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Economic development through government farming loans: A case study of A1 Farmers in Mashonaland Central Province, Zimbabwe

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Abstract

The main purpose of the study was to assess if it was possible for a government to spearhead economic development through farmer a pre-production input credit scheme. Specifically the research was to find the possibility to initiate economic development, and to sustain it through farmer subsidies. This was done by assessing the impact of government loans on maize production levels by A1 Farmers. A related objective was to establish whether farmer characteristic features such as main occupation, level of agricultural training and gender had a significant role in determining farmer productivity levels. Research data analysed revealed that government loans had no positive impact on the yields by A1 farmers in the districts, but had a small, yet uneven positive correlation in the province as a whole. This was largely due to inadequacy of inputs, the chaotic distribution mechanisms used and abuse of the facility. Farmer characteristic features revealed a positive relationship with the maize yields of the farmers. Few farmers had agricultural training and their high production had no effect on the overall provincial output. The research found that the government could choose between committing itself to a vibrant input credit scheme and leaving maize production under an open market system. The paper recommends for a viable market driven distribution system of inputs. This is less involving on the part of the government, and rewards genuine farmers at the end of the production line, and would eradicate the abuse of the facility. The research further recommends for enhanced farmer training programs through an intensive extension service.

Keywords: A1 Farmers, Debt, Equity, Input Credit Scheme, Land Reform.

Introduction

Zimbabwe's economy is 75 percent agricultural with three quarters of industry in the country agriculturally driven (Nebakwe, 2002). This makes agriculture the back-borne of the Zimbabwean economy in which maize is a major crop in terms of planted hectares when compared with other crops like tobacco, wheat, cotton, Soya beans and paprika (Hanyani-Mlambo, 2004; Mazuru, 2005; CSO, 2004). It is the leading economic sector in Zimbabwe (Hanyani-Mlambo, 2004) as an engine for economic growth. The agricultural sector contributes between 15-20% of the gross domestic product (G.D.P), 40-45% of the total exports and about 60% of the value of raw materials to the manufacturing sector. The agricultural sector also supports the livelihoods of about 70% of the economically active population engaged in agricultural production. (Mazuru, 2005).

Zimbabwe Trade (Zim-Trade) (2002) was of the opinion that the government's land reform program would usher in new players in the country's agricultural sector, a development that has potential to expand Zimbabwe's export base. This was against the criticism from ZimOnline (2005) that was on the opinion that the Zimbabwean government had failed to equip farmers with relevant skills and inputs to maintain production. However the minister of agriculture reiterated government's efforts to ensure that each farming season succeeds. The production of maize is supported by the Zimbabwean government to ensure that there food security because maize is a staple crop.

The national pre/post-colonial imbalance in land distribution led to the 2000 land reform through farm invasions. The government then embarked on a Land Reform Program in 2001 to properly reallocate the grabbed pieces of land, and to officially correct the post-colonial land distribution imbalances. Before the introduction of the current land acquisition policy some three-quarters of the best lands belonged to about 4500 whites of British origin that made up less than one percent of the estimated 13 million population.(Nabakwe, 2002). For instance, A1 Resettlement was at zero hectares as of June 2000 and by July 2003, A2 Resettlement had 5.6 % while A1 Resettlement had 10.6 % of the former white commercial farmers (Utete, 2003). Each A1 farmers was allocated six hectares of arable land. However, the Utete report expected maize output from farmers to increase due to land fertility and good rainfall patterns in the resettled areas. It was with this fast track land reform program that food security became a concern in Zimbabwe.

