
"2 (c) that in the case of a person referred to in paragraph (a) such person, and in the case of persons referred to in paragraph (b) such persons do not derive from such farming operations, sufficient income from the said portion, such that in (a) the income is that required for an economic unit, and in (b) the income equal to the number of owners multiplied by that income for an economic unit."
This proposed amendment would have the effect of ensuring that income is derived from farming activities only.

This would have the effect of using available land and not allowing persons to own land and obtain their income by other activities. The other effect is to replace the phrase "reasonable standard of living" by "income that is required for an economic unit." The latter can be specified whilst the former would be difficult to define in a specific amount.

"The Land Tenure Act, 1966 (Act No.32 of 1966) as amended," [53] was created to provide for the acquisition and development of land for agricultural purposes. The Act could be used for a re-apportionment scheme as it enables the State to purchase land suitable for farming. This could cover units of land which are uneconomic where owners cannot afford to enlarge their areas. In these circumstances the State may either buy these uneconomic units or alternatively buy an adjoining economic unit to lease or sell to the owner of an uneconomic unit.

"The Physical Planning and Utilisation of Resources Act, 1967 (Act No.88 of 1967)", [54] was created to prevent persons subdividing land in a controlled area, where the definition of a controlled area is that which has been proclaimed in the Government Gazette to the satisfaction of the State President. This Act superseded the Natural Resources Development Act No.51 of 1947. The object of both Acts was to prevent the indiscriminate and speculative subdivisions of peri-urban and rural land in the Orange Free State Goldfield, and to prevent the[55] encirclement of new towns with small agricultural holdings. These Acts were an attempt to prevent fragmentation in specific areas, but made no attempt to bring about a solution to any existing problems.

6.2 Suggested Methods of Consolidation [56]

In South Africa the type of consolidation required is that which groups single units into economic units and brings together the many non-adjoining units representing one farm into a single economic unit.

There is at present no legislation that can be used directly to implement consolidation. The following three methods are possibilities which could be used in the

South African Context:-

Method 1 Compulsory purchase and consolidation of land by the State followed by the sale of those consolidated portions of land to an expected reduced number of farmers. Alternatively instead of the consolidated land being sold it could be leased to farmers for a long term, for example twenty years.

Compulsory purchase would not be popular with the farming community, any more than it is with the urban population, and particularly unpopular with those farmers who would be forced off the land.

The cost of compulsory purchase would be astronomical if the Government were to buy land at its present inflated value. Agricultural land tends to be priced above its economic value. To buy at an inflated price and to sell to the farmer at the economic price would result in a heavy burden on the taxpayer. To sell back to the farmer at the inflated price would most likely put him further into debt, and only recover part of the Government outlay. The high cost of agricultural land is brought about by persons buying land as an investment, thus inflating the cost of land to the farming community. To overcome this, some form of tax on the land that is not used, plus the restriction to sell land only to genuine farmers, could assist the price structure. The parallel in the urban environment , is that when a township has been declared, rates are charged on land and improvements, after a period of time, although these improvements may not exist.

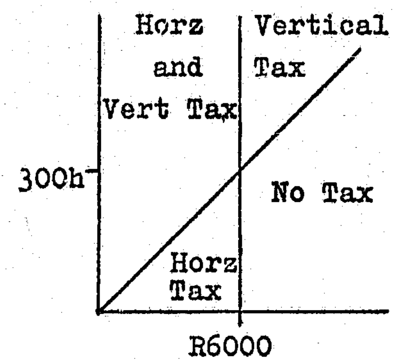
If this method were to be implemented the Government would require that no reoccurrence of uneconomic units came about. The greatest control would be obtained by leasing [57] the units, provided they are not short-term or insecure leases. [58] Restrictions would be included in the lease, covering such aspects as soil conservation, stock reduction, fencing, and farming systems to suit the particular farms. Psychologically and practically it would be simpler to restrict and control the farmers' activities on land that is leased, than on land which is owned by them. The other advantage of leasing is that farmers would be free of burdensome loans, which tend to restrict the development of farms.

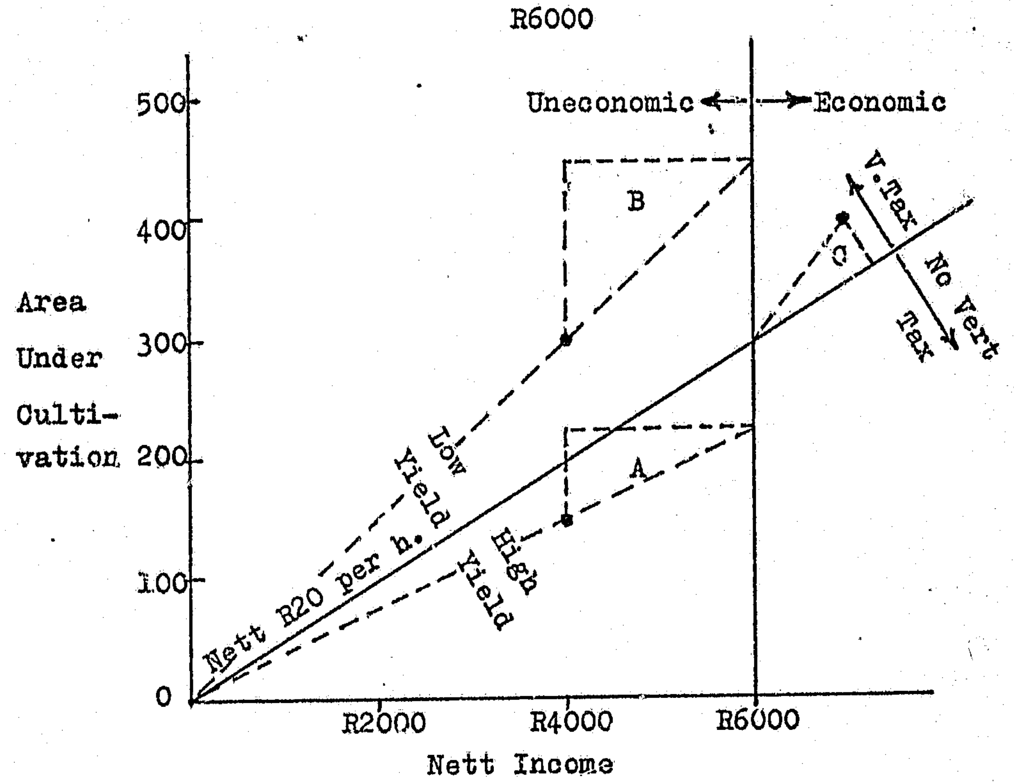
From the Government's point of view, a yearly budget with which to implement a consolidation and re-apportionment scheme would cover a greater land area if that land was sold, but it would retain greater control if that land was leased. If this exercise was carried out with the leases calculated to cover the cost of the units over a 25 year period, with the current land bank rate of interest being charged, it would take this time to recover costs and even longer to implement the scheme throughout the country as the process would be gradual. To sell the land to the farmers would speed up the process if they were in a position to purchase outright, if not mortgages would have to be given. Mortgages have the disadvantage that the same capital outlay is required as for leasing except that the Government would no longer own the land.

Method 2. Taxation of land in such a way that the farmer on an uneconomic unit is encouraged to leave farming. The taxation would apply to all agricultural land, that is land other than townships, peri-urban areas, State land, Bantu areas, rural coloured areas, and other land which might be exempted.

