Full Length Research Paper

Critical assessment of the performance and sustainability of Land Bank customers among emerging farmers in South Africa

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The performance and sustainability of Land Bank customers amongst emerging farmers was analyzed. This was done by conducting a situational analysis through determining profitability, success, failures and reasons thereof. An intensive investigation incorporating desktop research, the perusal of government reports and research articles, qualitative and quantitative research methodologies revealed that perception of the emerging Land Bank farmers reflected more on their lack of capacity than their successes and failures. It was also found that skills, finance and infrastructure were the major success barriers for these farmers. A huge investment and improvements in skills, finance, extension support and production is required. This warrants further research on appropriate interventions that may specifically suit different commodities and geographic areas.

Key words: Performance, profitability, skills, wealth creation, capacity.

INTRODUCTION

In South Africa the quest for sustainable and productive emerging farming is borne out of the need to bring the previously disadvantaged farming entrepreneurs into the mainstream agricultural economy. Both the public and private sectors have since 1994 demonstrated the commitment to address this challenge. Stakeholders in both sectors have regarded it as essential that sustainable emerging farming should in the future provide economic and social opportunities for the benefit of present and future generations, while maintaining and enhancing the quality of the environment and the natural resource base that supports production, and provides a basis for all terrestrial life on the planet (Dumanski et al., 1998).

Since the launch of its business re-engineering process referred to as project gateway in 2002, the Land Bank as one of the parastatals has been in the forefront of servicing the needs of both commercial and developing or emerging farmers (Land Bank, 2003). The 2003 Land Bank mission statement; "Land and Agricultural Development Bank is an agricultural development finance institution that supports economic growth in South Africa through the provision of retail, wholesale, project and micro financial services to agriculture and related rural services" reiterates its commitment to enhance performance and the sustainability of emerging farming and the agricultural sector in general (Land Bank, 2003). On 19 August, 2010, in his speech, Mr. P. Gordhan (The Honourable Minister of Finance in South Africa) reemphasised the developmental role that Land Bank has to play in South African economy:

''Land Bank has to ask itself how it will play the developmental role that we expect of it, whilst at the same time ensuring that it remains a financially sustainable institution. It has got to ask itself how it is going to play its

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role differently and a lot more energetically in order that small farmers, in particular, but indeed the farming and agricultural community as a whole, can make a difference to the South African economy ''.

In view of these expectations and its mission statement, it is clear that the role of this institution is of fundamental importance to the economic growth and development of the emerging farming sector. Its vision of being a leading provider of world class agricultural financial services to agriculture and related rural sectors in South Africa authenticates the corporate strategic directives. Corporate strategies outlined below were used to accomplish the bank vision and mission:

1. Impacting positively on South Africa's development by contributing to Government's integrated sustainable rural development strategy (ISRDS);
2. Developing agriculture and contributing to sustainable rural development;
3. Supporting emerging and resource-poor farmers as well as established commercial farmers while playing an active role in transformation;
4. Aligning the Bank's products and programmes with government initiatives, in particular the strategy for the agricultural sector and land redistribution for Agricultural Development (LRAD); and
5. Leveraging private sector investment into the agricultural sector.

It appears that these core strategies were designed to ensure an enabling agricultural development strategy that enhances performance and sustainability of both developed and developing farmers. Accordingly, these strategies are clear commitments in implementing its objectives as outlined by Land and Agricultural Development Bank Act 15 of 2002, which was gazetted and came into effect in 10 June 2002 (Land and Agricultural Development Bank Act, 2002). This is also in complement with the 2009 vision and mission of National Department of Agriculture (now known as Department of Agriculture and Forestry) in South Africa "Vision: *United and prosperous agricultural sector*". Initiatives to accomplish this mission were instigated, and these have benefited some members of the farming community. In this study, these communities are referred to as Land Bank customers. Amongst these initiatives are capacity building programs established to assist emerging farmers through the Development Projects Unit (Land Bank, 2003). Other initiatives that have an indirect impact on developing farmers such as the establishment of Agricultural Chairs in disadvantaged institutions and the setting-up of a bursary fund for historically disadvantaged individuals (HDI's) were also established (Makhura, 2009).