Despite the fact that the land reform program improved indigenous farmers' access to land of better agricultural potential, the government made initiatives and programs to enhance farmer productivity. These included rehabilitation of irrigation schemes through funds from the Reserve Bank of Zimbabwe (RBZ) and financial assistance through the recently established Land Bank. The government's credit scheme has been in the form of cash, seeds, fertilizers, implements and tillage services. Under the

scheme the ministry of local government was given the responsibility to distribute farm implements, capital and seeds to farmers (Nabakwe, 2002) with the assistance of district committees comprising of relevant government ministries/departments and local leaders (Hanyani-Mlambo, 2005)

The District Development Fund (DDF) was mandated to provide tillage to A1 and communal farmers. DDF had charges that differed depending on whether the tractor came with fuel (wet charges) or if farmers provided their own fuel (dry Charges). DDF also offered ploughing, disking, ripping or ridging services for a flat fee of ZWD$189 000 per hectare (2004 prices) in addition to the farmers supplying 35 litres of diesel for the dry rate (Hanyani-Mlambo, 2004).

The government also gave the Land Bank the mandate to provide financial resources to communal and resettled farmers, through the Reserve Bank of Zimbabwe's (RBZ) productive sector loan facility where the government was a guarantor for the borrowed funds. The interest rate for this facility was 20% as opposed to the market rate that was at 300% by then (The Herald, December 2005**)**. The productive sector facility had by the end of 2004 benefited agriculture to the extent of ZWD$893, 1 billion (not re-valued), representing 43% of the disbursements up to September 2004 (GOZ, 2004). However, the interest rate charged for the year 2004 on other Land Bank loans was increased from previous levels of 30% to 70% per annum on all outstanding balances (Hanyani-Mlambo, 204).

Funds allocated to the Ministry of Agriculture from the annual budgets revealed its commitment to agriculture. As an example, for 2004 /2005 production season, the Ministry of Agriculture and Rural Development as well as that of Lands, Land Reform and Resettlement in the office of the President and Cabinet was given ZWD$538 billion as compared to ZWD$162 billion provided during the 2003/2004 production season (GOZ, 2003, 2004). In the 2005 budget, the Government re-emphasized the need to further capitalize the Land Bank by a budgetary provision of ZWD$150 billion, this being in addition to the ZWD$60 billion allocated in 2004 (GOZ, 2004). All this was aimed at enhancing effective land utilization and also to improve on land productivity thereby ensuring the availability of food.

Surprisingly, most A1 farmers in Mashonaland Central province still have uncultivated fields and low agricultural produce making food security to remain a concern in Zimbabwe. Mazuru (2005) had alluded to the uncultivated farms saying that some (A2 Farmers) were still taking farming as part time employment. This therefore explains the need to identify the characteristic features of the resettled farmers, and to assess the impact of the loans that were advanced by the government.

Research methodology

The Descriptive Survey method (Aaker, 1998) was used, and the data collection instrument used was the Interview. Farmer interviews were carried out during farmer meeting that were organised by the department of Agriculture, Research and Extension (AREX). This made it possible to collected sufficient data before leaving the subjects. Triangulation of information between farmer households, AREX, Ministry of Lands Resettlement and Rural Development, and District Administrators was done to enhance accuracy and reliability of collected data. However, household participation was used to estimate maize yields for the farmers that did not record their yearly harvests. Convenience sampling was done for the three districts (Wegner, 2003) because they are in the same ecological region, and they are best maize producing districts in the province. The sample of 150 farmer households was randomly selected. This was necessary to assess the nature and characteristic feature of the resettled farmers without any bias.

Post coding of the data was done first. This was necessary for qualitative data to fit into quantitative analysis and for statistical manipulation that was done using The Statistical Package for Social Scientists (SPSS) version 10. The use of SPSS made data analysis simpler in that the package could create tables, give descriptive statistics, and could calculate and compare means, variance sand standard deviations. Analytical tools together with measures of central tendency such as frequencies, averages, mean, and measures of dispersions (standard deviation) were used. Data presentation was largely based on descriptive statistics, tables and graphs (figures).

