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FACTORS INFLUENCING SUSTAINABILITY REGRESSION FOR DONOR- FUNDED PROJECTS: CASE OF KUTAMA IRRIGATION SCHEME, ZIMBABWE

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ABSTRACT

The study was motivated by the sustainability regression of irrigation projects in Kutama irrigation scheme funded by the Zimbabwean government. It aimed to explore factors influencing sustainability regression for donor-funded irrigation projects as a basis for contextualized management strategies. A pragmatic research philosophy facilitated the application of a combination of qualitative and quantitative research designs. Data was collected through a seriated historical document analysis, descriptive survey, observations and focus group discussions. Purposive sampling of study site, documents, community leaders and farmers participated in the study. The study found that: in Rhodesia, irrigation projects were initiated and funded by government in an effort to fight hunger. Few farmer participants had irrigation plots. The government prescribed what crops to grow and how to grow them. Farmers had no autonomy and had problems with payment of water levies. Changes in government policies and differences between government and farmer purposes for the irrigation project affected sustainability. Kutama irrigation scheme was initiated by a government sourced donor. The donor motive was hunger alleviation, government motive was mobilization of political support and beneficiaries considered it as their reward for voting president Robert Mugabe. Difference in participant motive resulted in donor withdrawal. The political motive awarded irrigation plots to old (minimum age 40) political activists whose interest and knowledge in farming was not considered. They grew all sorts of crops. Lack of marketing knowledge, funds for maintenance and repair of pipes and roads affected their income from farming. One by one, farmers turned to buying produce from capital city markets for resell to motorists on the road. That left nobody producing from irrigation plots. The study recommends a meritocratic award of irrigation plots.

Key Words: Donor-funded, irrigation projects, Kutama, sustainability regression.

1. INTRODUCTION

The sustainability of donor-funded irrigation projects after the departure of the donor agents is in the heart of project sponsors. Donors would not make large investments in irrigation projects knowing that these projects would fail to positively influence the livelihoods of the local communities. Thus, sustainability of donor-funded irrigation projects takes centre stage during project planning. Sustainability implies the ability of all stakeholders to the donor-funded irrigation project to benefit from the project in the long-term in a sustained way (The World Bank, 2016).

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In Zimbabwe the majority of communities between 70% - 80% people live in rural areas which are mainly located in Natural Regions (NR) III, IV and V, (Mutambara *et al*. 2017). Nhundu and Mushunje (2010: p. 23) declare that these natural regions receive "inadequate rainfall which ranges from 550 mm – 700 mm for NR III, 450 mm – 600 mm for NR IV and less than 500 mm for NR V." Makombe and Sampath (1998) cited in Mupaso *et al*. (2014, p 189) share the same sentiment that Zimbabwe's "rainfall is erratic, unreliable and insufficient as only 37% of the country receives adequate rainfall for sustainable agriculture." Erratic, unreliable and subnormal rainfall in Zimbabwe is influenced by climate variability and change. As a result the country experienced several droughts over the years. According to Mosello *et al*. (2017) irrigation development was viewed as one of the strategies to mitigate the effects of climate variability and change in Zimbabwe. Rukuni and Makadho (1994) cited in Mutambara and Munodawafa (2014) view irrigation development as a special agricultural development initiative in which technology is used to provide soil moisture to achieve a high standard of continuous cropping.

According to Maiyaki (2010, p 4159) "agriculture is the backbone of Zimbabwe's economy and underpins the economic, social and political lives of the majority of the people of Zimbabwe." However, Nangombe (2014) reveals that twenty-two droughts had been experienced in Zimbabwe between 1951 and 2014. The devastating droughts resulted in most rural communities experiencing hunger. In view of that Morales and Mangcopa (2008) and Chiroro (2015) cited in Mosello *et al*., (2017) concur that small-scale irrigation is key to improving agricultural productivity. Chibisa *et al.* (2008) added that, irrigation farming became unavoidable. Irrigation projects increased crop yields thereby alleviating hunger, create employment for the surrounding communities as well as raising income for the irrigators.