The object of the taxation would be to penalise the owners of the uneconomic units and land which is not being used (to prevent land speculation of agricultural land) in such a way that the uneconomic unit would eventually be eliminated, and unused land would be brought back into production where possible. The system could not operate simply on an area of land basis. A suggested method is that tax exemption would be granted when a certain yield per hectare is achieved and the minimum nett return obtained from a farm such that it can be classified as an economic unit. The suggested minimum nett return used in the research area was R6000. The Government presently operates on a figure of R4000 taxable income. The diagram on page 56 gives the estimated nett return for a particular crop, Diagram No.2

Method 2 - Taxation of Land





Farmer A Nett Return R4000 on 150h. Horz Tax=RX

Farmer B Nett Return R4000 on 300h. Vertical and Horz Tax=R2X

Farmer C Nett Return R7000 on 400h. Vertical Tax=RY for a particular locality as R20 per hectare. Farmer A on 150 hectares has a total nett return of R4000 and pays tax as shown in the shaded area. Farmer B on 300 hectares has a total nett return of R4000 and pays tax as shown. B's tax is greater than A's as the yield per hectare is half that of A's, and both farmers have insufficient area under cultivation to obtain the minimum nett income. If the tax system was extended, persons who exceed the minimum return but have a low yield per hectare may also be taxed. Farmer C on 400 hectares has a nett total income of R7000, and would pay a vertical tax as shown. Previously horizontal expansion referred to more productive land for farming, while horizontal tax is a tax applied where there is insufficient land for this purpose. Vertical expansion implied an increased return without an increase of farm land, and vertical tax is a tax applied where land is not achieving its anticipated return.

An efficient farmer may pay no tax when there is apparently insufficient productive land, because the vertical expansion achieved by him makes the unit economic.

The advantage of this sort of system is twofold. First, as the yield is related to area, the farmer would be encouraged to obtain a vertical expansion instead of a horizontal one. Secondly as this method encourages the farmer to grow more without necessarily increasing the cultivated area, farming practices such as crop rotation, soil regeneration, soil conservation and stock reduction may be implemented.

The difficulty inherent in this system is that like any taxing method, it would be difficult and costly to implement.

Method 3. Licensing of land in such a way that a farmer would be permitted to keep so many head of stock, or to grow so many hectares of crops. One of the contributing factors to the uneconomic unit has been the exploitation of the soil through overgrazing or overcultivation. Units of land could be inspected and depending on the following:-

(a) area of the farm,
(b) the type and condition of the soil,
(c) the climatic and agricultural - economic district,

(d) the suitability for a particular crop or crops, and or cetain stock type.

A certificate would be issued stating what quantity is is permitted. If the soil on a particular farm had been misused, then the quantity of crops or stock permitted by the license would be less than for a normal farm. Therefore conservation would be encouraged on the remaining area of the farm not planted with crops, or for stock overgrazing would be reduced. If and when conservation had taken place resulting in an improvement of the veld, and cultivated lands, then the farmer could apply for a reassessment of the quantity of stock, or area of cultivation permitted. In the case where an uneconomic unit is being licensed, the licensing authority may refuse a permit on the grounds that the quantity to be allocated is obviously insufficient to produce the required nett income. The options then left to the farmer would be:-

(a) To vacate the farm
(b) To improve the farm and then to apply for a re-assessment
(c) To consolidate with an adjoining property to form an economic unit

In an attempt to cover the cost of the licensing authority, the licenses could be sold to the farmers in the first instance, and subsequently when they require their licence regraded a further fee would be levied.

6.2.1 The Significance of These Methods

If one of these three methods was adopted, it would be required to start the system experimentally in the first instance. If the method proved successful it would be implemented over the country systematically. It would entail the creation of a new Government department to administer this scheme.

Method 1. This requires the setting up of a Government Re-apportionment office with the duty of consolidating land into economic units. Such a scheme would have to be made compulsory to succeed. If land was to be compulsor ily purchased at its economic value it is anticipated that it would be uneconomic units that would be most frequently purchased. When the re-apportioned units are sold, it is expected that a profit would be made as happens in similar schemes in Europe.

Due to the necessary compulsion, and the immediate reduction in the number of farmers where this scheme is implemented, it is likely to be the least popular of the three methods.

Method 2. A land taxation office with specialists in agricultural economics would be required to implement this method. Here the farmer would be trying to keep the area cultivated in check, but to increase the agricultural produce return. The taxation would tend to drive the farmer on the uneconomic unit off the land. Where these farmers leave the land, the Government itself may either consider purchasing this land, or assist other farmers by providing loans for the purchase of these farms. This method is probably the least severe of the three.

Method 3. Requires a licensing office with specialists in agricultural economics and soil conservation.

This method falls between the other two, as it does not inflict compulsory purchase, nor does it tax the land. By refusing a licence to an uneconomic unit a certain amount of force is applied, but the farmer is not driven from the farm as he has the option to improve the unit.

Of the three methods, method 3 could be considered the least expensive and the most practical, with method 1 the simplest, though most expensive.

6.3 Suggested Method of Re-apportionment on an Experimental Basis

6.3.1 First Stage of Re-apportionment

The first step required in a re-apportionment scheme is to declare, by notice in the Government Gazette, that the exercise is to take place in the area. To be assured that the notice has been seen, the owners of the farms affected should be sent a copy of the notice under registered cover to ensure receipt.

After the notice has been acknowledged, the next step should be to cover the area with blanket photographs. A scale of 1:25000 would be suitable, as the object of the photography is to record the state of the farms with regard to areas under cultivation, condition of the soil, plant coverage, and improvements.

The intention at this stage is to produce provisional estimates of the need for consolidation, the proportion of uneconomic units, and the need for soil conservation and stock reduction.

The farmer will be allowed a time period in which to improve his farm and consolidate where possible. In the research area it can be seen by comparing Cadastral Sheets Nos.1 and 2 how much consolidation can in practice be achieved without any change of ownership. Cadastral Sheet No.3 shows how much of the farm Zoutpansdrift is owned by persons owning non-adjoining units. Where possible some exchange of these could take place to encourage consolidation.

The task of the Re-apportionment Authority at the initial stage should be an advisory one, for example giving the farmer guidance. Only a provisional statement with regard to the viability of each unit should be given if asked for in the first stage. Requests for other information and assistance regarding farm improvements should be given prompt attention. It is hoped that the Re-apportionment Authority would have on its staff Agricultural specialists who would augment the Agricultural Extension Officers services in the area concerned. One of the problems of the farmer in South Africa is that there is a maximum of one Agricultural Extension Officer for every five hundred farmers, as a comparison the figure in Rhodesia is one for every forty farmers. This comparison emphasises the need for assisting the farmer in the transition period.

During the transition period, which could be of the order of 3 years, the farmer should be restricted in the sale of his property if it is provisionally designated uneconomic. The farmer if he wished to sell should then have the option of selling to the Government at an economic price, or to the adjoining farmers at a mutually agreed price. A careful check would be carried out in the Deeds Office regarding transactions in the area, and before any of these were allowed to be implemented the Re-apportionment Authority would be informed. It is also possible that Caveats be attached to the Deeds of all the uneconomic units by the Deeds Office, on behalf of the Re-apportionment Authority.

In the initial stage the Authority's team in the area would consist of the minimum number as the duties at this time would be exploratory. When the initial period of time has elapsed, another team would be sent to the area to implement the Re-apportionment scheme.

It is suggested that the initial team could consist of the following personnel:-

(a) Cadastral Surveyor,
(b) Agricultural Scientist,
(c) Technical and Administrative Staff.

In most of the European schemes the Cadastral Surveyor is in charge of the Re-apportionment Authority.

The number of Technical and Administrative Staff required will depend on the size of the area being re-apportioned.

The team required for the second stage should include those persons in the initial stage, plus the following:-

(d) Soil Scientist,
(e) Valuation Surveyor,
(f) Economist,
(g) Conveyancer.

In an advisory and representative capacity should be persons from the following bodies:-

(h) Agricultural Technical Services,
(i) Agricultural Economics and Marketing,
(j) Landowners Committee.

The latter three representatives would serve on a co-ordinating committee only, and would take no other active part in the exercise. The farmers in the area should be encouraged to form a Landowner's Committee. The object of this committee would be to liase between the farmers and the re-apportionment team.

During the first stage the Cadastral Surveyor would be involved with changes in the boundaries of the farms in the area. The most likely changes will be the consolidation of adjoining farms owned by the same person. He may also arrange for the creation of servitudes between non-adjoining properties. Where farmers agree to the exchange of land on a voluntary basis, the survey diagrams can be prepared by the Cadastral Surveyor.

The Agricultural Scientist would be responsible for carrying out a suitability study of the area, with regard to crops and stock. Detailed weather records would be kept, including rainfall, humidity, temperature, evaporation, wind velocity and direction. From the data obtained during the initial stage the definition of an economic unit should be obtained, bearing in mind the variations in soils etc in the area under review.