Results

Household Information

Forty-eight farmer households were interviewed in Shamva and Bindura districts. Mazowe district had more farmers selected because it had the largest pool of the A1 farmers as compared to other two districts. Out of the sample, one hundred and twenty six were male-headed families. Although twenty-four households appeared to be female headed, thirteen of them lived with their husbands who were not actively involved in farming. Thus they were treated as part of the female-headed families since women were making major farming decisions. The dominance of male-headed households is because the land reform program was for families rather than individuals and most households are male headed.

For the first two years, female-headed households had a higher average yield per farmer than male-headed households as shown in Table 1. This was different in the second two years. However, there is nothing significant with the figures especially given that the purely female-headed households had a very small fraction of the sample.

Table 1: Average maize production levels by gender for four years

1.1 Household head		maize yield in 2006	maize yield in 2005	maize yield in 2004	maize yield in 2003
Male	Mean	9.8040	10.5698	11.4183	13.0699
	Number	126	126	120	93
	Std. Deviation	9.96762	7.50804	12.79467	14.53630
Female	Mean	9.7917	9.7583	14.0095	14.0762
	Number	24	24	21	21
	Std. Deviation	6.67799	6.25918	15.32126	18.57175

Main occupations for A1 Farmers

Out of the Farmers interviewed, sixty households relied on agriculture for survival. On the other hand, seventy-two had formal jobs elsewhere, twelve relied on casual jobs and six were business owners. This agrees with Mazuru's (2005) observation that new farmers had not taken farming as a main occupation. Dual occupations was evident especially due to the under capitalisation of A1 farms and uncertainty in weather conditions. Added to this is the subsistence nature of A1 farming, especially for small farms that are not self contained.

Of importance to this research was whether the dual occupation by the smallholder farmers had any effect on farmer productivity levels. A further analysis revealed that most farmers who relied on casual jobs had the least average yields. Furthermore the same farmers did not cultivate all their land. They ended up leasing some of their uncultivated land to financially well-endowed farmers. Some could hardly harvest up to half a tone of maize on their cultivated hectares. Farmers that relied solely on farming had generally a higher mean yield per farmer as compared to those that had formal jobs. Farmers that owned businesses had the highest mean yield per farmer. This might have been due to adequate financial resources so as to procure inputs and to cultivate land on time. This is shown in Table 2.

Table 2: Farmer's occupation and their maize yields from 2003 to 2006

Main occupation		Maize yield in 2006	Maize yield in 2005	Maize yield in 2004	Maize yield in 2003
Farming	Mean	11.54	10.87	13.31	16.73
	Number	60	60	57	48
Formal job	Mean	9.08	10.50	10.87	11.08
	Number	72	72	66	51
Casual jobs	Mean	3.00	3.68	2.15	0.90
	Number	12	12	12	9
Owns a business	Mean	14.65	18.95	27.00	22.50
	Number	6	6	6	6

Generally, farmers that owned businesses and those that took farming as their full time occupation were above the sample average for all the years. This would suggest that if farmers would take farming seriously, and have the resources, more maize output would be expected.

The level of agricultural training for A1 Farmers

Table 3 shows that most of the A1 farmers had no agricultural training at all. The basic agricultural training that was looked for was the Master Farmer training from AREX. Only seven farmers in all the three districts had undergone the Master Farmer training. The agricultural training under "Other" included degrees in agriculture and training in specialised areas such as tobacco and horticulture. These were only six and they were not big maize producers.

Table 3: Effects of agricultural training on farmers' maize yields

Agric training received		Maize yield in 2006	Maize yield in 2005	Maize yield in 2004	Maize yield in 2003
None	Mean ± Std Deviation Number	8.12 ± 7.36 125	9.14 ± 6.42 125	8.56 ± 10.61 119	8.57 ± 11.20 92
Master Farmer	Mean ± Std Deviation Number	11.11 ± 3.92 7	16.77 ± 6.86 7	28.14 ± 13.03 7	38.29 ± 11.84 7
Cert-Diploma	Mean ± Std Deviation Number	28.33 ± 13.71 12	22.31 ± 4.97 12	32.85 ± 11.43 12	36.56 ± 9.46 12
Other	Mean ± Std Deviation Number	6.25 ± 1.37 6	6.50 ± 1.64 6	18.00 ± 0.00 3	5.20 ± 0.00 3

