CHALLENGES FACING COMMERCIAL FARMERS IN AN INFLATIONARY ENVIRONMENT IN ZIMBABWE

By:

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DECLARATION

I **Alexio Chipfunde** declare that the mini-dissertation hereby submitted to the University of Limpopo for the degree of Master of Business Administration has not been submitted by me for a degree at this or any other University; and that it is my own work. The sources that I have used or quoted from have been indicated and acknowledged by means of complete references.

A. Chipfunde (Candidate)

Date

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Date

Dedicated to:

My uncle, Nicholas Chipfunde and mother Laina Chipfunde posthumously, for the wonderful and sterling job they did to prop me up to where I am today. I say to them, rest in peace; I am fulfilling your wishes.

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CHAPTER ONE: OVERVIEW OF THE STUDY

1.1. Introduction

In Zimbabwe from independence up to around the year 2000, agriculture provided employment and income to 70% of the population, together with 60% of the raw materials required by the industrial sector (United Nations, 2006). The sector earned more than 60% of the country's total foreign currency earnings annually, contributing between 15% and 19% to annual gross domestic product depending on the rainfall patterns (Muziri in Makamure, Muzuwa and Jowa, 2001).

Since the government adopted the landmark economic reforms prescribed by the International Monetary Fund in early 1990, amended the land policy in 1992 for the second time from the 1985 initial amendment and the adoption of the Land Acquisition Act in 1997 and implemented the controversial Fast Track Land Reform Programme, the Zimbabwe's economy has gone into freefall (United Nations, 2006). This has been characterized by trade deficits and high inflation rates, deindustrialization, the fall in the gross domestic product by 17%, a two thirds drop in real wages, accompanied by increased job losses in both public and private sector. The economic scenario was exacerbated by the launch of the controversial Fast Track Land Reform programme in the year 2000. The land reform programme was a big blow to the agriculture sector in that the major player in the sector, namely the commercial farming area was the most affected. Commercial farms were invaded and occupied by the war veterans, war collaborators and landless villagers and subsequently taken over without compensation. These not many farmers whose farms were not taken over, still were disadvantaged by having their title deeds to the farms suspended in line with the Land Acquisition Act adopted in 1997(Muziri,2006).

Furthermore, the government's monopoly on cereal imports and local trading and the HIV/AIDS pandemic have exacerbated the commercial farmers' business situation. This is worsened with the unequal trade terms with developed countries under the banners of bodies such as World Trade Organization (WTO) and European Union (EU) have contributed to the situation in which the commercial farmers are in Zimbabwe today.

The commercial farming area has been a major player in the agriculture sector of Zimbabwe before the launch of the land reform programme in 2000.The commercial farms were basically involved in the production of both grain and industrial crops for sale in the local and

international markets, thereby earning the country much needed foreign currency. The centre stage which was played by commercial farmers was facilitated and enhanced by the then agriculture policy which was in favor of commercial farming to the detriment of smallholder farming (Muziri, 2006). Today, the agriculture policy is the opposite; it is in favor of smallholder farming sector.

Pre- land reform, government to entice commercial farmers, all agricultural institutions were tailored to their preferential disposal. The institutions include:

(1)Agriculture Research and Technology

(2)Agriculture Extension Services

(3)Veterinary Services

(4)Agricultural, Education and Training

(5) Financial Services.

However, today all the above mentioned institutions are targeted to the smallholder farmers to the minimum attention of the commercial farming sector. To worsen the situation, most of these institutions face a host of problems and constraints which include budgetary constraints, lack of qualified and experienced personnel, lack of information capacity to scientists to keep abreast with international developments in areas of expertise and poor co-ordination and planning policy (Makunike, 2006)

Among other challenges, commercial farmers are facing is the issue of security of land tenure which has not been conclusively resolved, although some farmers are still holding on to their title deeds. As such, long-term farm management decisions, which form the bedrock of farm sustainability and growth, are now difficult to make owing to insecure tenure. To exacerbate the whole situation, over the land reform transition period, the country suffered general economic decline, which resulted in the substantial fall in the value of the currency of the country, acute shortage of foreign currency, shortage of labor due to exodus of qualified and experienced personnel to neighboring countries and abroad, shortage of agricultural inputs and serious scarcity of fuel and electricity blackouts. At the other extreme end, the HIV/AIDS pandemic imposed an enormous cost on commercial farmers and institutions due to the diversion of funds to pay for health care and funeral costs, employee absenteeism, cost of recruiting and replacing staff and the loss of healthy and skilled and experienced personnel(Makunike,2006).

Furthermore, since commercial farming sector relies much on electricity, the decimation of Zimbabwe Electricity Supply authority (ZESA) due to vandalized transformers and high copper wire theft, farmers do not have the much needed source of power. As such there is wanton destruction of vegetation due to scarcity of paraffin and electricity. In the same line there is also lack of support services (ambulances, post telecommunication and police.) in the commercial farming community. To compound the challenges and constraints in commercial farming the following are prevalent, impossible long term planning, lack of operational budgets ,education dysfuctionality since teachers are leaving the country in large numbers to neighboring countries and abroad, non- availability of irrigation fund to finance irrigation activities since Agricultural finance corporation (AFC) is bankrupt. To this end, government exchange control has also adversely affected timing of agricultural activities and fuelled foreign currency shortage. It is also difficult for commercial farmers to access Foreign Currency Accounts (FCA) managed and controlled by the central bank of the country. Also farm workers are leaving the farms due to dwindling living standards on the background of the poor salaries/wages.