Monwabisi Fandeso, a former Land Bank CEO, is credited with saying "Land Bank is continuing to make in roads in developing and helping our farmers to grow their

potential'' (Land Bank, 2003). This implies that the Land Bank is committed to achieve its mission. The measurement of the bank's successes in realising its mission is important not only to itself and its customers, but also to the entire nation, particularly because most of its resources have been provided by the State. In its annual report of 2003, the Land Bank reported that prior to 2003, it had spent R2 billion in a period of five years, followed by R300 million which was made available to 130,000 people who were previously regarded as un-bankable. Although evidence indicates positive contributions by this institution, the results and impact of its initiatives are not widely publicized.

Due to the lack of information on these developments, the profiles of its customers remain obscured and its impact undetermined. This was illustrated by the resolution of Land Summit Commission on transformation of financial institutions, which resolved that:

"Land Bank should immediately review the performance of all previously Land Bank funded projects and facilitate assistance where required" (NDA, 2005).

Quoting some earlier writers, Nel et al. (1998) listed the following as some of the qualities often found in successful farmers: Ambition, sound business judgement, good planning, possession of technical know-how, ability to think things through, a flair for opportune investment, wise use of money, initiative, managerial ability, entrepreneurial instinct and ability to handle fluctuating conditions. These are all to some degree related to the farmers' attitudes and insights, and are certainly important for emerging farmers in developing economies.

In this article, findings regarding the Land Bank customer's sustainability and performance profile are reported. The analysis of the profitability, success, failures, and reasons for success and failures, perceptions on their performance and that of their contemporaries provided the critical business profile of the above-mentioned customers. Areas that need further improvements for the sustainability of these customers were identified.

METHODOLOGY

Land Bank experienced some problems with loan repayment by their newer customers, mostly new emerging farmers who had received land under South Africa's land reform programmes and decided that a survey should be conducted in order to gain insights into factors influencing both success and repayment rates by this new category of customers. A survey as described in the ensuing paragraphs was done, but the results were not immediately analysed. The senior author of this article then obtained the information from the Land Bank and the analyses as described later ensued with the purpose of gaining insights into existing success/ failure factors. Although the survey design may have been somewhat different had the authors planned it from the start, the data was deemed appropriate for the analysis. The methodology and the authors' approach dealt with the following: A desktop

survey was followed by questionnaire and semi-structured interviews. Primary and secondary surveys were used during data collection in order to broaden knowledge of the researcher (Mampholo and Botha, 2004). The methodology has proven to be vital for the success of qualitative research because it maximises trust and cooperation between interviewer and interviewee (Fick, 1998). To ensure trustworthiness, rigor and quality, triangulation procedures were employed (Golafshani, 2003). Both qualitative and quantitative research methods were used. Prior to the data collection, the questionnaire used was subjected to expert evaluation. The data was collected during focus sessions and workshops. The survey instrument in the form of self–completion questionnaire comprising of 35 closed–ended items was used.

The data was gathered during six months from February 2007, followed by three months of data capturing. The duration of the data collection was largely influenced by the need for more information and improved precision and also because wide geographical areas were covered. These data were collected from a sample of 460 emerging farmers across the nine provinces of South Africa. Emerging farmers were defined as those previously disadvantaged farmers who were then participating in the market but still faced constraints to full participation (Makhura, 2008). A stratified randomized design was used as the sampling design. According to Diamantopoulos and Schlegelmilch (2005), a stratified randomized sampling design is one in which sample members are chosen randomly from different segment (strata) of an overall population; each stratum may be sampled in proportion to its size in the overall population or sample members of different strata may have disproportionate chances of being selected. The following sampling procedure was used to select the farmers:

1. A list of all developing farmers (Land Bank customers) was obtained.
2. The population of developing farmers was obtained and verified (n = 4,600).
3. This was categorised in terms of Land Bank national branches (n = 27).
4. Branches were found to be unequal in terms of size.
5. Double accounts were rectified.
6. 10% (universe) of the developing farmers were selected (the sample size was pre-determined by the Land Bank research directorate at head office).
7. Another criterion used was short-term, medium and long-term loans provided to the customer.
8. 460 personal interviews and focus group sessions were conducted.

