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Articles in the field of agricultural economics, suitable for publication in the journal, will be welcomed.

Articles should have a maximum length of 10 folio pages (including tables, graphs, etc.) typed in double spacing. Contributions, in the language preferred by the writer, should be submitted in triplicate to the Editor, c/o Department of Agricultural Economics and Marketing, Pretoria, and should reach him at least one month prior to date of publication.

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THOUGHTS ON RURAL REFORM AND FACTORS WHICH INFLUENCE THE LOCATION DECISIONS OF FARMERS* 27

by

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1. INTRODUCTION

Rural reform and the uneven distribution of the agricultural income in general¹ and the differences in the average agricultural earnings per farmer in different subnational agricultural areas² are inseparable. This is so because the managerial ability of the farmers differs and because further causes of, as well as the consequences of, this uneven distribution of income erode nature, society and the economy almost irreparably.

Economic growth and development provide the starting point for this article. The reason is that the economic process just mentioned gives rise to various beneficial economic and non-economic influences which affect the farming community. The acceptance of this influence by the individual farmers is not uniform. This influence does not involve only the underlying scientific and technical knowledge of modern farming, but also encompasses the changed social and economic framework which is part of the philosophic basis and historical processes inherent in the urbanisation process^{3**}. This process has a powerful rippling and engulfing effect, so that the modern agriculture of today is an integral part of the urban system and during the post-war period underwent drastic institutional and economic -structure changes.

Authors such as Bishop⁴ and Fox⁵ attribute the institutional and economic -structure changes of an area in time to technological change and consider that this factor, as a result of competition and the price-cost squeeze, puts pressure on farmers to farm more efficiently in terms of economics.

Some farm units can survive a price-cost squeeze and specific problems arising from economic growth and even expand, while others go under. One of the many reasons for this is that the achievement of success

is a function of motivation. Motivation is necessary for an individual to be able to progress financially and otherwise. Add to motivation also the ability of the individual, which depends on the level of training and other obstacles in the way of people who are low on the scale of economic success⁶.

Even if a person is strongly motivated he will not be able to progress if other factors restrict his capacity to progress. A variety of data show that individuals in the lower economic groups have values of such a nature that they weaken their pursuit of aims that could raise them economically⁷. For example, the poor man puts economic security as a priority above a line of employment that suits his disposition.

The level of individuals' and communities' endeavours will differ socially and economically in accordance with their frame of reference. Hyman⁸ shows, for example, that among groups that are relatively low in the economic hierarchy there is a *reduced* pursuit of success, a lack of knowledge about opportunities and a lack of appreciation for training. These absent factors are normally requirements to be able to be economically successful. His results can also be interpreted as showing that the lower income groups do work for better success, but protect themselves against frustrations and failures by lessened endeavour.

Economic depression in time shows a cumulative character and tends to isolate the particular individuals within the broader community who are in such a state, so that those individuals resist changes. In order to overcome rural poverty, factors standing in the way of goal attainment must be removed. Pajestka⁹ maintains that a historical interpretation which explains why a particular situation is encountered is not much use unless a strategic diagnosis which also helps to clarify and explain exactly what must be done to change the situation is also offered. In the same vein as the researchers mentioned, he points to the strong and direct relationship between the economic efficiency of a community and its standard of living, with the factor first mentioned as the point of departure. To remove

* With acknowledgements to Dr W. Vrey of ISEN, UOFS., for comments.

** The urbanisation process includes all changes which, emanating from the urban complexes, have an effect on the rural districts.

the obstacles in the way of greater economic efficiency, the two-way liaison between the external factors brought about by economic growth and internal efficiency is important. Higher efficiency makes possible the better utilisation of external factors and a more effective supervision of their operation¹⁰.

Because agricultural products are locality bound and, with techniques assumed, there are differences between the natural resource basis of both national and subnational areas, the capacity of the various areas to accommodate people in agriculture will differ. In view of possible solutions for the uneven distribution of the agricultural income, the extent of entry into or retirement from or continuation in the agricultural industry of farmers during the process of economic development and growth is important. Location decisions are influenced by both financial and non-financial considerations and such motives will claim the attention of farmers in speculations about rural reform¹¹.

The transfer of people may be dealt with among the theoretical principles concerned in resource allocation. In studies relating to this theory the marginal value product of labour (and capital) in the various sectors is usually considered. In this discussion enterprise is the resource and the relative income is, to the individual, the determining yardstick of choice for locality and allocation. From the above discussion it appears that non-economic factors and powers influence the location decisions of farmers and can in so doing hinder the operation of the aforesaid theory. The role of such non-economic factors will now be considered.

