

A Characterisation of Success Factors of Projects funded by the Comprehensive Agricultural Support Programme in the Free State Province¹

By

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Abstract

The aim of the Department of Agriculture's (DoA) Comprehensive Agricultural Support Programme (CASP) is to provide financial post-settlement support to the beneficiaries of land reform. To date, no comprehensive, formal evaluation of the Programme has been conducted at project level.

During 2007, 109 CASP funded projects in the Free State province were assessed. This assessment included a questionnaire of which the data was used to develop a rating system on the viability of the selected projects. The overall aim of this study is to gain insights in the characteristics of successful and sustainable agricultural development projects to ultimately refocus support rather than predicting success.

A regression analysis was conducted to explain the variation in the success ratings. The results show that eleven variables have a significant influence on success. A comprehensive financial administration system was found to be the most significant variable characterising projects with a higher score on the success and sustainability scale.

1. Introduction

The South African agriculture sector can be characterised as dual, consisting of a commercial part and an emerging farming sub sector. The emerging sector has arisen as a result of policies targeting the participation of Previously Disadvantaged Individuals (PDI's) in the food economy through land ownership. The principle behind the policy is that the upliftment of rural households should be instigated by agricultural development. The subsistent sub-sector is struggling to develop itself to such a stage in which it can provide food and income for the poor in a viable manner.

Most research related to agricultural development finance in South Africa stems from the 90's and early 2000's, but more recent studies are lacking. An unfortunate situation since the implementation of agricultural development finance was not properly monitored and guided as in other policy area's (Makhura, 2007). Furthermore, agricultural development finance is viewed to be one of the composite factors or drivers for agriculture and welfare (Diagne & Zeller, 2001).

To cater for the need for post settlement support, in the case of land distribution for agricultural development, the Comprehensive Agricultural Support Programme (CASP) was established and implemented in 2004. This programme focuses on six areas, namely: information and knowledge management, technical assistance, financing mechanisms, training and capacity building, marketing and business development, on- and off-farm infrastructure. CASP targets Previously Disadvantaged Individuals (PDI's) which have been beneficiaries of land reform or who have acquired land through private means and are involved in production or processing activities. The Programme is governed by the National Department of Agriculture (DoA) and funds are allocated by the Provincial Departments of Agriculture.

Provincial CASP Monitoring Units have been established and have the role to conduct site visits and monitor the progress being made. However, this monitoring system is currently not functional and a systematic approach to monitor the CASP funding is non-existent. Against this background, the Free State Department of Agricultural initiated an extensive assessment of all CASP funded projects in the Province. A comprehensive analysis was critical for two main reasons, namely: to establish a base line on the current status of the projects and to determine the socio-economic impact of CASP funded projects. In total 109 agricultural projects were appraised. The basis of this analysis was an extensive field-survey using two questionnaires covering agricultural, financial and socio-economic issues.

One of the aims of the provincial assessment was to determine the reasons of failure (e.g. the reasons for success). In order to determine to what extent projects are successful and sustainable in the long run, and on the other side of the spectrum, a total failure, a project rating system was developed. This rating system was based on four factors which were derived from the questionnaires completed with the project chairpersons of the CASP funded projects. These factors were selected on the basis of their distinguished nature in the verification of the success and economic sustainability of any project. It was agreed to use a combination of factors rather than a single determinant, since success and sustainability is a fairly comprehensive aspect. The categorization gives an indication on the rate of success of the various CASP funded projects in the Free State Province. It has become evident that only about one out of every five projects can be rated as really successful and sustainable.

The developed rating system will be used to determine which factors have an influence on whether a project can be classified as a success. In order to determine the success factors, the relationship between selected variables obtained from the questionnaire and data from the rating system need to be analysed.

The objective of this paper is to determine which factors have an impact on the success of CASP funded projects. The intention of the study is not to predict success but rather identify significant characteristics of successful projects. In a broader perspective the results can be extrapolated to the emerging farming sector at large. The outcomes of this study can be used to re-engineer the CASP funding system as well as to set priorities within the institutional framework surrounding emerging farming in South Africa.