A summary of the variables analysed is presented in Appendix-Table 1. Quantitative and qualitative approaches were used in this study. Data was analysed using the FREQ and MEANS procedures of SAS. The FREQ procedure was used to estimate the probability of success and conduct statistical significance test. The null hypothesis tested was that the proportions for the success and failure are equal that is, probability of success and failure are both equal to 50%. The FREQ procedure is appropriate for analysis of discrete data as is the case in the current study. The 95% confidence intervals for the proportions were also computed. The MEANS procedure was used to obtain descriptive statistics of the variables considered in the current study.

RESULTS AND DISCUSSION

Here is a presentation and discussion of the empirical research results. The aim of the study was to establish the profile of enterprises owned by Land Bank customers by scanning their performance and sustainability. The perceptions of the respondents were used to determine the profiles of these enterprises. Secondly, the income, yield and profit were used to corroborate profiles. This was followed by the assessment of the farm profit as yardstick for success and failures. The reasons for success or failures were ascertained and recommendations on aspects that need to be improved were ranked.

Measures of success for emerging farmers

Three measures of success that is, increase in income (INCRINCOME), increase in yields (INCRYIELDS) and increase in profit (INCRPROFIT) were identified for the purpose of finding out which of these variables were frequently used by emerging farmers in measuring their success rate. Figure 1 indicates the results for which measures of success amongst the three variables were used frequently. According to Figure 1, 46.6% of Land Bank customers use the increase in income (INCRINCOME), followed by 42.16% for increase in profit (INCRPROFIT) and subsequently 29.41% for increase in yields (INCRYIELDS) respectively, to measure their success.

This trend indicates that the majority of emerging farmers use increase in income as their measure of success. This clearly shows that emerging farmers lack the knowledge to differentiate between profit and income. This lack of distinction provides a picture that emerging farmers lack the understanding of financial instruments. Therefore, basic financial literacy training for this category of farmers is required.

Perception of success and failures by Land Bank customers

Perceptions of farmers have been used in various studies to reflect their background knowledge and expectations (Sinja et al., 2004). Although this method is not entirely reliable, it serves as a basis for other more reliable and objective measurements. It is within this context that this method was used to supply some basis to investigate the success and the failures of the land bank customers.

Success in all provinces

According to Table 1, of 460 emerging farmers in the sample, 80.77% perceived their success rate as positive. The results indicate that there is significant difference (P < 0.05) among provinces. Therefore, these results indicate that success rates of different provinces are not the same.

Success in individual provinces

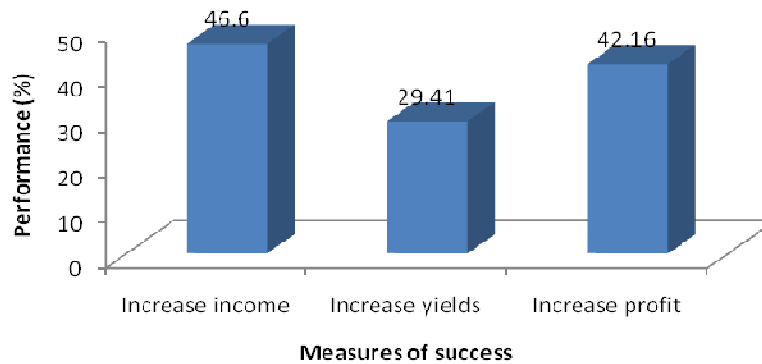Table 1 also reflects different levels of success rate amongst

Figure 1. Profile for measure of success.

Table 1. Perception for success or failure for Land Bank customers in RSA.