According to Nhundu and Mushunje (2010, p. 1) previous governments of Zimbabwe viewed the development of irrigation as the only gateway to increased agricultural output, sustainable water management and land productivity. To that end irrigation based efforts to alleviate hunger and eradicate poverty took centre stage in Zimbabwe. For instance, small-scale irrigation projects such as Nyanyadzi irrigation project in Manicaland province, Mushandike irrigation project in Masvingo province, Mkoba and Silalathsani irrigation projects in Midlands province, Gatshe Gatshe irrigation project in Mashonaland West province and Tshongokwe irrigation project in Matabeleland North province were developed. Their functional history is clouded with collapse.

Statement of The Research Problem

The unsustainability of Kutama Smallholder Irrigation Projects (KSIP) in Zimbabwe led to the collapse of the project. The collapse of KSIP resulted in the beneficiaries and the local community's livelihood being negatively affected. Several smallholder donor-funded irrigation projects were established throughout the country. Most of the donor-funded irrigation projects in Zvimba district and Zimbabwe in general failed to sustain themselves following the withdrawal of donor agents leading to their collapse.

Considering the huge investments made into smallholder irrigation projects, it is alarming to note that "only 38% of Zimbabwe's smallholder irrigation schemes were found functional in 2013,

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40% in 2014 and 21% in 2015" (Mutambara *et al* 2017, p 498). These figures could have increased by now (2019).

Thus, there exists scant published information on the factors which influenced the sustainability of Kutama smallholder irrigation projects in Zimbabwe. This donor-funded irrigation project management gap motivated this study to establish the factors which influenced the sustainability of Kutama smallholder irrigation project in Zvimba district. Such intervention is an important contribution to the management of the donor-funded irrigation projects.

Research Questions

This study answers the following research questions:

a) What factors influenced the sustainability of small scale irrigation project?
b) How did the factors influence the sustainability of Kutama smallholder irrigation project?
c) How can smallholder irrigation projects be managed to ensure their sustainability?

Significance of Study

This study is important in that it seeks to improve the management of small-scale donor-funded irrigation projects. It contributes specific factors which influenced sustainability as a basis for donor-funded projects. Study raises insights for literature on the management of sustainable donor-funded irrigation projects.

2. REVIEW OF RELATED LITERATURE

Irrigation projects regression history

The development of irrigation projects in Zimbabwe backdates to the pre-colonial era, 1912 to 1927 which was referred to as the period of "incorporation into indigenous agriculture" (Roder, 1965 in the Rukuni, 1986:33).The genesis of irrigation development projects was in Manicaland province, where missionaries had the opportunity to learn how the indigenous communities performed their irrigation farming. At this stage, understanding and mastering the indigenous technical skills was paramount.

Roder (1965) and Mombeshora (2003) concur that Mutambara irrigation project was developed to avert famine. Hence the famine motivated community buy-in which ensures total stakeholder commitment and ownership of the project (Burke, 2007). Water was moved from the source and flooded into the fields via furrows dug on the ground. A lot of water was lost in transit through evaporation, seepage and run off.

In 1927 Rhodesia government took a giant and bold step to appoint Emery Alvord as the agriculturalist in irrigation for the Instruction of Natives development (Rukuni 1986). Alvord participated by helping Mutambara project beneficiaries to improve on the project's productivity. In this case, he acted as an external expert in agricultural production. Beneficiaries of the project continued to have more say as a strategy to enlist their co-operation. The farmers remained in control of their irrigated land without government interference. The approach helped in

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developing a sense of project ownership which was critical for the sustainability of the irrigation project.

The government non-interference policy was changed in 1933, when it took over the management of Mutambara irrigation project (Rukuni, 1986). It contributed funds, resources and introduced compulsory crop rotation. The farmers opposed these initiatives because they had constructed the project through their own communal effort before the 1930s. As such the farmers argued that they owned the plots and were supposed to have more say or control on them. Not to be outdone, the government argued saying as the major contributor of funds and resources it was mandated to manage the projects. The government's view was to increase productivity from the project. Government support enabled farmers to meet the costs of improving the furrow canal systems, the irrigation project inputs (such as seeds and pesticides) as well as operation and maintenance.