There is need for strong extension services in the A1 farming areas because farmers with agricultural training had higher output levels as compared to those that had no agricultural training at all. Other qualifications in agriculture appear to have had no significant impact on the yields by A1 farmers. Farmers with Agricultural certificates or diplomas, proved to be the best maize producers followed by farmers that had undergone Master Farmer training had high. This suggests that these two levels of training are crucial to farmers, and necessary for the nation for food security.

Maize Production in the Districts

By comparing means for the maize hectares cultivated in the in the districts, Mazowe district had the largest proportion of land allocated for maize production. Bindura and the Shamva districts followed it. Mazowe district had a faster resettlement than Shamva so farmers in Mazowe started meaningful production early. Furthermore, in Mazowe, Farmer Syndicates that were formed assisted farmers in procurement of inputs, peer education and team work on farming. It is sad to note that in Table 4, the total area under maize had been generally declining over the years. Added to this is the high standard deviation that suggests that farmers had wide differences in sizes of area allocated for maize production.

Table4: Mean range of maize hectares grown by farmers in the districts for the four years.

District		Maize hectares grown in 06	Maize hectares grown in 05	Maize hectares grown in 04	Maize hectares grown in 03

Shamva	Range	1.47 to 3.35	1.80 to 4.70	0.86 to 4.83	0.73 to 6.19
	Mean	2.4063	3.2500	2.8437	3.4583
Bindura	Range	1.66 to 4.4	2.16 to 5.02	0.94 to 5.94	0.33 to 4.77
	Mean	3.0313	3.5938	3.4375	2.5385
Mazowe	Range	2.02 to 6.04	2.44 to 4.94	1.23 to6.51	1.35 to 8.07
	Mean	4.0278	3.6944	3.8667	4.7143

Mazowe district had been above the total sample mean. For example in 2003 and in 2006, average hectares under maize in Mazowe district were 4.71 ha and 4.03 ha respectively, against a provincial sample average of 3.60 ha and 3.19 ha for the same period. Although what was important was the yield per hectare for the farmers, area under cultivation could enhance food security as it shows commitment of the farmers to the crop. While a reduction in the allocation of land for maize production could be compensated by an increase in productivity per hectare, a reduction in land under maize production is also likely to threaten food security. Table 5 was used to compare means on farmer productivity levels for the different districts.

Table 5: Average maize production per district from 2003 to 2006

District	Maize yield in 2006	Maize yield in 2005	Maize yield in 2004	Maize yield in 2003
Shamva	7.11	9.34	10.88	12.87
Bindura	8.18	9.85	10.84	8.73
Mazowe	13.64	11.94	13.72	17.46

Mazowe District had dominance in both area under maize cultivation (Table 4) and in maize output levels (Table 5). However the high standard deviation suggests the coexistence of very good maize producers and small maize producers. Added to this Mazowe has been receiving rains earlier that Shamva district, giving Mazowe advantages of early cropping than the rest of the province. It is however sad to note that in the province, there has been a decline in both maize yields and area under maize production. This might have been a result of unattractive maize prices from the monopoly of GMB or a result of competition from other cash crops such as paprika, Soya beans, sugar beans and seed cotton.

Farmer Productivity Levels

It was from the absolute figures of farmer harvests and hectares under maize that the average yields per hectare were calculated and presented in Table 6 on the next page. Averages of productivity per household per hectare for the three districts are shown in Table 6.

Table 6: Average output per farmer per hectare (metric tonnes/hectare) from 2003 to 2006.