Variables	N	Success (%)	95% lower confidence limit	95% upper confidence limit	Pr>[Z]
All Provinces	130	80.77	72.93	87.15	<.0001***
Individual Provinces					
EC	18	88.89	65.29	98.62	0.0022***
WC	22	77.27	54.63	92.18	0.0190***
GP	3	100	29.24	100	0.2482ns
FS	18	66.67	40.99	86.86	0.2386ns
KZN	6	83.33	35.88	99.58	0.2207ns
LP	10	80	44.39	97.48	0.1138ns
MP	14	92.86	66.13	99.82	0.0033***
NC	20	75	50.9	91.34	0.0442**
NW	19	84.21	60.42	96.62	0.0059***

*** Significant at 1%, **Significant at 5% and ns= non-significant. EC= Eastern Cape, WC= Western Cape,GP= Gauteng, FS= Free State, KZN= Kwa Zulu Natal, LP= Limpopo MP= Mpumalanga, NC= Northern Cape and NW= North West.

amongst individual provinces. According to the results, Free State, Northern Cape, and Western Cape are the least successful provinces compared to the rest. Notwithstanding the limited response in Gauteng and KZN, Gauteng is perceived to be the highest performing province, followed by Mpumalanga and subsequently followed by Eastern Cape, North West, and KwaZulu-Natal respectively. The results indicate that only the findings in the Eastern Cape Province were significant at the 0.05 level of significance. It appears that emerging farmers perceive that they are highly successful. This could be as a result of lack of capacity to monitor and evaluate their success rate. It could also imply that the farmers might be indicating that they aim to be highly successful.

Success based on farm profit for emerging farmers

Unlike where farmers' success rate was measured in terms of perception, here we used actual farm profit by emerging farmers to investigate their success rate. The assessment of farm success based on actual farm profit compared with perception is regarded as more objective and reliable relative to the use of farmer' perception. Table 2 provides the results on the actual success rate of Land Bank customers. The average success rate in all provinces together is 51.18%.

The results obtained through objective assessment show a very low success rate of Land Bank customers compared to the results obtained through subjective assessment. This picture indicates that emerging farmers' judgement of success is unreliable. It also shows that these farmers lack the ability and reliable tools to accurately judge their success rate. This might be as a result of their lack of knowledge about financial instruments used in measuring success. Table 2 also reflects different levels of success rate amongst individual provinces. According to the results, Free State, KZN, North West and Northern Cape, are the worst performers. Not withstanding the limited response in Gauteng, this Province still performs far much better than the rest of the Provinces, followed by Eastern Cape, Western Cape, Mpumalanga and Limpopo Provinces respectively.

Table 2. Farm profit for Land Bank customers in RSA.

Variables	N	Success (%)	95% lower confidence limit	95% upper confidence limit	Pr>[Z]
All Provinces	127	51.18	42.16	60.15	0.859[ns]
Provinces					
EC	18	66.67	40.99	86.66	0.239[ns]
WC	22	63.64	40.66	82.8	0.286[ns]
GP	3	100	29.24	100	0.248[ns]
FS	15	33.33	11.82	61.62	0.302
KZN	6	16.67	0.42	64.12	0.221[ns]
LP	11	54.55	23.38	83.25	1.000[ns]
MP	14	57.14	28.86	82.34	0.789[ns]
NC	19	47.37	24.45	71.14	1.000[ns]
NW	19	36.84	16.29	61.64	0.359[ns]

*** Significant at 1%, **Significant at 5% and ns= non-significant. EC= Eastern Cape, WC= Western Cape,GP= Gauteng, FS= Free State, KZN= Kwa Zulu Natal, LP= Limpopo MP= Mpumalanga, NC= Northern Cape and NW= North West.

Table 3. Farm profit by year for Land Bank customers in RSA.

Variables	N	Success (%)	95% lower confidence limit	95% upper confidence limit	Pr>[Z]
Pro2003	12	83.33	51.59	97.91	0.043**
Pro2004	19	73.68	48.8	90.85	0.067[ns]
Pro2005	30	63.33	43.86	80.07	0.201[ns]
Pro2006	45	60	44.33	74.3	0.233[ns]
Pro2007	33	63.64	45.12	79.6	0.164[ns]

*** Significant at 1%, **Significant at 5% and ns= non-significant. Pro2007= Profit for 2007, Pro2006= Profit for 2006, Pro2005= Profit for 2005, Pro2004= Profit for 2004 and Pro2003= Profit for 2003.