The differences raised conflict between the government and the beneficiaries. Consultation with the stakeholders became a thing of the past. The indigenous people were no longer consulted in the development processes. They were told what to do and how to do it by government employees (the DO MAN). Mombeshora (2003) concluded that the government takeover of the Mutambara irrigation had negative impact, as the farmers' cooperation with the government fell to its lowest ebb.

During the 1950s the Rhodesian government used power cohesive model of agriculture policy implementation to alleviate famine. Hughes (1974) cited in Rukuni (1986:54) claims that the government also imposed water rent of 5 shillings per acre and later doubled it to 10 shillings. The stance taken by the government fuelled the already existing tensions between the government and the people. Farmers viewed themselves as employees or forced labourors.

The introduction of water rent enabled the government to recover some costs incurred in providing the water. However, the indigenous people saw water as a God-given natural resource which they were entitled to at no cost at all. As a result, government's action heightened the animosity between the two stakeholders thereby affecting the sustainability of the irrigation projects negatively.

The aftermath of the Second World War II saw an intensified government drive of expanding Manicaland irrigation projects to resettle peasant farmers to designated African Reserves (Rukni 1986). The 1930 Land Apportionment Act resulted in the partitioning of the country into black and white designated areas. Rukuni (1986) posited that the amendment of the Land Apportionment Act in 1950 resulted in black farmers being forced to move to their designated areas within a five-year period. This government policy of moving Africans from fertile lands to reserves aggravated the conflict between government and the indigenous people. In fact, the land issue is more political than economic. In this case, the movements had negative results for the sustainability of the irrigation projects.

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The amended 1950 Land Apportionment Act introduced new technology from gravity systems to water pumping systems. Surface irrigation which is "the supply of water by gravity from the water source through canals, pipes or ditches to the field" came on board (Bjorneberg, 2013:p 1). Although more land was irrigated, surface irrigation projects were rather more expensive to operate than the gravity projects. For example, the Nyanyadzi irrigation schemes became very unpopular because it was very expensive to construct, operate and maintain. As such, agricultural productivity fell dismally. The Department of Native Agriculture was compelled to revisit its irrigation development programme.

According to Walker (2003) surface irrigation requires minimal capital investments. Furthermore, it uses uncomplicated, inexpensive equipment for conveyance and distribution. On the other hand, Walker (2003) argues that surface irrigation is less efficient in application of water in the fields, easily affected by water logging and salinity challenges as well as high land leveling costs. In addition to that, a SAI Platform (2009) proffer that about 50% of the water is wasted through evaporation and is not used by the crops.

In 1957 the Rhodesian government engaged an economist to assess the viability of the small-holder irrigation projects. Hunt (1958) reveals that all the small-holder irrigation projects were concluded to be uneconomical. Surprisingly, the economist did not offer reasons for taking such a position. In addition no management strategies were recommended to improve the operations of the irrigation projects. The attitude of the economist revealed a perpetuation of bad blood between the government and the farmers. As a result the sustainability of these smallholder donor-funded (government) irrigation projects continued to suffer major blows.

In 1960 an Irrigation Policy Committee was put in place to come up with a strategy of using irrigation projects as a means of resettling black farmers. The Irrigation Policy Committee Report of 1961 cited in Rukuni (1986:35) recommended that:

a. Irrigation was not the best way of settling displaced farmers. The population pressure in black areas was temporary and would slacken as more found employment in white farms.
b. It would be more productive for government to invest in industrial sector than irrigation.
c. Future projects should be based on voluntary agreement where settlers will be able to meet the cost of construction, operation and maintenance.

According to Rukuni (1986) and Mombeshora (2003), the 1961 Irrigation Policy Committee Report recommended the economic empowerment of indigenous farmers through irrigation projects. Since a few blacks were entitled to irrigation projects, the majority were expected to seek employment in white farms and in the industrial sector. A critical eye shows that, the majority of blacks were to be turned into mere labourers. In addition to that the report was against construction of irrigation projects for the indigenous people by recommending that they should foot the construction, operation and maintenance costs. The costs required for the development of irrigation projects were out of reach for the indigenous people. This led to the

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cessation of construction of new irrigation projects by government between 1960 and 1968 (Rukuni 1986). We can safely note that, sustainability was affected by racial discrimination and development of master servant economic relationship.