6.3.2 Second Stage of Re-apportionment

The object of the second stage would be the final assessment of each farm unit prior to the implementation of a re-apportionment scheme.

Aerial photographs would be obtained for the area, ideally at the same time of the year as the previous photographs. The object of the second coverage is to obtain a comparison which should show what improvements have been achieved. It will also show what land is being exploited, though it is hoped that the implementation of the Soil Conservation Act [19] in the area will prevent this happening.

From the second set of aerial photographs, orthophoto maps should be produced (see comments on page 69), and these will be used as base maps for the Land Use sheets.

Field work will be started, and this should include a soil survey, a vegetation survey, a topographical survey and a crop suitability survey. Whilst these surveys will have been carried out in part in the initial investigation this would have only been for provisional data.

To be able to determine the classification of a farming unit, certain information must be obtained from the farmer. This includes the farmer's income, the number of employees, and the number of farm implements. These facts would be of use, particularly when considering the unit that is just below the economic classification. If in this case a horizontal or vertical expansion could take place, without additional salary for labour, or additional capital for implements (implying that labour and implements are not working at their full production), the farmer may be allowed time in which he may achieve the required income . Copies of the farmers income tax returns could be obtained from the Department of Inland Revenue. The nett income figure given to the Re-apportionment Authority may tend to be on the high side, whilst that to Inland Revenue on the low side, the mean may give a more realistic figure.

The details obtained from the various surveys, and farmers incomes, will enable each farm to be assessed. The expected nett return anticipated can be calculated, and classification of the unit, whether economic or uneconomic can be given. Those units which are clearly economic can, at this stage, be ignored. It would be preferable if these economic units were left untouched, with their boundaries intact. However, in the re-apportionment plan, certain adjustments may have to be made. Those units which are clearly uneconomic can now be considered for consolidation and re-apportionment. Those units which are just below the economic level, that is 10 per cent of the nett income (this would be between R5400 and R6000 in the research area), should be reconsidered. It is possible, by comparing the two sets of photographs, to ascertain what improvements the farmer has carried out in the time period allowed. Where no effort has been made, or where no horizontal or vertical expansion is possible, the unit must remain classified uneconomic. However, where improvements have been carried out, and the economic figure can be reached if the expansion can, or will , be carried out, then the unit may be provisionally classified economic.

The farmers whose farms fall into this category should be given a time period in which the economic classification must be reached.

Having completed the assessment of the farms, the results must be published, and made public. This will enable the farmers to query the results, and in asking for a second opinion, they may supply the authority with additional information, for example, additional sources of income. The second opinion may also uncover mistakes made in the assessment, but it is hoped that these errors would be few in number.

6.3.3 Third Stage of Re-apportionment

The third and final stage would be the consolidation of the land and re-apportionment of the area. The problems that arise are first the method of consolidation that is to be adopted. As stated earlier in this chapter, three methods, as suggested by the Author, have been given. These methods are by no means the only possibilities, but appear to be practical in the South African context. Thus, the best method would have first of all to be determined, before this stage could be implemented. Next, the inclusion or exclusion of the economic unit from the re-apportionment scheme, would have to be decided. Thirdly, the method of recompensing those farmers who are to lose their farms, must be found. Fourthly, a method has to be found of financing those farmers who are to be sold additional land (if this is the method adopted), in the re-apportioned area. Finally, the method of valuation of land must be agreed upon. The current market price and the economic price based upon the agricultural return, are the two most likely methods of valuation.

The method of re-apportionment does not present any variables until the third and final stage is reached. As commented upon earlier in this chapter, there appears to be adequate Government legislation to implement a re-apportionment scheme. The main requirement of the Government would be to appoint the Re-apportionment Authority, and to amend the legislation where necessary.

7. A SPECIFIC SOLUTION

7.1 Re-apportionment in the Research Area

As stated in Chapter 6 re-apportionment entails the analysis of the area in which such a scheme is to be implemented. In Chapter 3 the reasearch area was discussed and the need for re-apportionment was apparent due to the numerous uneconomic units.

7.1.1 Land Use Sheets

To be able to implement a re-apportionment scheme in the study area, three land use sheets were constructed. These sheets were produced with the aid of the mosaic, see page 33, field work, field checking, and photographic interpretation with stereoscopic photographic models. The land use sheets constructed were, Sheet No1 Vegetation; Sheet No2 Topographical Features; Sheet No3 Soils.

The vegetation map covers the following classifications, Cultivation, being that part of the research area which was in use at the time of the photography, namely December 1968 and January 1969, and Orchard, which was in all areas citrus orchards. These two areas of cultivation were scaled from the land use map, and listed as usable areas on the data sheets. The other eight classifications, scrub, open scrub, trees, river, tree scrub, river tree, and homestead, were not used in any way to determine the economic unit, but were considered when the proposed re-apportionment schemes were drawn up. The legend classification homestead, includes the farm houses, outbuildings, night storage dams, reservoirs, canals and roads.

The topographical features map covers the following classifications; buildings, storage dams, reservoirs, roads, rivers and canals. The object of this map is to record the salient features which will most likely be retained in the re-apportionment schemes. In this connection, the buildings, roads, rivers and canals that are shown on the map are those that are currently in use and are likely to remain in use. Tracks, footpaths and unimportant roads have been omitted.

The soils map covers the following classifications;

hill crest, which consists largely of exposed granite, convex side slopes, which are mainly silty sand derived from the decomposed granite, low angle gully, being a sandy gully wash and finally the alluvial flood plain being alluvial clays and sands. The 29 samples were collected from the places marked on the map. The data sheet for Land Use Sheet No.3 on page 98 gives the following information; the sample number, the Munsell Chart Number and the Soil Colour. The samples were classified with regard to the Munsell Chart and from where the soil colour was also obtained. This information was used as a guide, together with the aerial photographs to draw in the soil boundaries on the map.

7.1.2 Cadastral Sheets Nos.4-6 for Re-apportionment

The construction of the sheets was the graphical solution to the problem of fragmentation in the research area. As previously stated, and as listed on the data sheets, fragmentation was shown to be present when two crops and an income of R6000 per year were the factors which were used to determine an economic unit. The three different re-apportionment schemes all use the figure of R6000 for income, but two of the schemes use only one crop per year while the third scheme uses two crops per year. For the three schemes the existing boundaries were retained where possible. With these three schemes as well as a practical scheme, the retention of a cadastral boundary is advantageous, because of the reduction of work in setting out the scheme in the field and the fewer fences to move.

Cadastral Sheet No.4 is a re-apportionment scheme based on the return from winter wheat. The object of the scheme is to obtain a unit having 44 hectares of cultivation giving a nett return of R6049, as winter wheat gives a nett return of R137-48 per hectare. The assumption is that for the one crop a 100 per cent return is obtained, that is all the area shown cultivated by irrigation is used each year. The headings used on the data sheet on page 93 are similar to those used for the previous data sheets except "Use Own" which is the area in hectares of cultivated land owned by the person listed under the heading "Owner". The owner is the person who owns the most cultivated land in that area of the re-apportionment scheme. "Percentage Ara", is the percentage of the new unit that is arable. "Percentage A.O.", is the percentage of the total cultivated area that the listed farmer owns.

The method of re-apportionment was to retain those farms which were already economic, and then to allocate units to the persons who owned farms having the most cultivation. These farms could, where possible, be used as a nucleus for the new units. With approximately 1540 hectares of arable land in the research area and 44 hectares defining the economic unit, there were potentially 35 economic units. It was apparent from the land use sheets that a number of farms on the right bank of the Crocodile River were not suitable for irrigation, and it is suggested that they be used as a nature reserve. The farms according to the numbering on the cadastral sheet No.2 are 28,59,70,71,72,94,95,96 and 102. The outcome of the re-apportionment was to obtain 31 new units instead of the anticipated 35, and to have four units, Nos.13,22,30 and 31, not quite reaching the definition of an economic unit. The average percentage of cultivated land owned by the listed farmers produced a figure of 50 per cent. If the valuation of land was largely dependent on the cultivated area then, on average, the 31 owners would have to find approximately 50 percent of the value of their properties. The average figure for cultivated areas of farms is 58 per cent.