2. Data

2.1 Introduction

As mentioned, two comprehensive questionnaires were used to survey the projects. One questionnaire focused on the agricultural aspects as was conducted with the project chairperson as where the other questionnaire focussed on socio-economic aspects and was conducted with three beneficiaries per project. For the purpose of this study we will mainly focus on the results of the agricultural questionnaire. The latter consisted of various sections with questions about the project background, finances, group dynamics, stakeholder

involvement, agricultural production, markets, resources, assets and support. The last section of the questionnaire contains an evaluation by the fieldworker consisting of an assessment of the current assets and on-farm infrastructure, a project report and a project rating system. Additional to the questionnaire the study included a brief evaluation of the business plan and in the case where data was available a financial analyses was conducted. With regard to the integrity and eminence of the survey, the remark must be made that the fieldworkers consisted of qualified agricultural economists.

A total of 109 different emerging agriculture projects throughout the Free State Province were analysed. An overview of the projects visited and appraised is given in Table 1. Most of the projects visited evolved around livestock production.

Table 1: Type of projects assessed

Type of project	%
Livestock	65
Crops	13
Mixed farming	18
Agro processing	4

Ten commonages were excluded from the data set used for this study, due to their distinguished character (making the total sample consist of 99 projects).

2.2 Characteristics of respondents

These factors that were hypothesised to influence the rate of success are selected on the basis on their likelihood of impact. Some factors have not been considered because of too little observations. A comprehensive overview of the selected independent variables can be found in the Table 7 in Appendix 2. The table also gives a summary of the characteristics of the four categories of viability as well as the expected signs of the influence of the variables on the rate of success and sustainability. The shown characterisation indicates the distinction between successful projects (category 1) and projects that are marginal successful or less (categories 2, 3 and 4).

3. Methodology

3.1 Linear regression

If we want to determine the factors of success we must first decide what can be classified as success. Determining the success and economic sustainability of project for emerging farmers may be a controversial exercise, as the question “What is success?” will always persist. This does not mean an attempt to quantify the viability, as proxy for success, of each project

should not be made. Ultimately, the goal of national agricultural support policies and measures is to uplift rural households. In this perspective “success” must be perceived as the ability of the assessed projects to ensure this in a successful and sustainable manner.

A rating system was developed to quantify to what extent a project is currently successful and sustainable, and on the other side of the spectrum, a total failure. A total of fourteen factors derived from the questionnaire were selected to capture the rate of success of each project. These factors were selected on the basis of their distinguished nature in the verification of the success of any project. It was agreed to use a combination of factors rather than a single determinant, since success and sustainability are fairly comprehensive aspects. In Table 6 in Appendix 1 an overview is given of all the relevant factors that were used to calculate the individual project score. In order to include the information of all fourteen “success factors” in one dependent variable factor analysis⁵ was used to extract one factor from the fourteen initial variables. The factor scores then were used as the values for the dependent variable in the analysis. The average factor score of the sample was 0.00, with a maximum score of 2.12 and a minimum of -1.29.

To simplify interpretation and to allow for dynamics in the sample, the scores were clustered in four groups based on the standard deviation. In conclave with the fieldworkers it was agreed on a label per category to indicate the current status and the amount of future support needed. The outcome is shown in Table 2.

Table 2: Categorisation of viability according to the project rating system

Category	Label	% of projects
1	Successful and sustainable	21.2
2	Marginally successful and support needed to ensure long term sustainability	26.3
3	Not successful and extensive support needed to ensure survival	37.4
4	Failure	15.2

Table 2 raises the deeper incentive for this study; the majority (78%) of the projects are currently not viable. Obviously one can argue that the evaluated projects are in different stages of development e.g. a few projects are in their initial stage. However, in-depth examination shows that this will only be reflected in a slight move between category 3 and 2 as the status quo remains.