1.2. Statement of the problem

Zimbabwe used to be known as the bread basket of southern Africa due to its extensive commercial agricultural capacity and potential. Commercial farming had been one of the major power engines of Zimbabwe's economy to the foreign direct investment (FDI), tourism and mining. Farmers used to be incentivized a lot through subsidies, loans and writing off of the loans in the case of natural disasters such as floods and drought. Furthermore, commercial farmers used to be prioritized in terms of all the necessary farming business provisions which include inputs in all aspects (Moyo, 1995). In the same vein, commercial farming sector used to be a big employment market to the rural population of Zimbabwe and, with forward and backward linkages to the rest of the country.

Today commercial farming business in Zimbabwe is struggling in all its spheres of viability. The spheres include low profits/incomes which means not enough money to plough back to expand production and little money from the government to provide services(police, ambulances, water ,telephones and medication), dwindling production levels, inability to sustain production levels

(2) What is the trend of inflation in Zimbabwe?

(3) What is the impact of inflation on commercial farming sector?

(4) What is the production trend of grain and industrial crops in Zimbabwe from 1993-2007?

(5) What strategies commercial farmers in Zimbabwe are using to sustain operations?

(6) What lessons can be learnt from the inflationary situation of Zimbabwe

(7) What can the government do to curb inflation in Zimbabwe?

1.6. Motivation of the study

The main motive behind this research was triggered by the emergence of sharp downfall in Zimbabwe agriculture production that started in 1996 when the inflation started to rise.

1.7. Significance of the study

The study aims to provide understanding on impact and responses to inflation for academic literature and also help development practitioners with ideas for land reform programme and policy makers not to be swallowed by political motives, and will also be helpful to countries like South Africa and others involved in land reform programs.

1.8. Definition of concepts

Inflation

According to Swanepoel and Van Zyl (1994:273) inflation is a sustained and considerable increase in the general price level as a result of monetary causes and simultaneous decline in the buying power of money.

Exchange rate

The price of the currency of one country expressed in terms of the currency of the country e.g. on 24 January 2006 Z$10 000/ 1 USD (Swanepoel and Van Zyl, 1995).

Strategic management in farming

Strategic management is the integration of all business functions of the farm business, so that the total farming system is managed proactively and in harmony with internal and external environment (at business and macro levels) to achieve the strategic vision and long-term goals of the farming business (Van Zyl, 1999).

Low standard of living

This is generally in the form of the low incomes resulting in poverty, inadequate housing, poor health, limited education and training, high infant mortality, low life expectancy and limited expectation of employment.

CHAPTER 2: LITERATURE REVIEW

2.1. Zimbabwe's agriculture sector structure before land reform

At independence in 1980, Zimbabwe had three categories of farming areas namely: Commercial farming areas, African purchase farming areas and Communal farming areas.

2.1.1. Commercial farming areas

Before independence commercial farming areas were solely meant for white settlers. In 1980 there were 6000 white commercial farmers with title deeds to the land in the commercial farming area of the country, which constituted 38.9 percent of the total land area in Zimbabwe and 46 percent of the land outside urban areas and national areas (Ministry of Agriculture of Zimbabwe, 1995). The number of the farmer white commercial farmers has decreased to about nine hundred farmers as per head count by 2006 (Moyo, 2006). Commercial farming areas were in the three ecological zones most suitable for agriculture. These commercial farms were between five hundred and two thousand hectares in size and some were even larger.

2.1.2. African purchase areas

The former African purchase areas (APAs) were a second category of land covering 1.4 million hectares. That is where blacks could obtain title to farm and if they qualified as master farmers and had assets, including cattle, worth at least $500. The African Purchase Areas and Tribal Trust Lands (TTLs) together constituted 53 percent of the rural land area but carried 62% of the black population (Ministry of Agriculture of Zimbabwe, 1995).

2.1.3. Communal farming areas

The communal areas were a third category of the farming areas. The land held under communal tenure in the 174 Tribal Trust Lands was occupied by about 700 000 families who were mainly

engaged in subsistence crop and livestock production (Ministry of Agriculture of Zimbabwe, 1995)

2.2. Structure of the transformed Agriculture Sector of Zimbabwe

As at independence in 1980 Zimbabwe's agriculture sector was transformed into the following farming categories:

2.2.1. Large-scale commercial farming areas

Large scale commercial farms range from 400 hectares to estates which are 25,000ha of land and above. They use more machinery and labor force.

2.2.2. Small-scale commercial farming areas

Small scale commercial farmers own about 90- 300ha of land. The main objective is to grow crops and keep animals for sale. They use less machinery and labor force.

2.2.3. A1 and A2 farming areas

A1 and A2 farmers emerged after the Fast Track Land Reform Programme. They own pieces of land which range from 20-2,500ha of farming land. The farmers are also holders of 99 year leases.

2.2.4. Communal farming areas

These groups of farmers grow crops for the family's own consumption. They sell their surplus in the open market for cash.

2.2.5. Resettlement farming areas

Resettlement started soon after independence in 1980. The objective of resettlement is to reduce pressure on overpopulated land and to improve crop and livestock production in former Tribal Trust Lands (TTLs).