The re-apportionment scheme on cadastral sheet No.5, is based on one crop, tobacco, which is grown in the summer months. With the nett return for tobacco ofR219-72 per hectare an area of 28 hectares was required for an economic unit. With the 1540 hectares of arable land available there were potentially 55 economic units. The headings used on the data sheets on page 94 and 95 were the same as for the previous example. It will be noted that the owner of unit No.36 has 103 under the column heading "Percentage A.O.", the explanation for this came from the data sheet on page 92 where G.L.F.W.du Plessis owns 33 hectares of cultivated land but is only given 32 hectares for unit 36, so that he must be credited with this shortfall. Other owners who have larger cultivated areas have been allocated more than one unit in the re-apportionment scheme. The method of implementing the scheme was similar to the previous one, with the proposed nature reserve being retained. The outcome of the re-apportionment was to obtain 48 new units instead of the anticipated 55, and to have six units Nos.1,16,31,35,37 and 38 not quite reaching the definition of an economic unit. The average figure for cultivation on farms gave 60 per cent and cultivated land owned by the listed farms gave an average of 62 per cent. This was an improvement of 12 per cent over the previous scheme. The improvement means that more farmers could afford the scheme and also over 50 per cent more units were created.

The re-apportionment scheme on cadastral sheet No.6 is based on two crops, tobacco and winter wheat. The method for determining the nett return, and area of the economic unit were discussed on page 37, this example being used on the data sheets on page 87 to 91 for Cadastral Sheet No.2. With the total area of cultivated land being 1540 hectares, and 22 hectares defining the economic unit, there were potentially 70 economic units. The data sheets on page 96 and 97 give a total of 56 units, six of which, Nos.27,28,35,47,51 and 55 do not quite reach the definition of the economic unit. The average percentage for cultivated land shows an increase to 69 per cent, and the number of farms compared with the first scheme shows an increase in excess of 80 per cent.

With an expected return of R273 per hectare for the two crop scheme, and an interest rate of 10 per cent, the economic value of land would be R2730 per hectare. With farmers owning on average 69 per cent of the cultivated areas in the new units, where 22 hectares are required for an economic unit, the additional capital outlay for these farmers would be approximately R19000. The repayment of a loan for this amount would reduce the farmers income considerably, almost reducing it to R4000, which is the Government's accepted figure for an economic unit.

7.1.3 Alternative Mapping Method

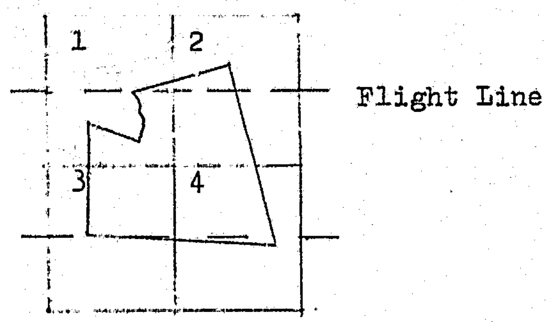
For the production of the land use maps, a mosaic was constructed. The diagram on page 31 shows the position of the principal points of 14 photographs used for the mosaic. To implement this scheme where adequate fundswere available, an alternative method, namely the production of orthophoto plans is suggested. The diagram on page 70 shows that to cover Zoutpansdrift with these plans the cost of photography is R725, whilst the production of 4 orthophoto contoured plans is R1415, giving a total of R2140. The orthophoto plan will have a photographic record of the ground features, will be to scale, and will be contoured. The cost of these plans would be approximately 50 cents per hectare. The figures given are from a commercial quotation in 1972, and the costs for both areas are given. If the scheme was extended to cover an area as shown on the diagram on page 71, the cost when covering an area of 10000 square kilometres is R40 per square kilometre or 40 cents per hectare.

7.2 Wastage in the Research Area

The excessive outlay on farm equipment was a feature that was noted on many of the units in the research area. The photograph on page 72 shows a typical example of this excessive outlay of funds.

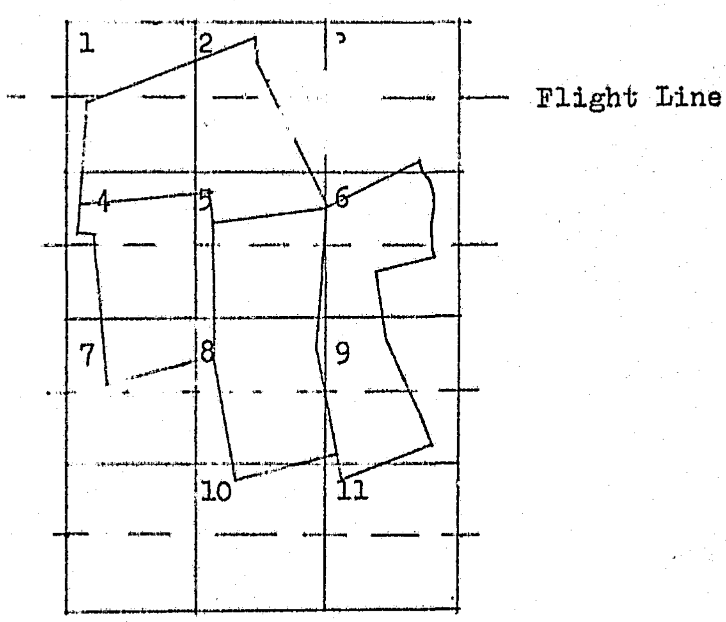
The wastage of land for the creation of Outspans was noticeablein the research area, because the one Outspan had been used as a borrow pit for the construction of roads, and could not be used for the purpose for which it was meant. The photograph on page 72 shows one of the Outspans in the second area. On either side of the Outspan are orange trees, while the Outspan itself is neglected.