According to these results, a classification of provinces based on their success rate as a way to justify that more support is required, could be necessary. The objectives of such classification would be to provide specific features, interventions and support services per province. In addition, it would be necessary to investigate their actual capacities that have unique influences on a particular province. Emerging farmers' success rate was also measured using their actual farm profit from different periods. Farm profits ranging from year 2003 to 2007 is shown in Table 3. In all five years period, the farm profit shows that there is no significant difference ($P > 0.05$) amongst the success rate for all the periods under consideration. Therefore, it can be deduced that the success during these period is not different. However, the results show a tendency of decline in success rate over time.

In addition to the results obtained using the farm profit during certain period, information regarding the mean for farm profit and loss was presented in order to provide a picture of the success and failure experienced by Land Bank customers. Table 4 shows information mentioned above. The results indicate that in 2003, the lowest mean profit, loss and maximum profit were recorded. This was followed by negative mean values with high losses coupled with some increase in profit in the subsequent years. It appears that this trend may indicate a high level of financial risks and with inconsistent success in this farming sector.

REASONS FOR SUCCESS

The previous sections dealt with levels of success rates for Land Bank customers in various Provinces. Although the success rate was not high, there were still some successes. This section tries to establish sources of these successes. In order to establish the reasons for these successes, farmers were requested to reflect which factors amongst the following: finance, theft, disease, transport, market drought, good prices, land and skills were most crucial for their successes. The results of this investigation are presented in Table 5. According to the results, a large proportion of the emerging farmer Land

Table 4. Farm profit and loss (in Rands) of Land Bank customers in RSA.

Variables	N	Mean	Std. dev.	Min (Profit/loss)	Max (Profit)
Proloss2003	12	53 106.00	104 356.80	-40 000.00	344 000.00
Proloss2004	19	-52 418.32	810 841.41	-3 141 632.00	1 306 000.00
Proloss2005	30	-66 434.33	513 028.76	-189 2000.00	1 153 648.00
Proloss2006	45	62 174.40	379 257.47	-528 000.00	2 000 000.00
Proloss2007	33	406 881.79	1 595 007.43	-136 000.00	9 105 284.00

*** Significant at 1%, **Significant at 5% and ns= non-significant. Proloss2007= Profit or loss for 2007, Proloss 2006= Profit or loss for 2006, Proloss 2005= Profit or loss for 2005, Proloss 2004= Profit or loss for 2004 and Proloss 2003= Profit or loss for 2003.

Table 5. Reasons for success (%) of Land Bank customers in RSA.

Variable	N	Success (%)	P Pr>[Z]r>[Z]
Finance	81	9.88	<0.0001
Theft	81	0	<0.0001
Diseases	81	0	<0.0001
Transport	81	0	<0.0001
Markets	81	7.41	<0.0001
Drought	81	4.94	<0.0001
Infrastructure	81	7.41	<0.0001
Good prices	81	9.88	<0.0001
Land	81	0	<0.0001
Skills	81	65.43	0.0077

Bank customers regarded skills (65.43%) as the most important reason for success, while finance, good prices, market, infrastructure and absence of drought were also regarded important. Farmers do not view theft, disease, transport and land as factors that play a role in the success. In view of the above findings, it appears that emerging farmers apparently do not properly understand the value chain. This is because it is unclear how emerging farmers could believe that the aforesaid factors play no role in their successes, whilst, it is known that without land, transport, disease control and proper security, production could be severely affected and consequently the profit could be adversely impacted. These results therefore, reflect a level of incapacity on the part of emerging farmers.

REASONS FOR FAILURE

Perceived reasons for failure were also established by interviewing the emerging farmers themselves and providing them with a choice of major causes of failures in this farming sector. The results of these investigations are presented in Table 6. According to these results, inadequate finance (44.21%), followed by inadequacies in infrastructure (34.74%) and skills (34.74%), and subsequetly, drought (21.05%), theft (6.32%) and insufficient land (6.32%) were regarded as major causes

of Land Bank customers' failures. In addition, low prices, (5.26%), poor markets (4.21%) and diseases (3.16%) are perceived to play a small role in causing failures amongst the farming SMMEs. On the basis of the results, it is clear that emerging farmers do not clearly or realistically understand factors that cause failures in their farming enterprises. Therefore, it would be important to train these farmers and to monitor and evaluate their risk factors, so that they can be able to detect those factors that may indicate failure prior to the actual collapse. In this way, development institutions would have more confidence in investing in their enterprises.