2.3. Zimbabwe Agriculture Policy Pillars before Land Reform

Previous central pillars of the Rhodesia Agriculture Policy were the following:

- A security of tenure, to overcome uncertainty, facilitates access to credit, and improves investment on farms and agricultural production.
- Financing, underpinned by sustainable self financing revolving loan facilities.
- Pricing, that rewards production and contributes towards farmer viability.
- Mechanization essential for productivity and transformation of agriculture.
- Irrigation development to ensure utilization of water bodies and mitigate drought.
- Capacity- building, through support for agricultural institutions, training and extension services, strengthening of farmer organizations as well as research.
- Agro-stockist and dealers, storing the role of retail agricultural outlets and avoiding over centralization of procurement and distribution of inputs.
- Agro-distributors to assist stabilize seasonal availability of perishable produce, that way also supports produce price stabilization (Ministry of Agriculture, 1980).

The Zimbabwe government has never had a clearly defined and placed agriculture policy; even the one which was written in 1995 by the Ministry of Agriculture which was meant to cover the period from 1995 to 2020 has also been since set aside

2.4. Political and economic issues which precipitated the inflationary climate in Zimbabwe

2.4.1. Impact of the Lancaster House Conference Agreement

Zimbabwe attained independence on 18 April 1980, through the Lancaster House Conference agreement. The agreement brought about the birth of a constitution which was adopted at independence of Zimbabwe. The constitution had the following notable stipulations and specifications on land issues (Moyo and Yeres, 1995)

- The preclusion of expropriation of private property.
- Land to be acquired on a willing buyer and willing seller basis, compensation paid in hard currencies. Notice of intention to acquire land had to be given and property owners had 30 days to contest such an acquisition.
- 10 years restriction to prevent changes to the constitution and the reservation of 20 seats for whites in parliament.

Thus the Lancaster House Constitution prevented the expropriation of private property and advocated market assisted land reform, followed this neo-liberal framework and forestalled a radical land reform programme. Under the market assisted approach, coupled with a stable economic environment, resulted in the price of land increasing. This scenario resulted in the inability of the government to purchase the farms on offer (Moyo, 1995).

Ranger (1995) and Palmer (1990) noted that the policy of national reconciliation pursued by the government at independence prevented a radical redistribution of land. Reconciliation was aimed to prevent an exodus of skilled white commercial farmers, who at independence were producing 90% of the country's food requirements and therefore were seen as valuable to the country's food self – sufficiency. International sanctions against the country during Unilateral Declaration of Independence in 1965, had forced Rhodesian farmers to produce for the domestic market. Furthermore, peasant production at independence had decreased because almost one quarter of the rural population had migrated to towns to escape the war, three quarters had been put in protected villages and a quarter million fled the country to neighboring countries and abroad.

Although faced with such challenges details above, the government of Zimbabwe, in order to rapidly redistribute land, targeted 8.3 thousand hectares of land to resettle, 16 200 families under phase 1 of its Land Redistribution and Resettlement Programme (LRRP) (Makunike, 1995).
The targeted land between 1980 and 1985 was largely that which had been bought on the market or abandoned by white commercial farmers during the war. This is the point which makes it different from the Fast Track Land Reform Programme (FTLRP). However, redistribution slowed as droughts between 1982 and 1983 forced the government to provide for drought relief rather than for redistribution of land.
Furthermore, the government prioritized socio-economic needs such as education, health and rural development to the detriment of land redistribution. Even after parliament had amended the Land Acquisition Act in 1985 to facilitate acquisition by allowing government to expropriate both under-utilized and unutilized land and pay the farmers in local currency, there was limited redistribution and resettlement (Thomas, 2003).
According to Jacobs and Chavhunduka (2002), most farms acquired after 1983 were given to the ruling elites in contravention of the stipulated criteria and by 1986, about 300 black elites owned large scale commercial farms.

The post-independence government continued to implement economic policies started under Unilateral Declaration of Independence until 1985 when the land policy was initially amended. The economy of Zimbabwe experienced economic growth in the first two years f independence. This growth was attributed to renewed access to credit and finance, favorable terms of trade as a result of the opening up of the economy to the world and good weather conditions for agricultural production. The effect of this was that real agricultural output grew, aided by increased smallholder production. This allowed the government to maintain food security, continue with its redistribution land reform, provide infrastructure for resettlement and expand social services (Thomas, 2003).

According to Kanyenze (2004), access to credit through the Resettlement Loan Fund under the Agricultural Finance Act resulted in about 60% of the settlers accessing mostly short-term loans, for the purchase of inputs such as fertilizers, seeds and agro-chemicals. This helped to increase the production of the smallholder farmers. Nevertheless, after a couple of conservative years of

drought (1982-1984), by 1984, the structural weaknesses, in the economy had become pervasive and contributed to macro-economic instability. This period produced increased government current and capital, accounts deficits, and increasing debt service ratio and thus increasing inflation. All this had the effect of putting pressure on the balance of payments, which in turn affected agro-based industries, which were and are heavily reliant on importing inputs. The weakening economy affected commercial farmers negatively as is evidenced by the fact that most of the new black farmers defaulted on their loan repayments (Moyo, 1995).

2.4.2. Economic Structural Adjustment Programme (ESAP)

Zimbabwe attained independence in 1980 in the post developmental era where neo-liberal thinking dominated the developmental agenda. Following the economic decline of the late 1980s, the International Monetary Fund (IMF) and donor agencies pressured the government to fully liberalize the economy through a neo-liberal structural adjustment programme. Economic growth, which would in turn improve livelihoods, was expected from these reforms. Hence the second decade of independence saw the government adopting a strategy known as Economic Structural Adjustment Programme (ESAP) in 1990, which had an adverse effect on land redistribution reform and macro-economic situation under the Fast Track Land Reform Programme (FTLRP) (Kanyenze, 2004).