Diagram No.3
PRODUCTION OF ORTHOPHOTO PLANS AT 1:10000 SCALE
REQUIREMENTS FOR THE TWO RESEARCH AREAS



Zoutpansdrift Area

2 Flight Lines	R 725
4 Orthophoto Plans	R1065
4 Orthophoto Plans Contoured	R1415
Total for Contoured Sheets	R2140



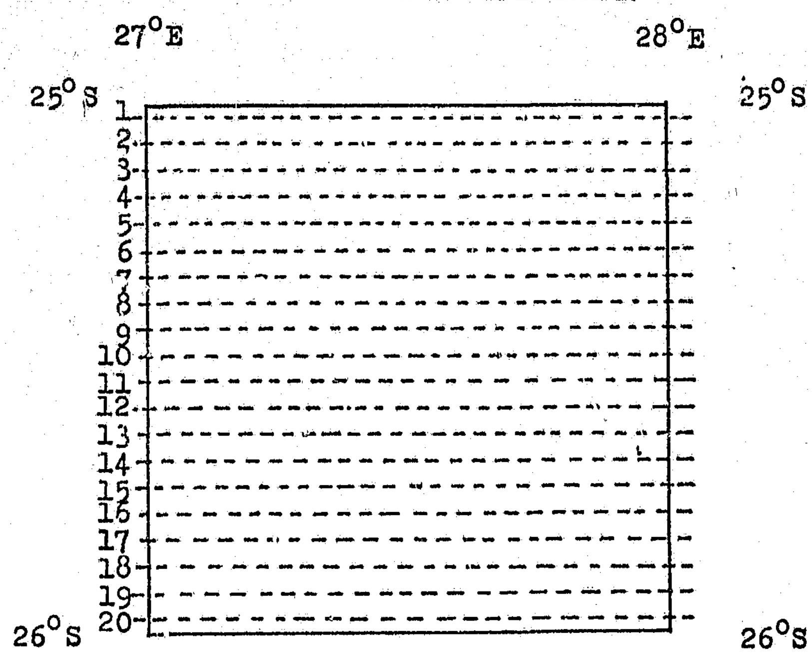
Rustenburg Area

4 Flight Lines	R 900
11 Orthophoto Plans	R2500
11 Orthophoto Plans Contoured	R3570
Total for Contoured Sheets	R4470

Diagram No.4

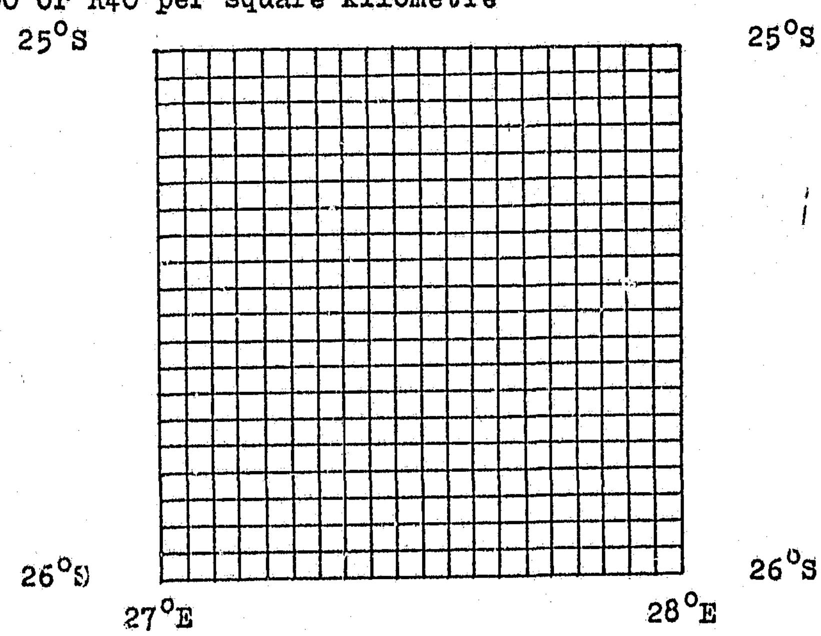
PRODUCTION OF ORTHOPHOTO PLANS AT 1:10000 SCALE

20 Flight Lines for 1:30000 Photography

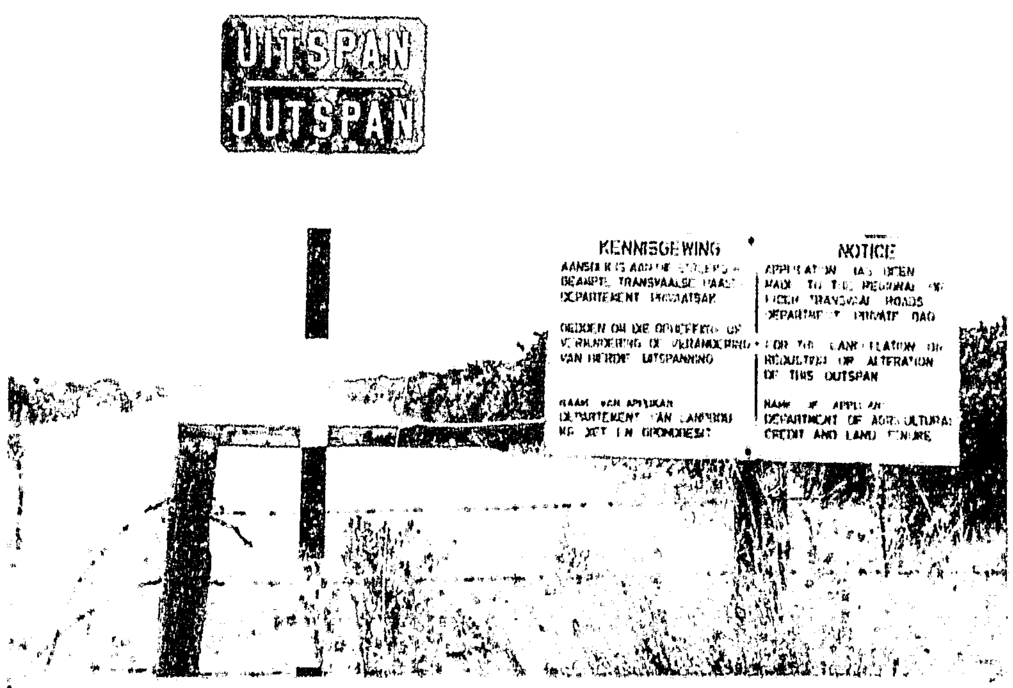


Outline of 400 1:10000 Orthophoto Plans

Cost of each sheet approximately R1000. Total cost ..
R400000 or R40 per square kilometre



Example of Excessive Outlay on Equipment



Outspan - Wastage of Land

8. CONCLUSIONS

As a result of the investigation, it is clear that the problem of fragmentation in South Africa is more complex than in certain other countries where the problem exists, due particularly to various forms of ownership existing alongside one another.

With regard to the implementation of a consolidation and re-apportionment scheme a number of Statutes exist which could assist, but a specific Act would be more appropriate which combines the relevant sections of the other Acts.

Of the three suggested methods of consolidation, it is considered that the third method, namely the licensing of land is the most practical. Before any consolidation scheme could be implemented, extensive studies would be required to ascertain the cost, and long term effect of the scheme adopted. Not only does the economic aspect present a problem, but the sociological difficulties may be of equal magnitude. The resettlement of approximately one hundred farmers as a result of the re-apportionment scheme carried out on Cadastral Plan No.6, presents as large a problem as finding the capital to purchase the 31 per cent of arable ground not owned by the 56 farmers listed. Whilst there is a shortage of skilled labour in South Africa, the flooding of the labour market with many largely unemployable farmers, could lead to repetitions of past problems which previous Governments have generally managed to overcome.

As stated in Chapter 6, re-apportionment would have to be initially on an experimental basis. It is suggested that an area similar in size to Zoutpansdrift should be selected in the first instance. Prior to the implementation, the method of consolidation must be finally decided upon. It is envisaged that the Government should set up a Department whose sole duty would be the implementation of re-apportionment schemes. To give this duty to any existing Department, would have the effect that not all the specialist personnel would be currently employed in that Department. Another reason is that an existing Department may favour its own discipline to the detriment of the other disciplines required for a re-apportionment scheme.

As the author has found, a re-apportionment scheme is very much an interdisciplinary exercise, with each specialist very dependent on the activities, and knowledge of his colleagues in other disciplines.

As a result of collecting data for the research project certain limitations were encountered. These limitations would increase the work of a re-apportionment scheme, and as they mainly apply to Government Departments, some action may be taken to correct these shortcomings. In the Surveyor-General's Department, the need for up to date compilation sheets at a sufficiently large scale, such that all farm units are shown, is a requirement. Work has been started by producing compilations, and it is hoped that in time the whole country will be covered by these data sheets. The compilations should ideally consist of, an original, an inspection copy, and a tracing to be used for prints. To be of maximum use the compilations must be kept up to date. The numbering system for farms could be improved, for example, remaining extents should be issued with a new number, which may require either the issuing of diagrams, and in certain circumstances a resurvey.

The lack of suitable photographs was a serious limitation in selecting the research areas. The requirements for photographs are, that it is up to date, and at a suitable scale, say 1:25000. For a re-apportionment scheme it has been suggested previously that aerial photographs be taken at the first stage of implementation. If suitable existing photographs are available, this would reduce the cost of the scheme. It is suggested that the Government implement a systematic coverage of the country with aerial photography. Such photographs could be repeated every four years, so that a quarter of the country is flown each year. Whilst the cost of implementation of such a scheme is high, the sole object would be to produce blanket photographs, and with Government Departments, Private Companies, and individuals using the photographs, the cost would be offset.

In the research areas, notice was taken of the existence of Outspans. On the farm Zoutpansdrift, unit No.26 (see Cadastral Sheet No.2) is an Outspan, and during the field investigation, it was noted that it was completely covered in thick scrub, except in the centre, where extensive excavations had taken place for road construction.

The object in establishing Outspans was as follows:-

(a) Outspan purposes, which includes resting, grazing, and watering of animals; and

(b) parking of vehicles, camping, and picnicking of travellers.

In practice the Outspan in question could not be considered suitable for any of these activities. With the passage of time since the creation of Outspans, it is doubtfulif they either can, or do, fulfil their correct function. It is suggested that Outspans should be abolished, and where possible the ground consolidated with an adjoining unit.