After the 1965 Unilateral Declaration of Independence (UDI), irrigation projects were developed by the Smith government in Communal Lands (then Tribal Trust Land). The government established the Tribal Trust Land Development Corporation (TILCOR) to develop growth points based on irrigation. The growth points were to serve as the market for the developed irrigation projects. For example, irrigation projects established after UDI by the government were Chisumbanje (1966), Silalathsani (1967) and Mkoba (1968). However, Mombeshora (2003) argues that the establishment of TILCOR failed to make a positive impact on irrigation projects due to inadequate budget allocations to TILCOR by the government. Thus, inadequate budget allocations led to stagnation of irrigation development there by failing to achieve the development of growth points based on irrigation agriculture in communal lands.

After independence in 1980, the new Zimbabwe government adopted an economy based on agriculture. Chenje *et al*. (1998) in Mpala (2016: p 29) claims that agriculture was declared the backbone of Zimbabwe's economy. Irrigation development became a major priority in combatting the effects of periodic severe to extreme droughts of 1982/3; 1991/2 and 2002/4 seasons. The Zimbabwe government merged TILCOR and Sabi Limpopo Authority to create Agricultural and Rural Development Authority (ARDA). Its mandate was to superintend government irrigation projects in the country. The merging of the two authorities positively influenced the creation of a pool of irrigation experts and equipment for irrigation development. However, ARDA's point of reference did not spell out how the irrigation projects were to be managed. Absence of clear terms of reference resulted in mediocrity irrigation operations in which farmers had little say.

The development of small irrigation schemes flourished after independence in Zimbabwe's communal areas (Mpala, 2016). For example, irrigation projects established in different provinces include Gache Gache in Mashonaland Province, Chikwalakwala in Matabeleland South, Manjinji and Mteyo in Masvingo Province. Also, Mombeshora (2003) revealed that the concept of irrigation management committees to run the affairs of the irrigation projects was introduced, but there were no specific guidelines on how they were to be formed. Thus, the indigenous people were once again being given more control and say over the day to day activities of the irrigation projects.

The establishment of Irrigation Management Committees was a positive development as it generated project commitment and ownership among the farmers. They became involved in decision-making. However, lack of guidelines on the formation of irrigation project committees created loopholes in the competencies of those to be selected as members. The literate and the illiterate had equal opportunities of being members of the irrigation management committee. These were farmers who had low levels of education, specifically agriculture. Furthermore, there was much debate on whether the government should continue subsidising the farmers.

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Mombeshora (2003) reports that from 1991 – 2000 the government adopted the Economic Structural Adjustment Programme (ESAP) which removed subsidies on agricultural inputs including water as a measure to reduce its budget. In addition Jeong (1998) in Kawewe and Dibie (2000) explains that ESAP eliminated price controls, cut subsidies to prices of basic goods and services, engaged in free trade and devalued local currencies. Tekere (2001) suggests that the removal of price controls ballooned producer prices, benefiting agricultural communities who had access to markets and ability to shift into alternative cash crops. The smallholder irrigation farmers were still incapacitated in accessing markets and shifting to alternative cash crops. Tekere (2001) and Mombeshora (2003:11) concur on the fact, that the significant results of ESAP were price increases of farm inputs and electricity charges for pumping water at irrigation schemes. The irrigation farmers could not afford these new prices thereby affecting productivity as the land put under irrigation greatly decreased.

During the 2000 – 2002, fast track land reform programme, commercial farms were subdivided into A1 and A2 farms for resettlement purposes. According to Mosello *et al*. (2017) the official goal of the fast track land was to divide commercial farms into thousands of small plots for traditional black farmers. Mapuva (2015) concluded that, the fast track land reform programme aggressively addressed the colonial land imbalances which white settlers had curved for themselves. The land reform programme had negative effects on the country's agricultural prowess as productivity declined. The exercise moved irrigation project farmers from the land they were using to a new land with undeveloped irrigation. Thus, then existing irrigation projects was negatively affected.