Since the dependent variable in this study is continuous Ordinary Least Square (OLS) linear regression was applied to investigate the factors that influence the success rate of the CASP-funded projects in the Free State Province. This model rest on the principle that the best fit is the instance for which the sum of the squared residuals has its least sum. The model can be expressed as:

⁵ The procedures used to perform factor analysis are well documented by Jordaan and Grové (2007). Since performing factor analysis is not the aim of this research the procedures that were followed in the factor analysis are not discussed in detail.

$$Y_i = \beta_0 + \beta_j X_j + \varepsilon$$

Where, Y is the success and sustainable score for project i , β_j the parameters to be estimated, X_j are the factors which influence the rate of success and sustainability and ε represents the observational error. The model was estimated using the SPSS statistical software package.

3.2 Hypothesised explanatory variables

Most of the 57 initial variables used in this study have the form of a yes - no question, where a “no” answer equals “0” and “yes” equals “1”. The variables 46 and 47 have been clustered together to create aggregate variables that can be used when underlying factors don’t seem significant. The last three variables (55, 56 and 57) were derived from the beneficiary questionnaire. Per project three beneficiaries were interviewed, an average of these observations was used to calculate the respective variables for each project. The responses connected with these variables are a little more extensive and are therefore depicted in Table 8 in Appendix 3.

The large amount (57) of explanatory variables compared to the sample size ($n=99$) necessitated the use of a data reduction technique. Closer inspection of the initial hypothesised explanatory variables furthermore showed high correlation between variables 18 to 30. Such correlation causes the concern of multicollinearity problem. In order to include most of the obtained information factor analysis was used, amongst others, to reduce the dimensionality of the data. Variables 18 to 30 are associated with some form of assistance received by respondents. Based on the Kaiser Meyer Olkin (KMO) measure of sampling adequacy, all thirteen of those variables “belong to the same family” and are suited to be included in a factor analysis. The number of factors to be specified in the factor analysis was determined by performing a principle component analysis (Woodburn, 1993). Only principle components with eigenvalues greater than one were accepted. Three principle components had eigenvalues greater than 1 and thus, 3 factors were extracted in the factor analysis. Table 3 shows the factor loadings of the three extracted factors.

Table 3: Factor loadings of the three factors extracted from the thirteen variables representing some form of assistance received by the projects

	DoA	Stake	Comm
Advice received from LED officials (y/n/)	0.2654	-0.2287	0.1370
Financial support received from DoA (y/n/)	0.6370	-0.0225	0.1991
Technical support received from DoA (y/n/)	0.8392	0.1214	-0.0204
Management support received from DoA (y/n/)	0.8330	-0.0295	-0.0533
Training received from DoA (y/n/)	0.8456	0.0180	0.0284
Advice received from DoA (y/n/)	0.6922	0.0485	0.1284
Land bank involvement (y/n/)	0.0991	0.6972	-0.0950
Commercial bank involvement (y/n/)	0.0845	0.6136	-0.0016
NAFU involvement (y/n/)	-0.1235	0.5252	0.2108
Co-op involvement (y/n/)	0.0049	0.7792	0.0680
Producer Organisations' involvement (y/n/)	0.0657	0.2269	0.7141
Community involvement (y/n/)	-0.0483	-0.1710	0.8461
Commercial farmer involvement (y/n/)	0.2030	0.0413	0.4977

Since all of the variables that scored high factor loadings in the first factor have some reference to assistance received from the Department of Agriculture, the first factor was called, "DoA". The combination of variables that scored high factor loadings in the second factor refers to assistance received from stakeholders other than DoA, hence the second factor was called "Stake". Finally, the variables that scored high factor loadings in Factor 3 refer more to the influence of the community on the project and therefore Factor 3 was called, "Comm". The factor scores of these three factors were used as values for explanatory variables that tested the significance of support to the success rate of CASP funded projects in the Free State Province

All the variables included in the regression analysis are depicted in Table 4. The last column indicates the hypothesised sign.