According to Moyo and Yeres (2004), the Economic Structural Adjustment Programme (ESAP) required the government to reduce its public expenditure, devalue the currency of the country, liberalize prices, to lower interest rates and promote trade as well as deregulate the capital accounts and labor relations. The results of this policy increased trade deficits and inflation, deindustrialization, resulted in the fall in the GDP by 17% and by 1995, a two thirds drop in real wages, accompanied by increased job losses in both public and private sectors. The effect of ESAP on agriculture was the privatization or commercialization of agricultural boards and a reduction in extension services, subsidies and credit. Furthermore, ESAP was accompanied by an erosion of farm incomes due to rising costs of production. New black commercial farmers were more adversely affected by the ESAP than white commercial farmers who were able to take

advantage of being well established and decentralized to ecotourism, horticulture and ostrich husbandry due to trade liberalization and easy access to export markets (Moyo and Yeres, 2004).

2.4.3. The period from 1990-2000 in Zimbabwe

The period was characterized by declining living standards in the country and continued slowed pace of land distribution, changes to the criteria applicable to the beneficiaries for resettlement and changes in the political and economic landscape (Kanyenze, 2004). Government adopted ESAP in 1990 which caused trade deficits. In 1992, the government amended the land Acquisition Act in1985 to hasten and improve the facilitation of land redistribution, but still the process continued to be slow throughout the 1990s. However, the Act provided the tool for embarking on the second phase of the Land Resettlement and Redistribution programmme. The land reform strategy during this period could be termed state- led, market-assisted reforms because land acquisition was state-led but compensation to the farmers was to be according to a liberal market approach (Waterloos and Rutherford, 2004).

Masiiwa and Kanyenze (2004), considered 1997, as the political watershed year within Zimbabwe in the following sense: Zimbabwe went to war in the then Zaire now Democratic Republic of Congo (DRC). The reason for the intervention was purely for national economic gains. The war was also partly sponsored by the Zimbabwe government and partly by the Kabila government. The money to sponsor the war was not budgeted for by the Zimbabwe government in the financial year of 1997. In the same year, 1997, the War Veterans Association of Zimbabwe demanded compensation in monetary terms, land and a place in the political landscape of the country. The government of Zimbabwe eventually budged in to the compensation demand and paid $50,000 to an estimated 50,000 war veterans each in October 1997. This was done solely to buy political support of the then defecting war veterans in the face of the mounting pressure of strong opposition conscientisation which finally led to the formation of the Movement for Democratic Change (MDC) in 1999.In the same vein, in 1996/1997, Zimbabwe was denied balance of payments/assistance by the World Bank, which makes it difficult to relieve deficits in an inflationary environment. Due to all these pressures on the fiscus, thus inflation started to rise. Inflation started to exceptionally rise in Zimbabwe in the year 2006.

The National Land Policy which was amended in 1992 was adopted in 1997. The land policy was based on compulsory acquisition of land with compensation only for capital developments done on the land. The adoption of land Resettlement and Redistribution Programme which was coined "Fast Track Land Reform Programme (FTRLP)" marked the nationalization of Zimbabwe's land. The year 1997 was marked by rampant food and remuneration strikes in the country. The strikers ended up looting goods from shops and other businesses. As a result of the looting, the situation degenerated into chaotic situation in the country, which mainly contributed to the withdrawal of investors from the country.

Based on the adopted National Land Policy, the government published a notice of intention to compulsorily acquire 1471 commercial farms in November 1997(Moyo and Yeres, 2004). Financial constraints placed limitations on the ability of the government to compensate white commercial farmers and provide for resettlement. Therefore, the government convened in 1998, the Donor Conference, in order to inform donors on land issue in Zimbabwe and source funds for land reform (Masiiwa, 2004).

The Zimbabwe government held a donor conference in September 1998. The conference was basically focused on the European Union in particular Britain and United States of America and in general the United Nations. The government sought 1.5 billion Zimbabwe dollars to support the programme and the President of Zimbabwe Robert Mugabe asked the donors' to compensate the white commercial farmers whose land had been gazetted for compulsory acquisition. At the same conference, Mugabe warned that anarchy would prevail in the country if Zimbabwe was not financially assisted in its land reform programme. All stakeholders took heed of the needs of the land reform in the country with a significant number of donors pledging technical and financial support. However, Britain and United States of America criticized Zimbabwe's land policy as failing to recognize property rights and said that it needed to be redesigned as a pre-condition to financial aid (Government of Zimbabwe, 1998).This resulted in the funds not being released for the land reform programme.

2.4.4. The Fast Track Land Reform Programme

In the aftermath of the politically significant rejection of the draft constitution in February 2000, the government of Zimbabwe amended the constitution in April 2000 to allow for compulsory acquisition of agriculture land from white commercial farmers without the obligation to pay compensation. Thereafter, the Fast Track Land Reform Programme was officially launched on the 15th of July 2000. However, well before the official launch, the war veterans, the war collaborators and landless villagers had already started invasions and occupations of white owned commercial farms. The invasions and occupations were politically motivated because of the rejection of the draft constitution, the withdrawal of the 1471 farms after successful contest by the white owners to the courts and the criticism of the land policy by Britain and United States of America who were expected to be the major donors of the Land Reform program (Masiiwa, 2004).