The declining macroeconomic contexts of the 2000s greatly affected negatively the agricultural sector and irrigation development in particular (Mosello 2017). Mugabe *et al*., (2013) cited in Mosello *et al* (2017: p76) pointed out that government deficits, unscheduled payments to war veterans and the cost of military involvement in Democratic Republic of Congo impacted negatively on the per capita GDP which declined by 50% between 1997 and 2008. In addition inflation which was at 500% and the devalued Zimbabwean dollar also took their toll on per capita GDP (Mosello *et al*., 2017). Richardson (2005) cited in Mosello *et al*. (2017) further adds that the shortage of capital and the failure of the Zimbabwe government to enforce land titles deeds led to the collapse of several banks. Finally, Mosello *et al*. (2017: p. 28) said Zimbabwe fell out with the international financial institutions and donors thereby reducing or suspending the development aid.

In view of that, the development of irrigation projects came to a halt as there was no capital to finance them. Richardson, (2005) cited in Mosello *et al*. (2017: p. 28) suggest that commercial farmers immigrated to countries such as Zambia, South Africa and Ghana, "taking their knowledge of farming practices with them." As a result, the deteriorating economy incapacitated the farmers' ability to procure farm inputs and equipment thereby reducing productivity. Lack of adequate knowledge and resources for maintenance plunged many irrigation projects throughout the country into disrepair.

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The smallholder farmers were introduced to sprinkler irrigation which can be used on steep slopes, uneven ground and can be employed on different types of crops (FAO (2002). Its labour requirement is low and water is spread evenly on the irrigation field. Bjorneberg (2013) adds that water application is more controlled, plants are protected from frost and dust is controlled when sprinkler irrigation is used.

However, FAO (2002) was quick to point out that, sprinkler irrigation has high operational and maintenance costs for the pump and equipment. The effectiveness of sprinkler irrigation is affected by high winds. Subsequently, sprinkler irrigation has more significant water loses to evaporation, runoff, transpiration, leakages, operational and windy drift. Its' high costs can scare off rural smallholder irrigation project farmers.

2. RESEARCH METHODOLOGY

Research Design

The study explores factors which influence the sustainability of donor-funded irrigation projects in Zimbabwe. It was guided by the pragmatist philosophy which facilitated the triangulation of qualitative and quantitative methods for study validation. The study design was a seriation of historical descriptive survey funneling to a case study of Kutama smallholders irrigation scheme in Zvimba district.

Historical research contributed significantly by tracing the establishment of irrigation projects from 1927, in order to identify factors that have influenced its developments and sustainability. In historical studies, researchers are limited to available sources. White (2005) requires that researchers interpret the meaning of a document in order to draw conclusions. Validity of data for this study was based on the concurrence of two or more authors. Historical knowledge is invariably incomplete, since it is derived from the surviving data of a limited number of events.

A descriptive survey depicted the present situation of irrigation projects. Kumar (2011) suggests descriptive surveys due to their ability to combine interviews, observations and inference during data collection. The case study of Kutama Smallholder Irrigation Project offered the opportunity to undertake a thorough, holistic and in-depth examination of the factors which influenced the sustainability of Irrigation Projects. Kumar (2011) encourages application of a case study when exploring an area where little is known. Case study was critical for an in-depth understanding of how contextual factors influenced the sustainability of irrigation projects in Zimbabwe.

Population and Sampling

The population of this study consisted of documents on the history of irrigation projects in Zimbabwe. All community members who were involved in Kutama irrigation projects as participants or customers were part of the population. The goal- free model requires researchers to collect data of anything and anyone who has the information. To that end, purposive sampling of 9 community leaders, 7 Agritex officers and 55 beneficiaries of Kutama irrigation project participated in the study. Their inclusion criterion was being rich sources of factors influencing the sustainability of donor-funded irrigation, being available and willing to participate. Community leaders were involved because of their influential roles in rural community projects.

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Agricultural and Extension officers also took part as government employees with technical expertise in agricultural and irrigation activities.