Table 4: Overview of the explanatory variables used in the regression analysis

Variable	Description	Expected sign
Areafarmed	Area farmed on (ha)	+
Areaharvest	Area harvested (ha)	+
Both	Both an intensive and extensive production system	+/-
Comm	Community involvement	+
Conflict	Conflict amongst beneficiaries	-
DistanceToNearestTown	Distance to nearest town	-
DoA	Support from DoA	+
Eleconn	Electricity connected	+
Experience	Experience in agriculture of the beneficiaries	+
Extensive	Extensive production system	+
IndexFinState	Index of financial statements	+
Intensive	Intensive production system	+
Interest	Interest in agriculture as a sector to work in	+
Leaseland	Land leased out	-
Maizeharvest	Maize harvested	+
Mentoring	Mentoring received	+
Nocropharvest	No crops harvested	-
NumChick	Number of chicken	+
NumLGLvstk	Number of large livestock	+
NumSMLvst	Number of small livestock	+
Offecon	Off –farm income received	-
Regularmeet	Regular meetings	+
SophBusiness	Sophisticated business structure	+
Stake	Stakeholder involvement	+
Sunflowerharvest	Sunflowers harvested	+
TotNumBen	Total number of beneficiaries	+
Training	Training received	+/-
Wateravail	Sufficient water available	+
Willingness	Willingness of the beneficiaries to participate in the project	+

4. Results and discussion

The results of the best fit regression model used to identify the factors that impact the rate of success and sustainability are shown in Table 5. The explanatory variables in Table 5 are ranked based on standardised coefficients to allow the comparison of the importance of the impact of the respective variables on the rate of success and sustainability. The variables that were not significant were excluded from the final model. As becomes evident from this table, with a statistical significance of 10 percent 11 of the investigated explanatory variables do have a significant effect on the success and sustainability of CASP-funded projects in the Free State Province. The F-test suggests that these variables jointly are significant ($p < 0.00000003$) in explaining the variation in the success variable. Furthermore, the R^2 of 0.48 suggests that the estimated model explains 48 percent of the variation in the dependent variable. Such a value also suggests that the model is a fairly good fit. However, since about 52 percent of the variation is explained by exogenous factors further research is necessary to identify the other factors that contribute to the success of CASP-funded projects in the Free State Province.

Table 5: Results of the regression analysis on the identification of factors impacting on the rate of success and sustainability of CASP funded projects in the Free State province

Standardized Coefficients			
Variables	Beta	t	Prob(t)
(Constant)		-0.4917	0.6242
IndexFinState	0.3191	3.6135	0.0005
NumSMLvst	0.3126	3.6980	0.0004
NumLGLvstk	0.2585	3.1430	0.0023
Regularmeet	0.2089	2.4852	0.0149
SophBusiness	-0.2017	-2.2910	0.0245
Offecon	-0.1844	-2.0916	0.0395
Intensive	0.1504	1.7246	0.0883
Comm	0.1495	1.7584	0.0823
Stake	0.1463	1.6746	0.0977
NumChick	0.1423	1.7253	0.0881
Experience	-0.0563	-0.6128	0.5416
Interest	0.0512	0.5570	0.5790
Willingness	0.0091	0.1028	0.9184
DoA	-0.0045	-0.0578	0.9541
F-test	6.15	Number of observation: 99	
Prob (F)	0.00000003	Degrees of freedom: 87	
R²	0.48		

The index of the financial administration (“IndexFinState”) has a significant ($p < 0.0005$) positive influence on the rate of success and sustainability, hence the viability of a project. This implies that projects with a comprehensive financial administration have the tendency to be more successful. It can be further argued that this variable can be interpreted as a proxy for sound management practices, stipulating the importance of implementing a financial measurement and performance system for CASP funded projects.