District	2006	2005	2004	2003
Shamva	2.96	2.88	3.82	3.72
Bindura	2.70	2.74	3.18	3.18
Mazowe	3.39	3.23	3.55	3.70

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It can be noted from Table 6: that there was no significant improvement in farmer yields per hectare over the years. The productivity levels for the farmers were falling from 2003 to 2005. Marginal gains were in Shamva that rose from 2.88-t/ha to2.96 t/ha in the same period. The falling trend in farmer yields per hectare was evident even before looking at the levels of credits that were given to the farmers.

Financing Maize production

The main inputs that were available to farmers on credit were maize seed, fertilizer, fuel, tillage services and cash. Table 7 below had the summaries of what was made available to the farmers for the respective years.

Table 7: Form of assistance received by the farmers from 2003 to 2006.

Assistance	**Year 2006**		**Year 2005**		**Year 2004**		**Year 2003**	
	No.	*%*	No.	*%*	No.	*%*	No.	*%*
None	42	*28*	27	*18*	87	*58*	75	*50*
Seed only	57	*38*	90	*60*	27	*18*	36	*24*
Seed & Cash	0	*0*	3	*2*	0	*0*	3	*2*
Seed and Fertilizer	27	*18*	21	*14*	9	*6*	21	*14*
Seed, fertilizer, herbicide	9	*6*	0	*0*	0	*0*	0	*0*
Seed, fertilizer, fuel	15	*10*	6	*4*	12	*8*	0	*0*
Seed, fertilizer, tillage	0	*0*	3	*2*	15	*10*	15	*10*

It appears that seed had been the main input that was made available to farmers in all the years. By combining see only, and seed and fertilizer, these two sets of inputs appear to be the most common inputs given to farmers, and these (while fertilizer was very scarce) were available to at least 56% in 2005/6 season and 74% (with seed only at 60% and Seed and fertilizer 14%) in 2004/5 season. It was quite surprising to note that some farmers were unable to get the inputs. This was shown by the high "None" percentages of 50% in 2003, 58% in 2004, 18% in 2005 and 28% in 2006. This gives room to

suggest that some farmers did not access credits at all, or to suggest that the government was not consistent in ensuring that the same farmers were properly financed. This might explain the low maize yields as well the falling area under cultivation in some cases. In the year 2005, it appears that there had been a better access to inputs with only 18% not accessing the credit. Scarce inputs and implements that were crucial for maize production were fertilizer, fuel and tillage services. These should have been largely provided as compared to seed. Providing seed without these ancillary resources would not benefit to the farmers.

Cost of Assistance received by Farmers

Table 8: Production costs and the level of assistance received by farmers in each district

District	Farmer's average cost of production per hectare (Z$ million)	Average credit for 2006 (Z$ million)	Average credit for 2005 (Z$ million)	Average credit for 2004 (Z$ million)	Average credit for 2003 (Z$ million)
Shamva	17.97	6.81	2.94	5.88	1.50
Bindura	17.92	8.94	3.94	4.63	1.63
Mazowe	17.68	7.44	6.06	3.22	3.89
Sample Mean	17.848	7.72	4.38	4.52	2.40

The costs of the inputs were calculated using the 2006 prices. The computation of the 2006 prices was based on blend prices, a mixture of the black market prices and the government-gazetted prices, and done in agreement with estimates from AREX. This was done to make it easy for comparison and to try as much as possible to be close to the real costs of production of the farmers who had to buy their own inputs. While farmers needed almost ZWD$18 million per hectare, what was distributed was not enough for half a hectare.

However, in absolute terms, some farmers got more than ZWD$30 million worth of inputs in 2005/6 season, while some got nothing. The value of the credit scheme was highest in 2005/6, but there was no consistency in terms of credit available to the farmers. Added to this, when comparing Table 8 with Figure 1, there was no relationship between the values of the credit given with either maize hectares cultivated, average yields per farmer, or productivity per hectare. The value of the credit was also far lower than what each farmer would need to finance maize production per hectare. This is shown in Figure 1.