According to Marshall and Cardon (2013), there are no fixed rules governing sample size in pragmatism oriented research studies as that depends on what the researcher needs to know. Furthermore, the aim of the inquiry exploring factors influencing sustainability needed no numeric sample size. Sampling was carried out up to variable saturation point (when no new factor seemed to appear).

Research Instruments

The main research instruments were the documents, observation and interview guides and the questionnaire, designed by the researchers to collect primary data. Researchers by being observers identifying what to record, were also the main research instrument (Chinamasa, 2014). These instruments were pilot tested to remove the bugs under the bed, as the process helped to ascertain their clarity and usefulness. The questionnaire had closed-ended demographic questions and open-ended items for insights. The interview guide utilized structured open-ended questions which centred on when the project was formed, the challenges the farmers faced and the factors which led to the collapse of Kutama irrigation project. The questionnaire and interview guide items were written in the vernacular language to expose the participants to the same language conditions.

Data Collection

Data collection was initiated by seeking permission and participation from community leaders, and Zvimba Rural District Council, the responsible authority. The questionnaires were distributed in person whilst informing the intended respondents that they would be collected on the following day. The survey method was used because it enabled us to administer the questionnaires on a single day, thus reducing costs as the study was self-financed. Primary data was collected through the questionnaire, interviews and focus group discussion. The use of the questionnaire exposed the respondents to the same conditions of the absence of the researchers, thus taking care of bias elements.

The researchers made appointments with the intended interviewees, two days prior the interview date. Armed with the interview schedule guides and two fully-charged phones for recording, we visited the prospective interviewees on the appointment dates and sought permission to record the interview sessions. The interviews helped us in collecting the main qualitative primary data. Also, the interview sessions enabled us to benefit from the various forms of facial and body language gestures exhibited by the interviewees. In addition, we were also able to seek clarity on some issues raised in the completed questionnaires.

Data Analysis and Interpretation

We checked for completeness and answering of all key questions of the questionnaire. Then we coded answers to research questions themes to guide in the collating of responses from the research instruments. We identified common factors, and deviant cases as emerging themes. We presented quantitative data in descriptive statistic using Stem and Leaf diagram to preserve the identity of each age entry. The identification of outliers, mean and standard deviation assisted in

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summarising data. Tables and graphs portrayed in summary the statistical exactness of findings. Qualitative data is presented in thematic format and pictures. In addition pictures helped to portray reality.

3. FINDINGS AND DISCUSSIONS

Table 1: Kutama Irrigation plot Beneficiaries' Age Distribution N= 57

STEM	LEAF													
2	0	5												
3														
4	0	0	1	7	8	9								
5	0	2	3	4	5	6	7	7	8	9				
6	1	2	2	2	3	3	4	5	7	8	8	9	9	
7	0	3	4	5	6	7	7	8	8	8	8	8	9	9
8	0	1	2	3	3	4	5	6	7	7	8	9		

Key: 8 |6 = 86

Table 1 show that the majority (68%) of the farmers, are in the 60 to 89 age groups. There are two outlier cases, 20 and 25 year olds. However, all the participants were adults (above 20), mature, reliable rich sources of information. The modal age is 78, mean of 66.5years. Participants were above the age of physical fitness for manual work. There is too wide an age gap (standard deviation 15.8 years) for social sharing of farming skills. Interviews revealed that, participants joined the irrigation schemes as their only source of income. They were unemployed elsewhere and most of them were retired civil servants. The 20 and 25 year olds were children of two prominent politicians who also had irrigation plots. All the farmers supported the ruling political party. They were allocated irrigation plots during the project conception stage at different political forums.

Table 2: Farmers' distribution by Gender and Experience N = 57

	Experience in years				
Gender	0	1	2	3 and above	**Total**
Female	2	3	2	6	**13**
Male	6	8	12	18	**44**
Total	**8**	**11**	**14**	**24**	**57**

Table 2 reveales that the majority of the respondents (77.2%) were men. This shows that men dominated the activities in the irrigation project. The gender disparity could be accounted for by the cultural belief that men are the owners of the land in Zimbabwe's culture (Mararike, 2011). Also, men are more active in political activities than woman, that could also have given them more access. The majority (42%) of farmers had previous experience at the time of joining the irrigation project. The project beneficiaries possessed valuable knowledge from experience