The information that will be used here to illustrate the foregoing propositions comes from a study¹² conducted during July 1969 in the Central Karoo*. It appeared from this investigation that it was mainly the physical size of the Karoo farmer's unit which determined the size of his income and that the location decisions of the various farmers are important with a view to expansion of the farm units. The accompanying results can also serve as an indicator of farmers' location behaviour in general.

2. NON-ECONOMIC FACTORS

With regard to the non-economic factors which influence the economic inducements as regards the allocation of enterprise¹³, it was found that the relationship between financial endeavour and total family income is significant, but not linear¹⁴. This finding supports the assumption that economic factors and mobil-

ity are related, but the lack of rectilinearity indicates that the relationship is not the same under all conditions, but is subject to the influence of other variables. Weitz¹⁵ raises the objection that agricultural planning, particularly at national level, is mainly economic in nature, whereas rural development is influenced by a wide spectrum of non-economic factors.

It is true that the culture of a community is the prevailing habit of thought or pattern of action of that community. Communities are, however, subject to changes from "without"¹⁶, and institutional economists regard the economy as the vehicle for bringing about social changes in communities. This view does not detract from the findings that non-economic motives influence the entrepreneur's choice, because values linked to financial or economic principles need only be a means to a higher goal. The values which an entrepreneur attaches to certain activities, in the opinion of Quenemoen¹⁷, do not always agree with those recommended by rational economic advisers. Values are also the essential parts of the community's self-regulating system, which reflects its needs, standards and interest and which of necessity is tested under specific living conditions. Values influence the entrepreneur's personal choice system and the choice system is influenced by the cultural system he lives under.

Specific values accepted by the farming community are also directly linked to the slow exodus of farmers from the Central Karoo, for example, *sentiment* and other *spiritual values* which are linked with migration from agriculture, which is again associated with personal failures*. Many farmers have, in fact, developed the belief that ambition, honesty, frugality, hard physical work and thrift can overcome all obstacles. In the eyes of the rural community the migration out of agriculture is to be attributed to a failure, and the failure is directly associated with an absence of the above-mentioned personal virtues¹⁹. Information contained in Table 1 directly supports this view.

Farmers in the sample were asked to list in order of importance factors which would determine the success of their sons in wool farming in their geographical area. It was an open question in which no guidance was given to either the farmer or the entrepreneur on what could be possible answers. The results appear in Table 1. According to the information, the farmers rate management very high as a factor which will give rise to success and secondly list personal factors covering the abovementioned attributes of a sterling person or farmer. It may well be argued that if the managerial factor is in order, everything else on the farm will follow. But it is striking that the first two places are filled by personal factors and that financial factors are only placed in the third position. Particularly remarkable is

* The Central Karoo consists of the magisterial districts of Beaufort West, Carnarvon, Fraserburg, Laingsburg, Prince Albert, Richmond, Sutherland, Victoria West and Willowmore.

* Other factors such as age¹⁸ and the farmer's ability to accept a new job outside agriculture are not overlooked in the argument, but are not raised because of its general nature.

the fact that the biggest single problem which will cause depressed incomes in the area, now and in the future, namely farm size, is not even included in the table. On a percentage basis, very few farmers realise that, in view of the economic conditions and the economics of wool farming, undersized farms are the main cause of their depressed income. Then again, an important aspect such as feeding, which includes both the provision of drought feeding and grazing control, is placed lower on the scale than, for example, capital of which the marginal value product was lower as a result of high land prices than the current rate of interest²⁰.

ing that the three regions with relatively better potential, namely S-3S-4, S-5 and S-14, after the endeavour for a well-planned farming enterprise, place the pursuit of high income higher than the other regions. High income plays a lesser part to the farmers in the other regions with the lower potential. The fact that the respondents in S-13 put the pursuit of recognition as excellent farmers in their communities even above the pursuit of a high income indicates that the respondents in S-13, the region with the lowest potential and management ability index, are an example of a *Gemeinschaft type*** of community.