One of the problems encountered in carrying out searches in the Deeds Registry, was that the numbering system used for the subdivision of farms was often different from that used in the Surveyor Generals office. The fact that the numbering systems differ, lends weight to the argument put forward earlier, that the numbering system should be improved.

Another problem encountered was to find the present owner, or owners of a farm. According to the Deeds Registry Act, there should be one page per unit in the Land Register. This was not found to exist in practice, as often entries, with regard to transfer, were placed in date order, with no regard to the numbering of the units concerned. To find the owner of a unit required a lengthy search, particularly as the names of the previous owners have been retained, and though these names are cancelled, the cancellation is not always clear. Particular difficulty was found in tracing the multiple ownership of units, especially where up to 18 owners were concerned.

The next difficulty, would be to establish the percentage ownership of multiple units. To assist the searching required for a re-apportionment scheme, it is suggested that a card index system, listing the farm units, with the present owner, or owners' name only be introduced. When the unit changes ownership, the card is simply replaced with one containing the new name or names.

The research areas were investigated within the limitations of the author's discipline. Implementing a scheme in practice would, as mentioned previously, require additional specialists. The Cadastral Plans, and Land Use Maps as included, are expected to remain basically the same, except the Soils, and possibly the Vegetation Maps would be more detailed. Likewise, the data sheets would take into account the soils, and the percentage of these different types of soil in the cultivated area of each unit. Therefore the determination of the economic unit would take into account the expected return, not on a simple area basis, but on an area related to soil type.

The need for implementing re-apportionment schemes in South Africa has been displayed, as a result of the research carried out in the field, and now that the Government has completed the Report into Agriculture, it is hoped that it will turn its attention to this problem.

APPENDIX 'A' ZOUTPANSDRIFT

See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
1		384/94		1206,4170	113,3644	Govt
2		3319/66			55,0947	FB.Wenhold
3	2	557/99	7210/10	804,2790	13,9456	CJH.Kruger
4	3	578/99	7219/10	20,7948	13,6417	GAJ.Mostert
5	3	579/99	7218/10	20,7948	3,6174	WJ.Schlebusch
6	3	580/99	7219/10	8,7793		Govt
7	3	581/99	7221/10	5,0948	3,0963	NJ.Swart
8	3	582/99	7220/10	28,1024	4,4964	13 Owners
9	2	583/99	7209/10	47,7751	7,9414	JC.du Plessis
10	2	584/99	7210/10	29,6940	8,6007	13 Owners
11	2	585/99	7211/10	9,0934	5,1078	GLFW.du Plessis
12	2	586/99	7213/10	9,3289	4,9421	DAM.v Staden
13		Cancelled				
14		Cancelled				
15	2	589/99	7212/10	7,2204	2,1413	L.du Plessis
16	2	590/99	7210/10	21,1921	3,1064	17 Owners
17	2	592/99	310/13	0,3326		12 Owners
18	2	593/99	7209/10	14,1211	0,1399	9 Owners
19	18	595/99	7842/11	3,0621		SJ.Pretorius
20	2	596/99	5762/11	61,3766	17,8829	15 Owners
21	20	597/99	6968/11	28,9962	0,0024	8 Owners
22	20	591/99	6967/11	14,4982		18 Owners
23	21	594/99	7842/11	4,7479		SJ.Pretorius
24	2	1245/10	3715/32	0,8565		Govt
25	15	5062/11	4761/12	5,0792	2,5396	2 Owners
26		Cancelled				
27	3	1543/15	3631/31	5,6031	2,0371	JCJ.Herbert
28	3	1544/15	3635/31	1,8415		Govt
29	3	1545/15	3635/31	1,2848		AP.Barber
30	3	1548/15	3636/31	9,6101		MJ.Swart
31	22	1549/15	NR	5,4433		
32	22	1550/15	NR	2,1414		
33	22	1551/15	NR	4,4868		
34	16	1552/15	NR	18,0857		
35	10	1553/15	NR	12,2926		

ZOUTPANSDRIFT

See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
36	10	1554/15	NR	0,8636		
37	10	1555/15	NR	0,8636		
38	10	1556/15	NR	3,2948		
39	10	1557/15	NR	2,5696		
40	10	1558/15	NR	1,2091		
41	8	1559/15	NR	9,3662	5,8873	
42	8	1560/15	NR	9,1934	3,0749	
43	8	1561/15	NR	5,0464		
44		Cancelled				
45		Cancelled				
46		Cancelled				
47	1	1478/23	8554/26	56,6829	42,5129	MC.Erasmus
48	1	Cancelled				
49	1	1480/23	8556/26	79,3564		Govt
50	1	1481/23	8562/26	420,9058	39,9197	JL.Otto
51		Cancelled				
52		Cancelled				
53		Cancelled				
54	2	1455/25	3684/32	47,5624	26,5778	2Owners
55	2	1456/25	3688/32	61,4266	14,1570	2 Owners
56		Cancelled				
57		Cancelled				
58	2	1460/25	3693/32	119,7912	57,5209	PG.Anker
59	2	1461/25	3694/32	34,0652	19,0978	A.Venter
60	2	1462/25	3696/32	54,1833	26,7519	FJ.Klopper
61	2	1463/25	3699/32	64,6200	13,8437	SB.Strydom
62	2	1464/25	3700/32	133,3770	23,6409	PJV.Jooste
63	2	1465/25	3702/32	11,3560		TH.Wenhold
64	2	1466/25	3703/32	28,8104	12,8477	Govt
65	2	1467/25	3704/32	11,6801		JA.Ras
66	2	1468/25	3687/32	34,0665	9,8516	JA.de Wet
67	2	1469/25	3715/32	8,5652	7,4734	G.G.Kerk
68	2	1470/25	3693/32	4,7494	3,8929	JMJ.Ras
69	2	1471/25	3684/32	5,3875		GJJ.v Vuuren
70	2	1472/25	3715/32	6,6751	3,3376	SJ.Pretorius

ZOUTPANSDRIFT

See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area ha	Rem Area ha	Owner
71	2	1473/25	3699/32	3,5146		SJ.Pretorius
72	2	1474/25	3708/32	2,5924		SJ.Pretorius
73	2	1475/25	3700/32	2,8907		2 Owners
74	2	1476/25	3691/32	2,8394	1,1363	JMJ.Ras
75	2	1477/25	3693/32	3,2091	1,9072	JMJ.Ras
76	2	1478/25	3688/32	1,7702		HL.Kruger
77	2	1479/25	3715/32	0,8565		W.Meule
78	2	1480/25	3688/32	0,1784		5 Owners
79	2	1481/25	3703/32	0,1056		N.Behrens
80	2	1482/25	3688/32	0,1385		3 Owners
81	2	1483/25	3703/32	0,1670		TH.Wenhold
82	2	1484/25	3704/32	0,0671		JMJ.Ras
83	2	1485/25	3688/32	1,1163		5 Owners
84	9	2364/25	3652/31	5,2262	3,1459	AP.Barber
85	9	2365/25	3653/31	5,2262		HT.Esterhuizen
86	9	2366/25	3654/31	5,2262		JC.du Plessis
87	9	2367/25	3655/31	5,2262		JC.du Plessis
88	9	2368/25	3656/31	5,9371		JO.du Plessis
89	9	2369/25	3657/31	5,7972		GJ.du Plessis
90	9	2370/25	3658/31	5,4560	2,7265	JO.du Plessis
91	9	2371/25	3658/31	1,7387		GJ.du Plessis
92		Cancelled				
93	25	4469/25	3660/31	2,5396		L.du Plessis
94	41	4470/25	NR	3,4789		
95	42	4471/25	NR	2,5468		
96	42	4473/25	NR	3,5717		
97	57	4475/25	10079/34	44,2848	21,9114	Govt
98		Cancelled				
99	27	4477/25	78/63	1,7830		JCJ.Herbert
100	27	4478/25	78/63	1,7830		JCJ.Herbert
101	58	4479/25	4855/33	62,2703	23,3896	HL.Standen
102	70	4483/25	1108/35	3,3376		TH.Wenhold
103	74	4484/25	10079/34	1,7030		DAM.v Staden
104	75	4485/25	4855/33	1,3019		GLFW.du Plessis
105	3	4486/25	3646/31	50,7487	33,8325	CJH.Kruger