The Fast Track land Reform Programme was criticized and condemned regionally, internationally and locally for the land invasions and occupations showed lack of respect of rule of law, disrespect for property rights and inadequate planning and financial support. In response to the land reform programme, the UNDP sent two mission teams to assess the situation and provide recommendations for a sustainable programme. The first was in October 2000 and the second was in November 2001, after requests by both the government of Zimbabwe and committee of commonwealth foreign ministers in Abuja, Nigeria, in September 2001. The findings of the two missions indicated that the government of Zimbabwe lacked institutional and financial capacity to ensure maintenance of agricultural productivity and food security without the support of stakeholders and donors. Therefore, the missions provided recommendations that would ensure that the land reform programme be conducted in a sustainable, fair, transparent and legally enforceable manner (Masiiwa, 2004).

2.5. Inflation

According to Van Zyl, Human and Swanepoel (2002), inflation is the sustained and considerable increase in the general price level as a result of monetary causes and a simultaneous decline in the buying power of money. It indicates a decline in the buying power of money as a result of a general increase in the prices of goods and services. In other words, the reciprocal of inflation is the decline in the buying power of money. The buying power of money declines in inverse proportion to the inflation rate. The word inflation comes from a Latin word *inflatio,* which literally means full of wind, a condition of being blown or pumped up. Therefore, the literal meaning of inflation is the blowing up of prices.

The official inflation rates in Zimbabwe for the period under review are shown in table 1 below. The table shows how inflation was fluctuating during the period under review in Zimbabwe and, how it impacted on prices in the economy of Zimbabwe.

In further examining the impact of inflation, table 1 below shows how prices were going up in tandem with inflation growth after taking 1993 as the base year. The data show that if for instance an item or good was worth R100 in1993, in 2002 the same item was worth about R484 representing an almost 5 fold increase. In 2005, the same item was worth R865 and by 2006 about R3697 and in 2007 a whooping R24, 450 (See Table 1).

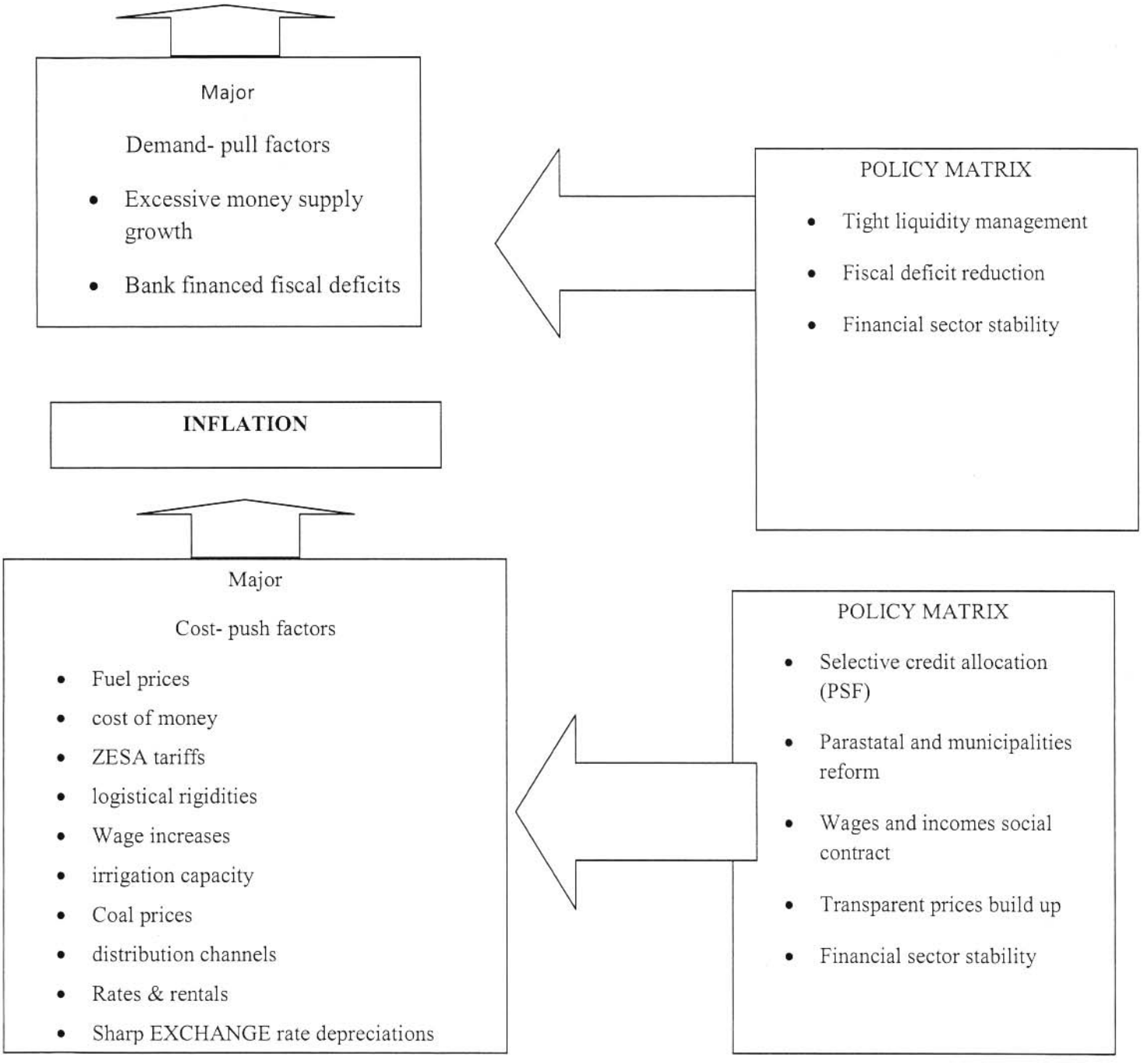
Table 1: Inflation price movements' during1993-2007