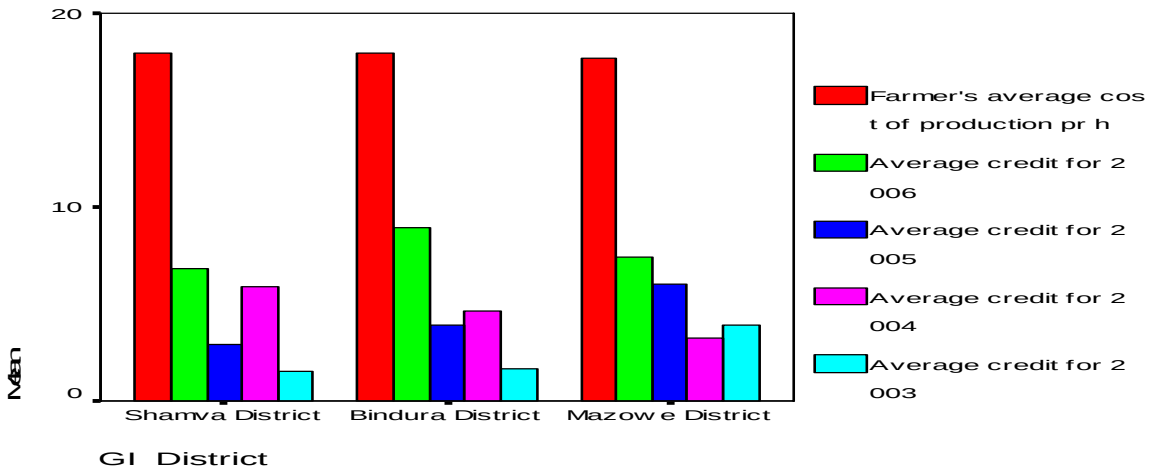

Figure 1: Total Input credit given versus the average cost of production per hectare.

The large cost drivers for the farmers came from high fuel cost sourced from the black market, high tillage costs from other farmers, high labour costs from casual labour that preferred piece rate payment system as opposed to permanent employment, and fertilizers. Fuel shortages and the resultant the high cost of transport lead to poor dissemination of information on the availability of inputs and most farmers ended up not visiting the GMB for inputs.

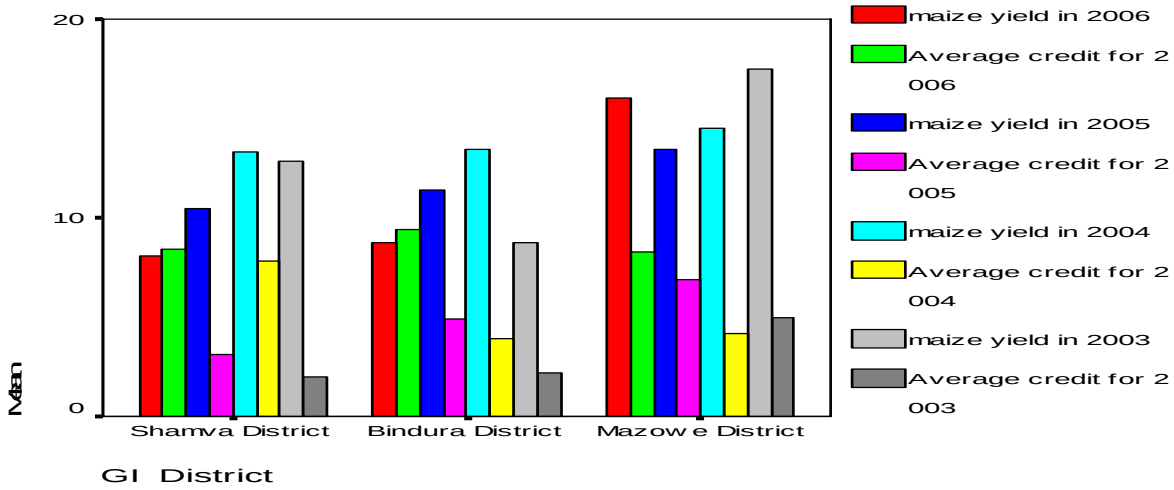

Figure 2: Maize Yields and Corresponding total Credit given

Each pair of bars gives the average maize yield per farmer and the average credit per farmer given in the same (corresponding) agricultural period of production. There is no definite relationship between the values of the credit given and the output levels. This suggests that there was no positive impact on the maize yields from the credits that were given.