ZOUTPANSDRIFT

See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
106	50	4487/25	1349/27	202,4095	50,5811	TH.Wenhold
107	7	4488/25	10080/34	1,9985		NJ.Swart
108	11	4489/25	4854/33	2,1584		JMJ.Ras
109	5	4490/25	28869/45	4,0942		CJH.Kruger
110	11	4491/25	4854/33	1,8272		JMJ.Ras
111	5	4492/25	28869/45	2,1813		OJH.Kruger
112	5	4493/25	28869/45	2,2640	1,1319	2 Owners
113	5	4494/25	28870/45	2,1270		QA.dos Santos
114	5	4495/25	28871/45	2,1912		AD.Theron
115	5	4496/25	28872/45	4,3197		JC.Ellis
116	3	4497/25	3646/31	15,2218		CJH.Kruger
117	3	4498/25	3646/31	15,1775	7,5889	QA.dos Santos
118	3	4499/25	3646/31	15,2317		QA.dos Santos
119	3	4500/25	3646/31	15,1946	3,8674	AD.Theron
120	3	4501/25	3646/31	50,8258	9,7131	WJ.Schlebusch
121	3	4502/25	3637/31	16,7721		GJ.v Staden
122	3	4502/25	3637/31	1,0349		NJ.Swart
123	3	4503/25	3638/31	25,1588		GJ.v Staden
124	3	4503/25	3638/31	1,4747		NJ.Swart
125	12	4504/25	10080/34	4,3868	1,8101	JMJ.Ras
126	13	4505/25	4854/33	4,1156		L.du Plessis
127	14	4506/25	4854/33	1,1203		L.du Plessis
128	14	4506/25	4854/33	0,4000		L.du Plessis
129		Cancelled				
130	14	4508/25	4854/33	0,5981		DAM.v Staden
131		Cancelled				
132	1	60/26	10511/43	56,6814		Govt
133	44	4069/26	12694/26	507,7667	21,0403	2 Owners
134	133	4070/26	12695/26	254,7398	115,8839	5 Owners
135	1	4284/26	10511/43	28,3364		Govt
136	134	4819/26	13843/26	17,9869		Govt
137	33	2636/28	NR	2,1413		
138	106	3287/28	5169/31	50,6016		Bergoewer
139	106	3288/28	5170/31	50,6331		PJ.Kloppers
140	106	3289/28	5171/31	50,5945		JA.Ras

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See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
141	4	57/29	26685/45	2,2912		MJ.Swart
142	68	404/29	4857/33	0,8565		G.G.Kerk
143	3	1926/29	3635/31	44,2049	20,1152	Govt
144	3	1927/29	3639/31	40,7088	20,2453	HM.Grobler
145	3	1928/29	3644/31	33,8624		MJ.de Beer
146	3	1929/29	3645/31	47,4083		5 Owners
147		Cancelled				
148		Cancelled				
149	148	4481/25	78/63	9,4189		JCJ.Herbert
150	148	4482/25	78/63	9,4189		JCJ.Herbert
151	3	1932/29	3631/31	0,8223		JJ.Hatting
152	2	2903/29	3689/32	10,1084		JJ.Fourie
153	2	2904/29	3690/32	14,8334		MHO.Oberholzer
154	2	2905/29	3714/32	33,2929	16,4527	GF.Nagel
155	2	2906/29	3689/32	15,1604		JJ.Fourie
156	2	2907/29	3709/32	9,9427	4,8822	RCJ.v Wyk
157	2	2908/29	3709/32	61,3252	30,6930	FJ.Botha
158	2	2909/29	3711/32	43,2142	30,3847	AMH.Möller
159		Cancelled				
160		Cancelled				
161	53	2751/30	39356/48	15,0961		CH.Fourie
162	53	2752/30	39357/48	23,8369		JW.du Plessis
163	59	3006/30	137/34	14,9677		Govt
164	125	470/31	4530/35	1,9935		JMJ.Rac
165	57	471/31	4527/35	3,1551		SPF.Potgieter
166	57	472/31	4527/35	2,1404		DJH.Swanepoel
167		Cancelled				
168	20	1636/31	NR	2,5781		
169	20	1637/31	NR	3,4460		
170	20	1638/31	NR	0,8993		
171	20	1639/31	NR	2,7252		
172	20	1640/31	NR	1,0835		
173		Cancelled				
174	21	1642/31	NR	4,1969		
175	21	1643/31	NR	8,6908		

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See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
176	21	1644/31	NR	3,5646		
177	21	1645/31	NR	0,7651		
178	21	1646/31	NR	1,0478		
179	21	1647/31	NR	1,0079		
180	21	1648/31	NR	0,0157		
181	21	1649/31	NR	0,2983		
182	21	1650/31	NR	0,4076		
183	21	1651/31	NR	3,1848		
184	21	1652/31	NR	1,0664		
185	18	1653/31	NR	2,9364		
186	18	1654/31	NR	0,4582		
187	18	1655/31	NR	1,4261		
188	18	1656/31	NR	0,8794		
189	18	1657/31	NR	0,8636		
190	18	1658/31	NR	0,8194		
191	18	1659/31	NR	1,8715		
192	18	1660/31	NR	1,0264		
193	18	1661/31	NR	0,2584		
194	18	1662/31	NR	0,3797		
195	63	1663/31	NR	0,3925		
196	63	1664/31	NR	0,0186		
197	65	1666/31	NR	0,1456		
198	65	1667/31	NR	0,0828		
199	66	1668/31	20468/59	13,6758		PC.Minnaar
200		Cancelled				
201		Cancelled				
202	66	1671/31	20469/59	0,2156		TH.Wenhold
203	66	1672/31	20469/59	0,0100		TH.Wenhold
204	66	1673/31	20470/59	0,0343		JA.de Wet
205	77	1674/31	NR	0,0671		
206	77	1675/31	NR	0,0128		
207	60	2335/31	15683/34	17,1304		SJ.Kruger
208	60	2336/31	15683/34	10,3011		PARC.v Wyk
209	112	1191/32	NR	1,1321		
210	117	1192/32	28879/45	7,1605		QA.dos Santos

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See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
211	67	1199/32	10580/33	0,4283		Govt
212	156	1333/32	8685/32	4,9235		MHO.Oberholzer
213	156	1334/32	8685/32	0,0475		MHO.Oberholzer
214	50	368/34	4400/36	40,4468		EW.Funcke
215	50	369/34	4401/36	46,1202		JL.Otto
216	50	370/34	4402/36	30,2705		2 Owners
217	61	372/34	14316/34	13,1975		JC.du Plessis
218	2	373/34	4404/36	10,8162		GJ.du Plessis
219	2	374/34	4401/36	7,7169		GLFW.du Plessis
220	2	375/34	4403/36	20,5836		JD.du Plessis
221	2	376/34	4402/36	35,5028	26,9376	JA.du Plessis
222	50	3633/35	4403/36	61,7502		JD.du Plessis
223	4	660/36	10184/37	4,8623		Govt
224		Cancelled				
225	92	662/36	10184/37	6,2982		Govt
226	157	5084/36	7172/37	30,6323		BF.Moller
227	224	3450/37	314/41	36,2436		NL.Meyer
228	62	3552/37	17713/37	86,0964	28,9821	BJ.Stander
229	67	1703/40	1755/41	0,6635		Govt
230	13	1770/41	13494/42	8,5009	3,9300	GLFW.du Plessis
231	230	1771/41	13504/42	0,8689		GLFW.du Plessis
232	230	1772/41	13499/42	3,7021		GLFW.du Plessis
233	221	1773/41	15432/41	8,5652		JA.du Plessis
234	90	1774/41	13505/42	2,7296		GJ.du Plessis
235	131	1775/41	13496/42	19,5024		JLJ.v Rensburg
236	131	1776/41	13497/42	19,7522		3 Owners
237	131	1777/41	13498/42	19,5528		FJ.Kloppers
238	131	1778/41	13498/42	8,0510		JO.du Plessis
239	131	1779/41	13500/42	10,1914		MS.Swanepoel
240	131	1780/41	13504/42	7,6227		GLFW.du Plessis
241		Cancelled				
242	101	1782/41	13500/42	11,1473		JA.Pretorius
243	101	1783/41	13501/42	19,7045		GLFW.du Plessis
244	101	1784/41	13502/42	8,0289		Govt
245	61	3988/41	206/43	11,1347		JC.du Plessis