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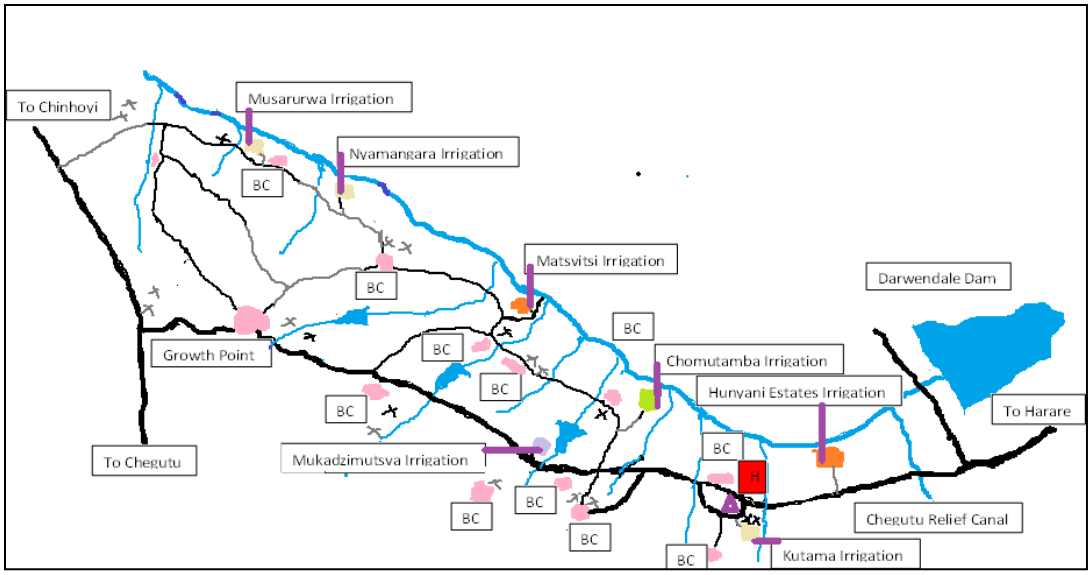
which could enabled them to sustain the irrigation farming and also assist the inexperienced farmers through social interaction.

Table 3: Distribution of Respondents by Qualifications (N = 8)

Qualifications	Frequency	Percentage	Cumulative Percentage
Standard 6	39	68	68
Grade 9/ ZJC	11	19	87
Grade 11/ O level	7	13	100

Table 3, display that the majority of the participants (68%) had standard six qualifications. All the participants were literate and able to complete the questionnaire without the assistance of the researchers. They were capable of reading and understanding the instructions on how to apply different pesticides and herbicides during practical irrigation farming to ensure sustainability.

Figure 1: Case Study Site: Kutama Irrigation Scheme Map



Key: (Not to scale)

Dam
BC,Business Centre
Major river
Small river
Gravel roads
Collapsed irrigation KSIP
Unconstructed irrigation KSIP
Functional irrigation KSIP
Mukadzimutsva irrigation
Tarred roads
School
President's Residence
Hospital

Source: Authors.

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Figure 1 shows the location of Musarurwa, Nyamangara, Matsvitsi, Chomutamba, Kutama, Mukadzimutsva and Hunyani Estates irrigation projects which constitute the Kutama Irrigation scheme. Of the seven irrigation projects in Zvimba district only Chomutamba is functional. There are 7 [BC],Business Centres which were expected to be the markets for the produce from the irrigation projects.

Kutama Irrigation scheme was managed by the Irrigation Management Committee which comprised of the chairperson, vice-chairperson, secretary, vice-secretary, treasurer and committee member. It was assisted in managing the irrigation project by three committees namely the Water Committee, Marketing Committee and Disciplinary Committee. All these were elected into office by a majority vote not farming expertise. We concluded that, application of political instruments in economic endeavours does not yield economic productivity.