	Inflation	Adjust with 1993 as base year
1993	27.5	100.00
1994	22.3	81.09
1995	22.5	81.81
1996	21.7	78.91
1997	18.9	68.73
1998	31.7	115.27
1999	58.5	212.73
2000	55.9	203.27
2001	71.9	261.45
2002	133.2	484.36
2003	365	1327.27
2004	350	1272.73
2005	237.8	864.73
2006	1016.7	3697.09
2007	6723.7	24449.82

Source: Reserve Bank of Zimbabwe, 2007

From the above table, it can be seen that as inflation increases, prices rise faster; thereby the terms of trade for producers deteriorate as the rate of inflation rises. Furthermore, the low current income from production motivated producers to seek higher support prices and to extend price support policies to more commodities. Such policies result in further prices and higher rates of inflation.

2.5. 1. Inflation Dynamics in Zimbabwe 1993-2007



Source: Reserve Bank of Zimbabwe Monetary Policy Statement, 2005

2.5.2. Implication of major demand-pull factors of inflation in Zimbabwe 1993-2007

Demand for goods and services in Zimbabwe rose more rapidly than production, hence acute shortage of goods. Therefore prices rose in proportion to the willingness of consumers to pay more for the limited supply, resulting in increased prices and inflation.

Business and government institutions in Zimbabwe are also participants in the market on the demand side and as such are equally responsible for demand inflation.

Demand of Zimbabwean grocery goods by foreigners from countries like Zambia, Malawi and Mozambique in the early 90s contributed to demand-pull inflation. The demand for the goods of a country like Zimbabwe strained the already limited and dwindling production and supply, as such the prices rise even more.

In the early 90s the general public of Zimbabwe was not savings –conscious due to the rate at the money was losing value. People spent as much of their disposable income as possible. This tendency caused the demand to exceed the growth potential of the economy. As such prices begin to rise and people expected it to rise even more. Thus people spent more money and save less. The people's argument was money is loosing purchasing power and hence saving is not worthwhile.

During this period there was too much money in circulation, as a result of relaxed credit scenario, thus the spending pattern became extravagant. People paid high tariffs in luxury hotels, went on expensive holidays. Spending was diverted from the industries that produce goods to those that provide services. Thus, the normal growth of the industrial sector of the country (welfare-creating production) was disturbed, and an imbalance arises at higher price levels (Makunike, 2007).

Furthermore, because of high government expenditure during the period from 1990 to 2007, the government borrowed more money from the financial sector. To pay back the loan had to request

more money from the Reserve Bank, hence an increase in money supply. An increase in money supply without a corresponding increase in production in proportion to the money supply causes an excess demand, a case of "too much money chasing too few goods", and prices rise.

Around 1994, Zimbabwe increased its exports of maize and wheat to countries like Zambia, without a rise in domestic production. If exports rise without an increase in domestic production, fewer goods are available in the country itself, so excess demand and unavoidable price rises follow. The two grain crops are the main diets of Zimbabwe, so there was a shortage, as their prices rose (Kanyenze, 2004).

Upon the introduction of the Economic Structural Adjustment Programme (ESAP) in 1990, there was a systematic decline in productivity because the government had cut down on expenditures, while employment and wages remained constant and even rose. Gradually less was produced, while demand remained constant (or rose), so prices simply rose, which fuelled inflation (Muziri, 2006). The period from 1997 to 1999 was characterized by sudden strikes and stay ways towards the formation of the main opposition political party the Movement for Democratic Change (MDC). Strikes and stay a ways reduce production output and cause a drop in the supply, and prices rise (Moyo, 2002).

In an attempt to curb inflation, the governments introduced tight monetary policy whereby it reduced the money supply to banks and increase interest rates and advised banks to limit their lending and withdrawals. In the same vein, the government instructed all line ministries to operate within budgets to avoid bank financed fiscal deficits, thereby stabilizing the financial sector of the country (Ministry of Finance of Zimbabwe, August 2005).

2.5.3. Implication of major cost-push factors of inflation in Zimbabwe 1993-2007

The basic characteristic of cost-push inflation is the increasing total costs on the supply side of the market. In Zimbabwe, cost-push factors were characterized by the following:

- A drastic increase in the labor costs (higher wages/salaries), is a cost item for businesses. The Zimbabwe Congress of Trade Unions (ZCTU) on the background of the dwindling living standards of its membership, called for higher salaries and wages in both public and private sector. As such businesses simply add to the price of goods and services;
- Due to low productivity prevailing in the country, producers of finished goods raised the purchase prices of their products relatively more than their costs. This led to a rising price level;
- The Zimbabwe government in the early 90s introduced value added tax (VAT); and
- In the early 90s because of lack of production, people were importing expensive products, especially intermediate goods, thereby raising the prices of the finished products (Mudimu, 2003).

Cost-push inflation occurs where the interaction of demand and supply are disturbed by cost factors. This occurs in economies in which power groups such as monopolies, trade unions, consumer organizations, etc. put pressure on the economy. In such cases the prices of products are no longer determined by supply and demand alone, but also by bargaining between power groups. Good examples of this are the cost factors of production such as wages, rental, and interest and profit (Van Zyl, Human and Swanepoel, 2002).