This is however different when a Correlation Analysis is used. The correlations of 0.28, 0.21, 0.22 and -0.21 were discovered for years 2006, 2005, 2004 and 2003. It appears that as the value of the credit increases, was positive correlation for the province. This suggests that a stronger and adequate input credit scheme could be beneficial to both the farmers and the government. The positive correlation can only be attributed to the province as a whole, but there was no relationship between the input credit scheme and farmer yields in the districts on their own.

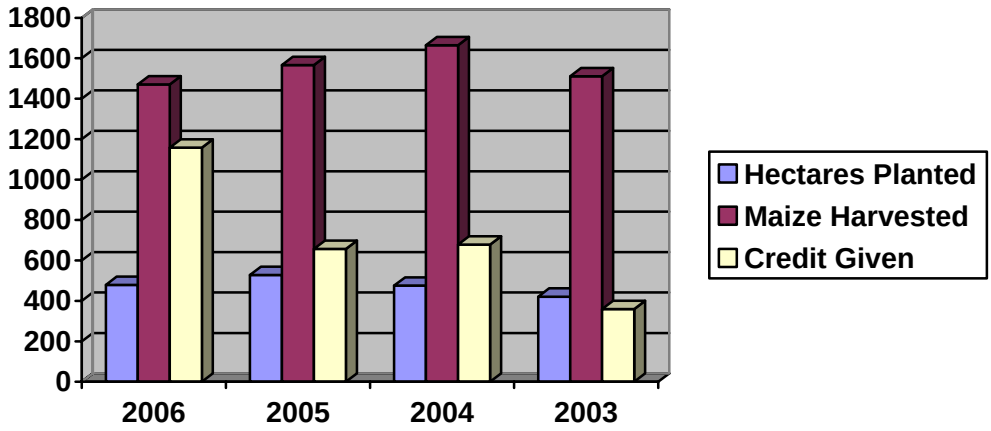

Figure 3:

The correlation for the province is uneven. For the years 2006 back from 2003 the levels are 0.28, 0.21, 0.22 and -0.21. Although there is positive correlation in the province in the last two years, it is too weak. However on a positive note, it appears the value of the correlation in agreeing to the level of credit available to farmers. This implies that if more inputs are made available to farmers, a higher yield is expected, and therefore a larger positive correlation.