TABLE 1 — Central Karoo: Stratification of the factors^a which, according to the respondents in the various agro-economic regions, are necessary for successful wool sheep farming in their environment, in order of importance, 1968/69

Agro-economic region	Management	Personal ^b factors	Capital	Debt	Pursuit of profit	Feeding
S-3S-4	1	2	5	5	3	4
S-5	1	2	3	4	5	6
S-8	1	2	3	5	4	6
S-11	1	2	3	5	6	4
S-13	1	2	3	4	5	6

(a) Test: Friedman's two-way variance analysis²¹, significant at $p = 0,1$ ($X^2_F = 17,75$).

(b) Include love of wool farming, diligence, thrift, love of the soil, not being afraid of set-backs, etc.

TABLE 2 — Central Karoo: Stratification of five factors of endeavour^a according to their priority rating by farmers in the various agro-economic regions, 1968/69

Agro-economic region	High income	Well-planned farm enterprise	Factors Neat farm enterprise	Recognition in the community	Type of way of life
S-3S-4	2	1	3	5	4
S-5	2	1	3	5	4
S-8	4	1	3	5	2
S-11	3	1	2	5	3
S-13	5	1	3	4	2
S-14	2	1	3	5	3

(a) $X^2_F = 12,8124$ and statistically significant at $p = 0,05$

The information in Table 2 supports the preceding finding because four of the S regions place the kind of life that farming offers them fairly high on their scale of priorities of the factors representing the farmer's endeavours in his farming enterprise*. It is, however, strik-

According to Table 3, in which the factors given in Table 2 are arranged not according to regions, but ac-

* S-8 and S-13 place the type of way of life second and S-11 and S-14 place it third.

** The *Gesellschaft* as against *Gemeinschaft* type of activities, typify members of a community that consciously tries to obtain knowledge from a broader sphere than the purely local and to which relationships are the means to an end and not ends in themselves.

TABLE 3 — Central Karoo: Stratification of five factors of endeavour^a according to their priority rating by the farmers in various farm size groups, 1968/69

Farm size (ha)	High income	Well planned farm enter- prise	Factors Neat farm enterprise	Recognition in the community	Type of way of life
2 600 or smaller	2	1	4	5	3
2 601 — 5 100	2	1	3	5	4
5 101 or larger	3	1	2	5	4

(a) $\chi^2_F = 10,665$ and statistically significant at $p = 0,05$

cording to farm size*, it is also evident that the farmers in the smallest size group attach greater importance to the kind of life that farming offers them than the farmers in the two other size groups.

The system of values of the *Gemeinschaft system* differs considerably from that of the *Gesellschaft system*. The farmers who practise a subsistence economy (usually of the *Gemeinschaft type of system*), emphasise progress with few resources, no debt and the satisfaction they get from the kind of life offered by farming²². This is in contrast to the progressive farmer's regard for managerial skill, high productivity methods and an ambition to get ahead. With the low wool prices the wool farmer was faced with during and before the survey, the opportunity for those farmers who have physically too few production agents even to maintain what they have to progress financially in the commercial farming class was very limited. This is true not only because of the economic obstacles, but also because the acceptance of new values is difficult²³.

The farmer with managerial skill on the small farm will not, however, be typical of the *Gemeinschaft system* and will be held back from adaptation only by economic obstacles. By contrast, a poor manager on a big farm may cling to obsolete values and, because of the status which his income position gives him, resist the penetration of change in his community.

3. ECONOMIC FACTORS

In terms of the entry into, retirement from or continuation in the agricultural industry, this whole pro-

cess cannot simply be divorced from economic factors. In order to establish what the income must be to prevent the entrepreneur from accepting another job opportunity*, the question put to him was how low his income would have to drop and remain before he would give up his farm. By definition, the answer to this is not the *transfer income* because this answer gives the income which just prevents the farmer from leaving the farm²⁴. This income is therefore referred to as the *minimum income*. The result of this is given in Table 4.

According to the variance analysis (Table 4.1) of the information in Table 4, the F value for regions is not significant, but it is in respect of size groups. A significant difference between the S regions was found with regard to managerial ability** (Table 5), but there is no difference here between regions as regards the minimum income. These findings agree with Gilchrist's²⁶ proposition that the minimum income, which is a specific subjective income, is evenly distributed and not correlated with ability. However, it was found that managerial ability is positively correlated with enterprise size (Table 6). The better quality managers, however, demand a higher standard of living because they have had better alternative opportunities and, if ability influences the minimum income in this respect and to this extent, there will be an increase in the minimum income with size, as is found in Tables 4 and 4.1

* Enterprise size and managerial ability are positively correlated. See Table 6.