In Zimbabwe, through the Zimbabwe Congress of Trade Unions (ZCTU) and its affiliates, employees demanded higher salaries/wages than were not justified by their productivity. The employers eventually paid the higher cost of labor and recover the costs by raising the prices of the finished goods. A vicious circle then arises because labor insisted on still higher salaries/wages, because "the cost of living had gone up "as a result of the higher prices of the consumer goods.

During the period 1990-2002, the prices of administered goods like basic commodities e.g. cereals, which are controlled and determined by the state, went up. This had twofold effect: it gave the trade unions a reason to demand higher wages, and producers simply added this to the price of the final product. Examples of administered goods are fuel, electricity, water, etc (Makunike, 2001).

The government of Zimbabwe in an attempt to do away with budget deficits of the early 90s decided to increase indirect taxation of value added tax and also customs and excise duties and the surcharge on imports from 15% to 17.5%, which raised the prices of goods and services over a wide front (Muziri, 2006).

According to Mudimu (2003), a reason given for the high prices of agricultural goods is the high cost of inputs such as labor, fuel, fertilizers and agro-chemicals, because most of them were imported and bought on the so called black market were prices were high. To run a farm at a profit, farmers must recover their input costs. The result is higher agricultural products prices; a case in point is Zimbabwe.

Muziri (2006) postulates that the high interest rates around 80% in Zimbabwe economy with a high inflation rate are often justified encouraging savings and discouraging borrowing. High interest rates are a cost item for many businesses that depend on outside finance (loans). The interest is simply included in the price of the products.

2.5.4. Reserve Bank of Zimbabwe summary of major factors driving inflation in Zimbabwe 1993-2007

Major inflationary pressures have arisen from high money supply growth, supply bottlenecks mainly attributed to the drought experienced during 2004/2005 agricultural season. The drought had adverse spill-over effects into other sectors of the economy, particularly manufacturing production (Reserve Bank of Zimbabwe, 2005).

In addition to the drought, decline in foreign exchange earnings, aggravated by reduced gold deliveries into the formal market, lack of viability of tourism and stoppage of foreign direct investment due to overpricing in tourism and political instability. Gold deliveries which had peaked production of 27 tons in 1997 had dropped to about 3 tons in 2008. Furthermore, the first quarter of 2009, no gold deliveries were recorded as most mines had either closed down or stopped producing, as a result of the not conducive economic environment and surrender requirements of the government (Reserve Bank of Zimbabwe, 2005).

The shortage of foreign currency, coupled with unavailability of basic commodities, resulted in entrenched parallel market activities for basic commodities, fuel and foreign currency.

Inflationary pressures also emanated from the continued adjustment of administered prices. Housing, water, electricity, gas and other fuels contributed 16.23% to the CPI basket. Thus continued price adjustments in electricity, rentals, rates and fuel have all significantly impacted on the upward spiral of inflation in the country (Reserve Bank of Zimbabwe, 2006).

The surge in international oil prices also resulted in the increase in the local price of fuel impacting negatively on the inflation outturn. Fuel constitutes about 15% of the total cost of production of which 75% is assumed to be passed on to consumers through price adjustments.

Wage and salary adjustments ranging from 30% to 150% in 2005 had a cost- push effect on general prices. Wage and salary adjustment in some sectors were staggered over 2 to 3 months, hence the full impact of the wage adjustments was felt right up to the individual(Reserve Bank of Zimbabwe, 2006).

Following the revision of value added tax from 15% to 17.5 % and the introduction of a number of new tax measures in September 2005, prices of goods and services were adjusted upwards (Reserve Bank of Zimbabwe, 2005).

Renewed adverse inflation expectations within the economy have also contributed to the build up of inflationary pressures.

Food according to the country's consumer price index basket continues to be the major driver of inflation trends topping 32% due to unproductive use of the arable land as a result of disturbance and price distortions caused by the Fast Track Land Reform Programme .The agrarian reform resulted in low productivity on the farms and the government's control of all agricultural commodities prices interfered with the market forces, thereby bringing in price distortions on the market (Makunike, 2003).

2.6. Exchange rate management in Zimbabwe 1993-2007

According to Swanepoel and van Zyl (1995), the exchange rate is the price of the currency of a country (such as the Zimbabwe dollar) expressed in terms of the currency of another country (such as a US dollar). There are two categories of exchange rates namely: fixed rate exchange and floating exchange rate. Fixed rate exchange is defined by revaluation and devaluation.

Revaluation: a measure enforced by government to increase the exchange value of its monetary unit.

Devaluation: a deliberate measure taken by a government to decrease the value of its currency.

These two terms imply government action, although it may be the result of the influence of the market forces.

Floating exchange rate is defined by appreciation and depreciation. Appreciation: an increase in the value of a currency in terms of other currencies as a result of market forces. Here forces of the market are solely responsible for variations in the exchange rate. The exchange rate is a key tool for transmitting macroeconomic policies into the real sectors of the economy. With at least 70% of Zimbabwe's import basket constituting items used in production directly or indirectly, the rate has been a double-edged sword in Zimbabwe's business operating environment, requiring that a balanced approach be adopted: one that restores exporter viability at the same time minimizing inflationary impulses from import costs.

On 12 January 2004, Monetary Authorities introduced the controlled foreign exchange auction system, which ended the year with a total of ninety-eight main auctions and twenty SMEs and individuals. Compared to the going exchange rate of Z$824 against the US dollar, the end of

December, 2004 weighted average auction rate of Z$5 729.27 per US dollar was an exporter-friendly adjustment of 595%. This explains why inflation happened to go down in Zimbabwe (Reserve Bank of Zimbabwe, 2006).