IMPROVEMENTS NECESSARY FOR THE SUCCESS OF FARMING SMMES

Improvements are needed in order to improve sucess rates of emerging farmers. In this investigation, farmers were afforded the opportunities to indicate which of the identified factors need improvement in order to ensure a better sucess rate. Table 7 provides the results of responses from emerging farmers. In the respondents' view, major improvements are needed in production (59.38%), training (52.34%), finance (52.34%) and extension support (42.19%). They put less importance on Land Bank monitoring (23.44%), interest rates (17.19%),

Table 6. Reasons for failures (%) of Land Bank customers in RSA.

Variable	N	Failure (%)	Pr>[Z]
Inadequate finance	95	44.21	0.3049
Theft	95	6.32	<0.0001
Diseases	95	3.16	<0.0001
Market problems	95	4.21	<0.0001
Drought	95	21.05	<0.0001
Inadequate infrastructure	95	34.74	0.0041
Inadequate land	95	6.32	<0.0001
Low prices	95	5.26	<0.0001
Inadequate skills	95	34.74	0.0041

Table 7. Aspects that need improvements.

Variable	N	For improvement (%)	Pr>[Z]
Loans	128	52.34	0.6585
Interest rates	128	17.19	<0.0001
Insurance	128	0.78	<0.0001
Land Bank monitoring	128	23.44	<0.0001
Extension	128	42.19	0.0931
Increased production	128	59.38	0.0421
Drought relief	128	14.06	<0.0001
Training	128	52.98	0.5854

and drought relief (14.06%) while only 0.78% regard insurance as important. It is once more evident that Land Bank customers among emerging farmers require capacity building to improve their state of affairs.

Conclusion

Performance and sustainability are essential for both survival and growth of any business. Land Bank customers' emerging farming businesses like any business require sustenance in order to create required wealth. On the basis of these ideals, performance and sustainability of Land Bank emerging farmers were investigated using both the perception the farmers and actual profit attained. From this study, the following were found:

1. That perception of the emerging farmers reflected more on their lack of capacity than the successes and failures of farming SMMEs.
2. That the level of successes found was average.
3. That skills, finance and infrastructure are major success barriers for farming SMMEs.
4. That major improvements in skills, finance, extension support and production are required.

The results strongly reveal that the majority of the farmers interviewed use increased income as a measure of their success rather than increased profit. In addition, the finding indicates that the majority of these entrepreneurs have rather limited understanding of financial management skills. Therefore, training them in the principles of financial management would be useful. These findings are in agreement with Foti et al. (2007) who found that 70.9% of the respondents in Zimbabwe's rural micro enterprises, failed due to lack of managerial skills.

In addition, Groenewald (2004) argued that managerial skills and business knowledge are an indication of how well an owner can perform important tasks. The analysis of farm profit as a measure of success of farming enterprises indicated a lack of overall financial planning and business management. It can be argued that business mentorships and apprenticeship need serious consideration for profitability and sustainability of these businesses. Skills levels were identified as major causes of success or failure, followed by financial resources, good prices and infrastructure.

This is consistent with the findings by previous researchers (Tustin, 2003; Rogerson, 2006; Eziakor, 1988). According to the respondents, increased production, training, access to finance and extension services need to be highly prioritized in order to ensure success and sustainability. From this study, the profiles of Land

Bank customers were established. These profiles depict that the majority of these customers still suffer from lack of skills, financial access, infrastructure and extension services. This is despite the numerous interventions by both private and public sectors on these factors. The impact of institutions such as Ntsika Enterprise Promotion Agency, Khula, Umsombovu Youth Fund (now National Youth Development Agency), various Sector Education and Training Agencies (SETAs), Small Enterprise Development Agency (SEDA) and private sector interventions on capacity building warrant further investigation.

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APPENDIX

Table 1. Description of variables.