* The so-called transfer income.

** Burger's²⁵ management ability index was used and consists of six components combined in an index to evaluate the farmer by allocating weights in respect of his aims, record-keeping, office or provision for his administration, estimation of expenses, maintenance and management of labourers.

TABLE 4 — Central Karoo: The relationship between farm area and the minimum amount to which income must drop to persuade the farmer to leave the farm, according to agro-economic regions, 1968/69

Farm area (ha)	Agro-economic regions						Average ^a
	S-3S-4	S-5	S-8	S-11	S-13	S-14	
	Minimum income (R)						
2 600 or smaller	2 850	1 764	550	2 800	3 950	1 850	2 403
2 601 — 5 100	4 189	2 147	2 983	2 678	2 366	2 265	2 668
5 101 or larger	6 737	3 967	4 078	2 955	3 533	2 400	3 883
Average	4 599	3 101	3 125	2 824	3 112	2 188	2 176

(a) Significant difference between size groups 1 and 3 and between 2 and 3

TABLE 4.1 —Central Karoo: Variance analysis of the minimum amount which will make the farmer leave the farm, according to farm size and agro-economic regions, 1968/69

Source of variation	Degrees of freedom	Sum of squares	Average sum of squares	F
Size group	2	4200835,22	21000417,61	3,49 ^a
Regions	5	53694146,55	10738829,31	1,78
Interaction	10	48402293,53	4840229,35	0,80
Error	153	920566671,27	6016775,62	
Total	171			

(a) Significant at $p = 0,05$

TABLE 5 —Central Karoo: Frequency distribution of the respondents according to managerial ability in the various agro-economic regions, 1968/69

Managerial ability index	S-3S-4		S-5		S-8		S-11		S-13		S-14	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
33 or less	—	—	5	7,6	2	7,7	1	3,5	4	5,9	—	—
34 — 66	10	35,7	28	42,4	12	46,2	23	79,3	41	60,3	4	44,4
67 or greater	18	64,3	33	50,0	12	41,1	5	17,2	23	33,8	5	55,6
Total	28	100,0	66	100,0	26	100,0	29	100,0	68	100,0	9	100,0
Average index	27 ^a		59		63		59		64		67 ^b	

(a) Statistically significant higher than the average of S-5, S-8, S-11, S-13. (Scheffé's test).

(b) Statistically significant above the average of S-5, S-11. (Scheffé's test).

TABLE 6 — Central Karoo: The influence of farm size and managerial ability on the net farm income per small stock unit, 1968/69

Managerial ability index	Farm size (ha)			General average
	2 600 or smaller	2 601- 5 100	5 101 or larger	
Net farm income per SSU (R)				
50 or less	0,71944	0,97368	2,16923	1,19300**
51-69	1,73875	2,11585	2,76340	2,35048**
Greater than	2,94000	3,05380	2,86386	2,92736**
General average	1,799396	2,04778	2,59883	2,28104

** The mutual differences are statistically significant.

TABLE 6.1 —Central Karoo: Variance analysis of farm size, managerial ability and net farm income per small stock unit, 1968/69

Source of variation	Degrees of freedom	Sum of squares	Average sum of squares	F
Farm size group	2	17,0465	8,5232	1,2802
Managerial ability index	2	70,8557	35,4278	5,3213**
Interaction	4	12,7153	3,1788	0,4774
Error	216	1438,0786	6,6577	
Total	224			

** $p = 0,01$

The relationship of the above to the low and uneven distribution of agricultural incomes is difficult to interpret for purposes of implementation. The minimum income is not correlated with ability, but is positively correlated with size. It may therefore be accepted that the minimum income of a good and a poor manager on a big farm will be about the same. With a decline in their product prices, however, they would not leave agriculture at the same time, because according to Table 2 a farmer of the *Gemeinschaft* type (poor manager) attaches a higher value to the kind of life that agriculture offers him than does a farmer of the *Gesellschaft* type (good manager). A non-economic factor (kind of life) therefore frustrates the allocation function of an economic factor, and it may be expected that the poor manager will shift the level of his transfer income if he is confronted with the transfer question and so postpone his leaving. The production volume and total income of a poor manager (farmer) on a big farm may be higher than those of a good manager (farmer) on a considerably smaller farm. With a drop in the price of the product the decrease in the income of the inefficient big farmer will be proportionally smaller, but bigger in absolute terms than the decrease in the income of the efficient small farmer, so that the inferior manager on the big farm generally aggravates the rate at which the agricultural income lags. Because

of the financial protection which the scope of the former entrepreneur's farm enterprise offers him, and to the extent, of course, that his burden of debt permits, the process of evacuation that is necessary to counteract the lag in the average income does not take place fast enough.