Sustainability of the input credit scheme

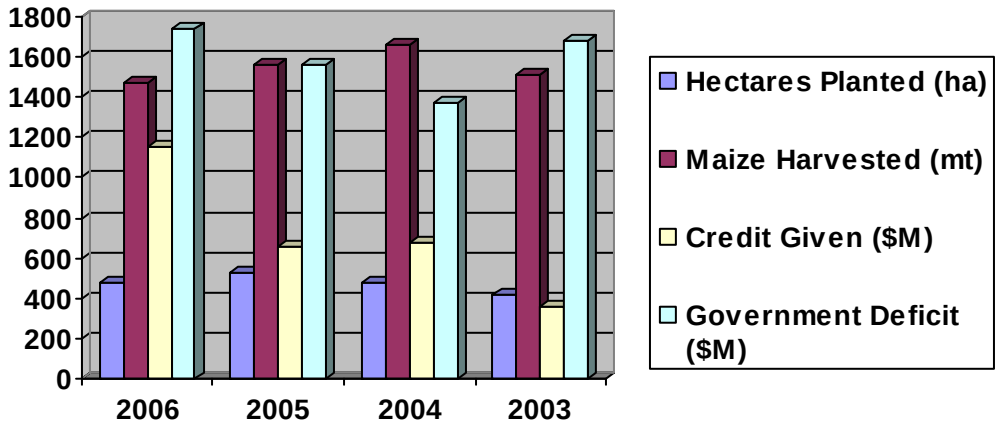

Figure 4

Conclusions

The findings of the research indicated that there was a positive relationship between the level of agricultural training of the farmer and the main occupation of the farmer with the average yield per farmer. However, on aggregation, the output in the province did not increase over the years due to the identified characteristic features. Inputs to the farmers were reportedly very inadequate, distributed late, and hardly accessible to some farmers. While access to inputs improved in the last two years, average yield per farmer and the area under maize was on the decline. The government input credit scheme did not have any positive impact on the maize yields in the districts. On aggregation, there was a weak positive correlation between the average credit and the average yields in the province for the last three years. Farmers had mixed feelings concerning the progression of the credit facility due to the low value of the credit and the distribution problems.

The government therefore has two options. The first is to continue with the credit facility and to finance it adequately and timely. This is to benefit on a positive correlation between the value of the credit and maize yields at high values of input credits. The other option, which is recommended by this research, is to leave the farming business fully to the market system and direct resource allocation to maize production through a viable producer price. It is less involving on the part of the government, and saves government resources. A viable price would make maize compete favourably with other cash crops. It becomes easy to identify genuine farmers from speculators who would want inputs for reselling in the parallel market. The research recommends for postproduction subsidies as opposed to pre-production subsidies. It is also further recommended that vibrant farmer training programs, The Master Farmer program, be available to farmers through enhanced extension services.

References

Aaker, A. D. 1980. Marketing Research Methods, 6th Edition, John Wiley & Sons. pp 164 167;

CIMITY .2003. Maize Production: New Varieties No3/2003, CIMMITY Report, Harare, Zimbabwe.

Government of Zimbabwe (GOZ). 2003. Report on Land and Agrarian Reform: Summer crop input credit loan scheme implementation framework, Government Printers, Zimbabwe.

Government of Zimbabwe (GOZ) .2003. National Budget Statement 2004, Government Printers, Harare

Government of Zimbabwe (GOZ). 2004. National Budget Statement 2005, Government Printers, Harare

Hanyani-Mlambo, B. T. 2005. Status of Farm Level Mechanisation, UN/FAO Report, Zimbabwe.

Hanyani-Mlambo, B. T. 2004. Competition and Coordination in the Cotton Industry, UZ& Wyne Imperial College, UK Report, Zimbabwe.

Hanyani-Mlambo, B. T. 2004. Review of the Zimbabwean Agricultural Sector Following the Implementation of the Land Reform, Sapes Report. Zimbabwe.

Havazvidi, J. and Tattersfield, V.T.R. 1994. New Varieties and Food Security in Southern Africa, CIMMITY, Harare.

Mazuru, N. 2005. Resettlement and Land Utilisation by A2 Farmers in Bindura, Economic Development Paper. ZES, Harare, pp18-20.

Weigner, T. 2003. Applied Business Statistics: Methods and applications. Juta and Company Ltd,

Cape Town, RSA. Pp170 – 173.

Utete, C.M.B. 2003. Report of the Presidential Land Review Committee. Volume 1; Main Report. Harare, Zimbabwe

Nabakwe Ruth July 2002 Zimbabwe's New Agriculture Policy Expected To Maximise Food Production, The Perspective, Atlanta , Georgia, www.theperspective.org

Source: ZimOnline

Date: 12 Nov 2005

Disillusionment sets in among new black Zimbabwe farmers ZimOnline 12 Nov 2005

(Beijing Time) Wednesday, October 09, 2002New Farmers Have Potential to Expand Export Base in of ZimbabweZimbabwe.