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See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
246	61	3989/41	3333/42	12,6009		PG.Galitz
247	228	1177/42	19283/42	21,4130		AP.Swanepoel
248	55	1210/42	14081/43	12,9989		AA.Pretorius
249	55	1211/42	14082/43	15,4863		MM.Pretorius
250	133	408/43	14564/43	63,2095		IJ.Meyer
251	133	409/43	14565/43	80,0282		DJ.du Plessis
252	133	410/43	14566/43	88,7488		DJ.du Plessis
253	119	1188/43	28881/45	11,3273		HM.Grobler
254	158	3743/43	9066/44	12,8295		WGJ.v.d Bank
255	92	218/44	26686/45	17,1304		SM.v.d Merwe
256	92	219/44	25875/45	5,5575		GAJ.Mostert
257	92	2930/44	19123/45	10,2782		HA.Brits
258	228	2933/44	7159/45	21,4252		BJ.Stander
259	228	2934/44	28296/46	14,2762		CJH.Kruger
260	97	2937/44	19121/45	22,3734		SPF.Potgieter
261	61	4665/44	1685/47	13,8434		SB.Strydom
262	219	4803/44	NR	4,1306		
263	64	5805/44	10495/45	0,8565		TH.Wenhold
264		Cancelled				
265		Cancelled				
266		Cancelled				
267		Cancelled				
268		Cancelled				
269		Cancelled				
270		Cancelled				
271		Cancelled				
272		Cancelled				
273		Cancelled				
274		Cancelled				
275		Cancelled				
276		Cancelled				
277		Cancelled				
278		Cancelled				
279		Cancelled				
280		Cancelled				

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See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area	Rem Area	Owner
281		Cancelled				
282		Cancelled				
283		Cancelled				
284		Cancelled				
285		Cancelled				
286		Cancelled				
287		Cancelled				
288	55	227/45	20090/45	9,3995		FJL.Pretorius
289	55	228/45	20089/45	9,3850		EA.Snyman
290	57	3401/45	31220/45	54,7151	25,3811	WJ.Strydom
291	92	1428/46	6215/47	10,2783		2 Owners
292		Cancelled				
293	92	1430/46	6215/47	10,3626		2 Owners
294		Cancelled				
295	92	1432/46	6215/47	10,3019		HA.Brits
296	92	1433/46	6215/47	1,2134		HA.Brits
297	92	1434/46	6215/47	10,5609		PJ.Meyer
298	92	1435/46	6215/47	10,6225		PJ.Meyer
299	92	1436/46	6215/47	10,2120		PJ.Meyer
300		Cancelled				
301	92	1438/46	6215/47	11,6461		PJ.Meyer
302	92	1439/46	6215/47	11,2799		PJ.Meyer
303	92	1440/46	6215/47	11,9836		CJ.v Aswegen
304		Cancelled				
305	251	5798/45	NR	40,0163		
306		Cancelled				
307		Cancelled				
308	131	2266/46	5724/49	8,9198		GJ.du Plessis
309	241	2268/46	2725/49	6,5948		JC.du Plessis
310	134	3613/46	26990/48	18,3546		PI.Lowens
311	134	3614/46	26990/48	11,5095		Govt
312	134	3615/46	26990/48	11,1346		MJ.Marthuis
313	134	3616/46	26990/48	11,1346		F.du Plessis
314	134	3617/46	26990/48	15,1130		F.du Plessis
315	134	3618/46	26990/48	53,6227		JHC.du Plessis

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See Cadastral Sheet No.1

Unit	Ptn	Dgm No.	Trf No.	Total Area ha	Rem Area ha	Owner
316	62	310/47	37180/47	23,6401		PJV.Jooste
317	34	304/47	NR	4,8062		
318	34	308/47	NR	4,9371		
319	34	309/47	NR	3,5360		
320		Cancelled				
321	154	89/47	2088/48	16,8402		Govt
322	144	566/47	5208/54	20,4636		HM.Grobler
323		Cancelled				
324	48	3413/47	8452/48	42,5115		MJ.Potgieter
325	54	5699/47	5210/54	20,9847		Govt
326	290	6017/48	6035/50	25,4232		PA.Strydom
327		Cancelled				
328		Cancelled				
329		Cancelled				
330	159	7890/49	6037/50	16,6429		WGJ.v.d Bank
331	105	7748/52	9853/54	16,9162		CLV.Zyl
332	292	4326/54	23679/56	18,4527		2 Owners)
333	84	1829/56	19843/65	2,0803		Govt
334	143	1830/56	225/65	24,0897		AP.Barber
335	64	4126/57	321/61	15,1062		DA.de Beer
336		Cancelled				
337		Cancelled				
338	200	924/59	20471/59	10,2797		TH.Wenhold
339		Cancelled				
340	328	4634/59	15925/61	27,4086		WJ.Schlebusch
341	224	4635/59	15923/61	49,9464		HM.Grobler
342	92	4636/59	15924/61	24,6186		CL.Schlebusch
343		Cancelled				
344		Cancelled				
345	343	4338/64	26053/65	13,1001		AA.Pretorius
346	52	4339/64	26054/65	35,5572	21,1525	E.Marsh
347		Cancelled				
348		Cancelled				
349	147	7493/67	22360/68	19,8912		JCJ.Herbert
350	26	7494/67	22361/68	21,9569		JJ.Hatting

APPENDIX 'B' ZOUTPANSDRIFT

See Cadastral Sheet No.2

Unit	Old Numbers	Area	Owner	Use	Nett
1	1,49,135,132	277,7836	Govt	27	7372
2	2	55,0947	PB.Wenhold	22	6007
3	3,109,111,116	35,4429	CJH.Kruger	10	2730
4	4,256	13,1992	GAJ.Mostert	17	4642
5	5,120,340	40,7391	WJ.Schlebusch	33	9011
6	6,223,225	19,9398	Govt	17	4642
7	7,107,122,124	7,6044	MJ.Swart	6	1638
8	8,41-43,94-96	28,1024	13 Owners	18	4915
9	9,86-90,309	33,6522	JC.du Plessis	17	4642
10	10,35-40	29,6940	13 Owners	19	5188
11	11,104	6,4097	GLFW.du Plessis	1	273
12	12,103,130	7,2432	DAM.v Staden	5	1365
13	15,93,126-128	10,3168	L.du Plessis	8	2184
14	16,34,317-319	21,1921	17 Owners	11	3003
15	17	0,3326	12 Owners	-	-
16	18,18[illegible]-194	11,0590	9 Owners	4	1092
17	19,23,70-72	17,2546	SJ.Pretorius	14	3823
18	20,168-172	17,8829	15 Owners	-	-
19	21,174-184	24,2483	8 Owners	14	3823
20	22,31-33,137	16,6395	18 Owners	5	1365
21	24,211,229	1,9483	Govt	-	-
22	25	2,5396	2 Owners	2	546
23	27,99,100,149,150,349	44,3321	JCJ.Herbert	18	4915
24	28	1,2848	Govt	1	273
25	29,84,334	28,5204	AP.Barber	13	3550
26	30	9,6101	Outspan	-	-
27	47	42,5129	MC.Erasmus	8	2184
28	50	39,9197	JL.Otto	-	-
29	54	26,5778	2 Owners	11	3003
30	55	14,1570	2 Owners	1+½	353
31	58	57,5209	PG.Anker	29	7919
32	59	19,0978	A.Venter	6	1638
33	60	26,7519	FJ.Kloppers	12	3277
34	61,261	27,6871	S[illegible].Strydom	13	3550
35	62,316	47,2810	PJV.Jooste	33+1	9333