In order to establish whether the farmers had any preferences as regards town size, they were asked at what salary they would be prepared to go and live in their home town*, a town as big as Beaufort West and a city as big as Port Elizabeth. The answers, on average per region, are given in Table 7. As shown in Table 7, there were differences between the farmers in the various S regions in respect of the towns. From this it appears that the respondents are prepared to go and live at a lower cash salary in their home towns than in bigger towns or cities.

Unfortunately no question was posed to determine what accounts for this discrimination. Is it the higher cost of living in the bigger centres or is it a matter of demanding a higher reward before going to bigger centres because the farmer might feel more like a stranger or a displaced person there, in other words, an

* If Beaufort West was the respondent's home town, Bloemfontein was taken as the second city and Cape Town as the third.

TABLE 7 — Central Karoo: The cash salary at which the farmers in the various agro-economic regions are prepared to move to three towns of different sizes,^a 1968/69

S regions	Town 1	Town 2	Town 3	Significant difference between towns	
	R	R	R		
S-3S-4	4488,89	5394,44	7472,22	1 or 3**	2 and 3**
S-5	3044,50	4405,00	5665,50	1 or 2**	1 and 3**
S-8	3376,84	4266,32	5142,11	1 or 3**	
S-11	2904,62	3586,15	4491,54	1 or 3**	
S-13	3349,38	3694,38	4378,13	1 or 2**	1 and 3**
S-14	2893,33	3653,33	6040,00	1 or 3**	2 and 3**

(a) Town 1 (home town) is smaller than Town 2, which again is smaller than Town 3.

TABLE 7.1 — Central Karoo: Variance analysis of the different cash salaries at which the respondents in the various agro-economic regions are prepared to emigrate to towns of different sizes, 1968/69

Source of variance	Degrees of freedom	Sum of squares	Average sum of squares	F
Between farmers:				
Regions	5	164023369,60	32804673,196	0,6836
Error	138	6621400211,8	47981160,955	
Within farmers:				
Towns	2	103867969,68	51933984,84	8,586**
Interaction	10	60885690589,90	6088569058,99	100,660
Error	275	1669420532,20	6048625,12	

** Difference significant from zero at a test level of $p = 0,01$

TABLE 8 — Central Karoo: The respondents in the various agro-economic regions who were not interested at all in moving to a town, 1968

S regions	Town 1		Town 2		Town 3	
	Number of farmers	Percentage	Number of farmers	Percentage ^a	Number of farmers	Percentage ^a
S-3S-4	12	41,38	12	41,38	12	41,38
S-5	15	22,38	14	20,89	14	20,89
S-8	11	42,07	12	46,15	11	42,07
S-11	6	19,35	5	16,13	5	16,13
S-13	39	55,71	29	41,43	28	40,00
S-14	3	27,27	3	27,27	3	27,27

(a) Percentage of the total number of respondents in each agro-economic region.

inward disinclination to go and live in unknown parts? The author feels that it is a mixture of both.

According to the information in Table 8, the greatest percentage of respondents who were not interested at all in moving to their home town was found in region S-13 — the region with some of the lowest potential, which (in Table 2) rated farm life highest. In some cases a small drop was found in the percentage of those reluctant to move, and even less to the bigger centres. Perhaps this should be attributed to a belief that it would be regarded as a personal weakness to leave agriculture and that they would rather go to a bigger centre where they would be less noticed as emigrants from agriculture and come across fewer people they knew.

4. SUMMARY

The urbanisation process is an umbrella concept in relation to both the economic and non-economic factors which bring about changes in rural areas. Because there are managerial differences, the acceptance of the process by the various farmers is variable. Although economic factors such as prices usually govern the allocation of labour, they may be frustrated by non-economic factors such as love of the kind of life offered by farming and the greater weight attached by the farmers to personal abilities than economic factors as the secret of successful farming. The result is that the movement of farmers from rural areas, where necessary, will take place too slowly. Policy endeavours to encourage this emigration must, however, take account of these non-economic factors to prevent the inferior manager being the one who stays. Giving inefficient big farmers unintentional protection must also be avoided.

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