In contrast with popular believe; agricultural experience, interest in agriculture and willingness to participate of the beneficiaries did not significantly impact the rate of success and sustainability. However, the variation in the observations regarding these variables was fairly limited, so these results should not be extrapolated to land reform projects nationwide. Furthermore the measurement of these variables is might be contentious. It’s therefore suggested that in future assessments these variables should be captured by an index. Such an index should reveal more specific experiences, skills, understanding and interests of agricultural practices. Whether other personal factors like capacity, interests, loyalties, culture and preferences do have an influence remains open for further research.

Two variables that play an important significant role with regards to support are “Comm” and “Stake”. These variables reflect the community involvement and stakeholder involvement respectively. Support from these groups, in whatever form, is more important for the viability of the projects than rather relying solely on support from the DoA. The latter, represented in the variable “DoA”, was found to be insignificant. Different type of support, like financial transfers, training and advice received from the DoA was extensively prevalent among most of the projects. However, the results imply that DoA support does not make a distinguished

difference in contrast to general perception. The efficiency and result orientated nature of the DoA support structures in place for these projects is questionable.

Both the number of small livestock (“NumSMLvstk”: pigs and sheep) and the number of large livestock (“NumLGLvstk”: beef and dairy cattle) have a positive effect on the rate of success and sustainability. This outcome indicates that the larger the scale of animal production the higher the success and sustainability score. This implies that economies of scale in livestock production do play a role in the determination of the rate of viability. Hence, an economic unit does require a certain minimum amount of livestock. Since the variables on crop production are not significant, this type of agricultural production does not impact the viability of projects at this stage. This is underpinned by the fact that only 31 percent of the projects are intentionally involved in crop production of which the majority did not even harvest any crop in 2007.

The projects which have formal meetings do perform better on the success and sustainability scale than projects which have no regular meetings. The latter have a share of 14 percent in all the projects. This is thus indicated by the significant positive impact of the variable “Regmeet”. With regard to the frequency of the meetings it is evident from Table 3 that daily meetings are more prevalent with the category 1 projects as where weekly meetings are more prevalent at projects in the categories 2, 3 and 4.

The variable concerning the legal status of the project, “SophBusiness” has a significant negative impact on the success and sustainability score. As mentioned the variable included all sophisticated business forms. A trust is the most common legal status in all the categories of success, although relatively more prevalent in the category 2, 3 and 4 projects. In category 1 projects the solo enterprise was remarkably more common, although not significantly as that variable was dropped in the final model. Why the type of legal entity has a negative impact on the viability of a project requires further research. One plausible explanation may be that the legal structure is too complex and administering it absorbs too much human capital.

The negative significance of the variable “Offecon” means that receiving an off-farm income can be identified as a characteristic of a lower rate of success. In more than half of the projects the beneficiaries received some sort of additional off-farm income. It may be argued that the dependency of beneficiaries on these incomes decreases when projects become more successful. However, on the other hand the low dependency on income from farm activities may also result in a lower involvement in the project.

Within the context of the CASP funded projects, intensive production systems are more successful. This is reflected by the positive and significant variable “Intensive”. This variable is closely connected with horticultural, broiler, agri-processing and pig production, so this indirectly implies a positive correlation between these types of agricultural production and the rate of success and sustainability. This is undermined by the fact that the variable “Numchick”, which represents the number of chickens, also has a positive significant impact. This furthermore entails that the scale of chicken production does play a positive role in the determination of the viability of a project.

5. Conclusion and recommendations

The main shortcoming, of this study is that it is static in nature and only gives an identification of characteristics of success, rather than identifying pathways to achieve this. Anyhow, predicting the viability of a project is a more complicated exercise and due to the limitations of the dataset fall outside the scope of this study. However, apart from the characterisation the study provides us with some insights on the factors that may predict success. This becomes evident when assessing the relationship of continuous independent variables like the number of livestock and the index of financial administration. Further research to strategise those findings within the CASP framework is needed.