According to Zawe (2006), a Japanese donor sourced by former president of Zimbabwe, Robert G. Mugabe initiated the project in response to the 1992 drought. Farmers said the irrigation project was initiated as their share of the land redistribution to raise income and get nutritious food. As a result there was total resentment to the introduction of a water fee for the maintenance of the irrigation project infrastructure. The irrigation projects' transformer was vandalised by thieves who stole the oil and cables which supplied power to the water pump. Zimbabwe National Water Authority's refused to release water into the river, citing huge debts owed by the irrigation project. None of the beneficiaries has title deeds for the irrigation plot. That omission discouraged farmers from investing in the irrigation project infrastructure leading to its deterioration.
There are two main tarred roads which service Zvimba district. Murombedzi-Harare road is well maintained and busy, it passes near the residence of the former president of Zimbabwe Robert G. Mugabe (see figure 1). It provided a ready market for farmers who moved to the road to sell their vegetables and fruits, leaving nobody to till the land. Irrigation plot production deteriorated.

Gravel roads leading to irrigation project are not maintained due to lack of funds. Researchers had to endure gulleys on the access road shown in figure 2 below.

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Figure 2: Road with gulleys to Musarurwa irrigation project.

Source: Photo taken by researchers in the field.

Rola-Rubzen *et al.* (2011) confirm that farmers in rural areas are subjected to poorly maintained agricultural infrastructure to main market centres. As a result, buyers of produces and transporters found it difficult to get to the irrigation project site for cheaper and fresh products. Hence individual farmers had to ferry their produce on bicycles and scotch-carts to the tarred road and wait for potential customers. The mode of transport affected the freshness and price.

Figure 3 show that all the farmers grew the same crop varieties within a single cycle. This increased their competition for limited market, which resulted in them accepting low prices for their produce.

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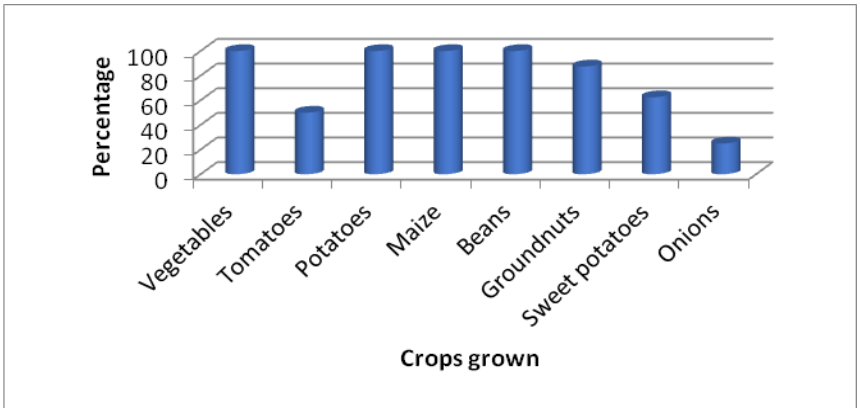
Figure 3: Crops grown by the irrigators (N = 8)



None of them grew cash crops like cotton and tobacco. Although maize was grown, it was on a small subsistence scale to alleviate hunger (the president's aim). Farmers' failure to meet the president's target discouraged him from funding it.

4. CONCLUSION

This study concluded that, donor-funded irrigation projects fail due to:
(1) differences between donor and beneficiaries perceptions of the needs of the project. We recommend that, donors can market the problem for co-ownership and cooperation. Train beneficiaries for psychological re-orientation and focus.
(2) Limited local management skills by Irrigation Management Committees (IMC). We recommend a meritocratic allocation of irrigation plots to include the youth. The screening criterion can be, shown interest in farming, having basic literacy and being prepared to learn.
(3) Lack of farmer commitment to irrigation projects as a profession. We recommend orientation through visits to successful projects and offer of technical support by skilling locals.
(4) Instill a sense of self-reliance through repayable loans for the members. They can create a pool fund as joining fees and borrow from it. The accrued interest belongs to the group and can be used to pay for common bills such as road and pipe maintenance and elactricity .
(5) Inclusion of local security by forming neighborhood watch committees paid by contributions from plot owners.
(6) There is need for group buying of inputs to reduce inputs and transport costs and group marketing to reduce produce transport costs and increase their bargaining power for higher producer prizes.

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