Variables	Description	Values
	Perception about success of emerging farmers	
Success	Do you think emerging farmers are succeeding?	0=otherwise (No), 1=Yes
Number of successful farmers	**Out of 10 emerging farmers, how many do you think are succeeding**	Continuous (number)
Reasons for failure	**What do you think is the reasons for failure of farming operations of emerging farmers?**	
a) Finance	Lack of finance	0=otherwise (No), 1=Yes
b) Theft	Theft	0=otherwise (No), 1=Yes
c) Diseases	Diseases	0=otherwise (No), 1=Yes
d) Transport	Lack of transport	0=otherwise (No), 1=Yes
e) Market	Lack of markets	0=otherwise (No), 1=Yes
f) Drought	Drought	0=otherwise (No), 1=Yes
g) Infrastructure	Lack of infrastructure/equipments	0=otherwise (No), 1=Yes
h) Price	Low prices	0=otherwise (No), 1=Yes
i) Land	Insufficient land	0=otherwise (No), 1=Yes
j) Skills	Lack of farming and management skills	0=otherwise (No), 1=Yes
Solutions for improvements	What do you think are the solutions for improving farming operations of emerging farmers? (What needs to be done to assist emerging farmers to farm successfully?	
a) Training	Skills training	0=otherwise (No), 1=Yes
b) Finance	More finance and capital	0=otherwise (No), 1=Yes
c) Land	More land	0=otherwise (No), 1=Yes
d) Markets	Access to markets	0=otherwise (No), 1=Yes
e) Extension services	Extension services	0=otherwise (No), 1=Yes
Success based on self evaluation	Do you regard your farming operation as succeeding or failing?	0=otherwise (No), 1=Yes
Success measurements	**How do you measure your success?**	
a) Income	Increasing income as measure of success	0=otherwise (No), 1=Yes
b) Yield	Increasing yields as measure of success	0=otherwise (No), 1=Yes
c) Profit	Increasing profit as measure of success	0=otherwise (No), 1=Yes
Reasons for failure	**What are your reasons for failure?**	
a) Finance	Lack of finance	0=otherwise (No), 1=Yes
b) Theft	Theft	0=otherwise (No), 1=Yes
c) Disease	Diseases	0=otherwise (No), 1=Yes
d) Transport	Lack of transport	0=otherwise (No), 1=Yes
e) Market	Lack of markets	0=otherwise (No), 1=Yes
f) Drought	Drought	0=otherwise (No), 1=Yes
g) Infrastructure	Lack of infrastructure/equipments	0=otherwise (No), 1=Yes
h) Prices	Low prices	0=otherwise (No), 1=Yes
i) Land	Insufficient land	0=otherwise (No), 1=Yes
j) Skills	Lack of farming and management skills	0=otherwise (No), 1=Yes

Table 1. Contd.

	Reasons for success	What are your reasons for success?	
α)	Finance	Access to finance	0=otherwise (No), 1=Yes
β)	Theft	No theft	0=otherwise (No), 1=Yes
χ)	Diseases	No diseases	0=otherwise (No), 1=Yes
δ)	Transport	Access to transport	0=otherwise (No), 1=Yes
ε)	Market	Access to markets	0=otherwise (No), 1=Yes
φ)	Drought	No drought	0=otherwise (No), 1=Yes
γ)	Infrastructure	Access to infrastructure/equipments	0=otherwise (No), 1=Yes
η)	Prices	Good prices	0=otherwise (No), 1=Yes
ι)	Land	Sufficient land	0=otherwise (No), 1=Yes
φ)	Farming skills	Farming and management skills	0=otherwise (No), 1=Yes
	Necessary improvement	**What do you think can be done to improve your farming?**	
a)	Loan	Get another loan	0=otherwise (No), 1=Yes
b)	Low interest	Lower interest	0=otherwise (No), 1=Yes
c)	Insurance	Insurance for produce destruction	0=otherwise (No), 1=Yes
d)	Monitoring by Land Bank	Stricter monitoring by Land Bank	0=otherwise (No), 1=Yes
e)	Extension support	Extension advice	0=otherwise (No), 1=Yes
f)	Increase production	Increase production	0=otherwise (No), 1=Yes
g)	Drought relief	Drought relief	0=otherwise (No), 1=Yes
h)	Training	Training	0=otherwise (No), 1=Yes
i) Gender		Gender of the household head	0, otherwise (female), 1=male