When assessing the initial dataset of 54 variables and the final model it is remarkable that many variables that were hypothesised to have an influence were found insignificant. Especially factors like conflict between beneficiaries, water availability, total area harvested and distance to the nearest town were expected to have an influence. However the insignificance of these variables indicates that these variables cannot be used to characterise a higher rate of success. This does not imply that the underlying constraints identified by these variables should not be tackled but it does imply that this will not advance the projects on the scale of success and sustainability.

The model failed to explain more than half of the variation in the dependant variable. This may suggest that the difference in characterisation of successful and not successful projects is marginal. Furthermore, it implies that other factors not considered in the study do have a significant impact on the viability of CASP funded projects. In this regard, the effects of environmental, resource, political and climatic constraints should not be undermined.

Putting in perspective that CASP was implemented four years ago to provide post settlement support to enhance agricultural production of the targeted projects; one can argue that the rate of success has been marginal to date. Under spending by local government has been a problem, but the assessed projects did receive funding and have improved and established infrastructure and financed inputs. Re-engineering the CASP funding framework will be essential as many projects lack the incentive to re-invest revenue since the perception is that CASP provides the inputs anyway. As this study tried to determine why this is the case, it succeeded to identify some of characteristics related to a higher score on the success and sustainability scale. Characterising the best practices within the framework of CASP funded projects assists to reset the focus on the viability of agricultural development projects and CASP.

This study should form the basis for further comprehensive and holistic research to determine the essentials of viable agricultural development projects. Taking into account the risky nature of and marginal returns in agriculture, as well as the developments in the equilibrium of food security, the research should have an institutional approach rather than a focus on just resources. According to the theory of New Institutional Economics the focus to enhance economic and social performance should be re-aligned to four dimensions, namely: social embeddedness, institutional environment, governance structures, resource allocation and employment. Apart from tackling operational capacity problems the CASP support

framework should be refocused along these dimensions to target the root causes of the failure of projects. Prudent selection criteria, an enduring monitoring system and (if necessary) adequate re-alignment are essential in this regard. Only then will this agricultural development support programme be able to uplift of the rural impoverished.

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Appendix 1

Table 6: Variables used for the Success and Sustainability Score

Question
<i>Does the project make a profit? (y/n)</i>
Project rating system: 1. <i>Business plan available (y/n)</i> 2. <i>Assets are well maintained (y/n)</i> 3. <i>Beneficiaries receiving benefits above the minimum wage (y/n)</i> 4. <i>Beneficiaries know what benefits they are entitled to (y/n)</i> 5. <i>Number of animals or areas planted has increased (y/n)</i> 6. <i>Well kept plans for the future (y/n)</i>
Fieldworkers opinion: <i>Successful and sustainable in the long run</i>

Appendix 2

Table 7: Overview of explanatory variables and characterisation of categories of viability

Variable	Category 1 projects (n=19)	Category 2, 3, 4 projects (n=80)
2. <i>Livestock production (y/n)</i>	0.74	0.61
3. <i>Crop production (y/n)</i>	0.11	0.14
4. <i>Mixed production (y/n)</i>	0.11	0.20
5. <i>Intensive production (y/n)</i>	0.32	0.26
6. <i>Extensive (y/n)</i>	0.58	0.48
7. <i>Both (y/n)</i>	0.11	0.25
8. <i>Total number of beneficiaries per project</i>	4.37	4.23
9. <i>Trust (y/n)</i>	0.32	0.56
10. <i>Close Corporation (y/n)</i>	0.11	0.15

11. <i>Partnership (y/n)</i>	0.11	0.05
12. <i>CPA (y/n)</i>	0.00	0.06
13. <i>Cooperative (y/n)</i>	0.11	0.08
14. <i>Sophisticated business structure (y/n)⁶</i>	0.65	0.90
15. <i>Solo enterprise (y/n)</i>	0.26	0.06
16. <i>Distance from project site to nearest town</i>	30.42	20.48
17. <i>Index of financial administration⁷</i>	0.61	0.20
18. <i>Advice received from LED officials (y/n/)</i>	0.05	0.06
19. <i>Financial support received from DoA (y/n/)</i>	0.63	0.59
20. <i>Technical support received from DoA (y/n/)</i>	0.42	0.55
21. <i>Management support received from DoA (y/n/)</i>	0.37	0.49
22. <i>Training received from DoA (y/n/)</i>	0.58	0.65
23. <i>Advice received from DoA (y/n/)</i>	0.84	0.80
24. <i>Land bank involvement (y/n/)</i>	0.37	0.26
25. <i>Commercial bank involvement (y/n/)</i>	0.42	0.25
26. <i>NAFU involvement (y/n/)</i>	0.53	0.40
27. <i>Co-op involvement (y/n/)</i>	0.42	0.33
28. <i>Producer Organisations' involvement (y/n/)</i>	0.11	0.05
29. <i>Community involvement (y/n/)</i>	0.26	0.10

⁶ Sophisticated business structures includes all types of legal entity except for solo enterprise

⁷ The index of financial administration was calculated by taking the squared mean of the observations whether an income statement, a balance sheet, a cash flow statement and a production budget are kept for the project.

30. <i>Commercial farmer involvement (y/n)</i>	0.37	0.44
31. <i>Training received (y/n)</i>	0.95	0.89
32. <i>Mentoring received (y/n)</i>	0.47	0.31
33. <i>Is there conflict between the beneficiaries (y/n)</i>	0.05	0.28
34. <i>No meetings(y/n)</i>	0.05	0.16
35. <i>Daily meetings (y/n)</i>	0.11	0.05
36. <i>Weekly meetings (y/n)</i>	0.05	0.16
37. <i>Monthly meetings (y/n)</i>	0.47	0.45
38. <i>Quarterly meetings (y/n)</i>	0.26	0.14
39. <i>Total area of land leased out</i>	11.11	76.18
40. <i>Total area of land farmed on</i>	379.18	248.45
41. <i>Total number of dairy cattle</i>	38.16	2.96
42. <i>Total number of beef cattle</i>	35.74	15.75
43. <i>Total number of sheep</i>	75.47	28.03
44. <i>Total number of pigs</i>	0.00	2.66
45. <i>Total number of chickens</i>	352.63	64.58
46. <i>Total number of large livestock (beef and dairy cattle)</i>	73.89	18.71
47. <i>Total number of small livestock (pigs, sheep)</i>	76.84	37.99
48. <i>Total area harvested</i>	12.16	21.29
49. <i>No crops harvested (y/n)</i>	0.89	0.76
50. <i>Maize harvested (y/n)</i>	0.11	0.11
51. <i>Sunflower harvested (y/n)</i>	0.05	0.10
52. <i>Sufficient water available (y/n)</i>	0.21	0.40
53. <i>Electricity connected (y/n)</i>	0.42	0.35
54. <i>Receiving off-farm income (y/n)</i>	0.47	0.48

55. <i>Form of agricultural experience</i>	2.11	1.98
56. <i>Level of interest in agriculture as a sector to work in</i>	4.44	4.69
57. <i>Willingness to participate in the project</i>	4.77	4.76

Appendix 3

Table 8: Overview of variables derived from the beneficiary questionnaire

Question	Answer	Value
What form of agricultural experience did you have before joining the project?	None	1
	Less than 5 years experience as labourer on a farm	2
	More than 5 years experience as a labourer on a farm	3
	Less than 5 years of farm-management experience	4
	More than 5 years of farm-management experience	5
Indicate your level of interest in agriculture as a sector in which you would like to be economically active	Not interested at all	1
	Not interested	2
	Neutral	3
	Interested	4
	Very interested	5
Indicate your willingness to participate in the project when you were first asked to submit your details for an application	Very low	1
	Low	2
	Neutral	3
	High	4
	Very high	5