According the data in table 2 below the fluctuations of the Zimbabwe dollar to the green back was erratic and sporadic. For instance, on 12 January 2004 it moved from Z$824 to Z$4198 to 1US dollar and on 24 October 2004 it moved from Z$26,000 to Z$76,000 to 1US dollar

Table 2: Official exchange rate movements: January 2004-July 2004

12 January 2004	From Z$ 824/ 1US$ To Z$ 4198/1 US$
21 April 2004	From Z$ 4619/1 US$ To Z$ 5200/1 US$
28 October 2004	From Z$ 5200/1 US$ To Z$ 6200/1 US$
19 May 2004	From Z$ 6200/1 US$ To Z$ 9000/1 US$
25 July 2004	From Z$ 9000/1 US$ To Z$ 17600/1 US$
20 October 2004	From Z$ 26000/1 US$ To Z$ 76000/1 US$
20 January 2004	From Z$ 85000/1 US$ To Z$ 99200/1 US$
31 July 2004	From revalued Z$ 101/1 US$ To revalued Z$ 250/1 US$

Source: Monetary Statement policy, 2005

The Table 2 extract from the Reserve Bank of Zimbabwe monetary statement of 2006 above shows how fast the Zimbabwean dollar was losing its purchasing power. For those farmers growing exportable crops, the Zimbabwe dollar equivalent exchange rate of one's foreign

currency earnings were pegged at this official exchange rate, while inputs were bought on the basis of free-market exchange rates at least three times higher!. On this skewed basis alone, many farmers are almost guaranteed to make a loss before they put anything in the ground! Foreign exchange market set backs are a supply and demand issue linked to lack of balance of payments, support, linked to smuggling and indiscipline in the economy (Makunike, 2004).

CHAPTER 3: RESEARCH METHODOLOGY

3.1 The study area

The research was conducted in Zimbabwe during the 2007/2008 agricultural season. Zimbabwe occupies 390 750km^2 in South Central Africa between the Limpopo and the Zambezi rivers. It shares common borders with Zambia on the north and north – west, South Africa on the South Mozambique on the east and Botswana on the South- west. The country has ten province namely, Mashonaland central, Mashonaland east, Mashonaland west, Masvingo, Manicaland Midlands, Matabeleland north, Matabeleland South, Bulawayo and Harare provinces are just administrative provinces, as such were not considered in this research(Government of Zimbabwe , 1981).

The total land area of Zimbabwe can be divided into six different regions in which the amount of rainfall, to a large extent, determines agricultural land use. Some 600 000 hectares are in the rainy eastern highlands. These are suitable for diversified farming with cattle, plantation and orchards crops. Another 7000 000 hectares lie further west along the central plateau past Harare and the Midlands and are suitable for intensive dairy farming, maize, tobacco and cotton production,. An almost equal area to the South – West enclosing Bulawayo is suitable for mixed farming and for raising livestock on a semi – intensive scale. One third of the country lying further outward from the central plateau, mostly to the South, which receives less than 650 millimeters of rainfall a year is used for semi- intensive farming, while 10,000,000 hectares in the lowveld towards the Limpopo and the Zambezi rivers are fit only for ranching. Finally, some 10,000,000 hectares, mostly towards the Zambezi River are unsuitable for either agriculture or forestry (Government of Zimbabwe, 1981). Zimbabwe had a population of 12.5 million as per the last census of 2002(Government of Zimbabwe, 2002).3.2. Research approach

The procedure followed was first to identify an area where this investigation could be conducted. A survey questionnaire approach was thus adopted. In selecting an approach due consideration was given to the size of the area, the number of commercial farmers, enterprises undertaken, accessibility and convenience of the study area in terms of distance. As such the whole of

Zimbabwe was chosen as the study area. The respondents were identified according to the two strata's; the established white commercial farmers and new black commercial farmers in areas were crop production is intensified.

3.3. Method used to gather and capture data

The chapter is to explain how the data for the study was collected and analyzed. Primary data were collected from both the established commercial farmers and new black commercial farmers using structured questionnaires. The questionnaires were pre tested with a small number of representative farmers in the country to make adjustments and corrections before the full scale survey began. Secondary data was obtained from the Ministry of Agriculture, National Commercial Farmers Union, Central Statistical Office, Central Bank of Zimbabwe, and Ministry of Finance. Production and productivity records were studied. Data were captured using excel and then processed using statistical package for the social science (SPSS) 13.0 windows version.

3.4. Research design

A research design is the science (and art) of planning procedures for conducting studies so as to get the most valid findings (Vogt, 1993 Babbie, Mouton, Vester and Prozensly ,2002), the research design is a plan or blueprint on how a study is to be conducted.

According to Heinemann (1992) "Research requires us to translate a general abstract statement about behavior into a concrete measurable situation." A research design thus seeks to provide a set of systematic procedures for the production of data to develop, modify or expand knowledge.

The following steps are used in the research design.

- Choice of the research design.

In the study, the researcher intended to analyze and explain challenges commercial farmers are encountering in an inflationary environment. The research can, therefore, be regarded as analytical and explanatory. According to Kervin (1992:65-66), any research that asks for recommended solutions to a problem is likely to be explanatory.

- Collection of data on the research context, considering the situational background.

In the study, the perceptions of commercial farmers are relevant. A cross- sectional study was conducted in the intensified crop production regions of Zimbabwe. In an informed informal interview with the president of the national commercial farmers' union of Zimbabwe, it was established that cash crops such as tobacco, cotton, and sunflower farmers were hard hit with the economic condition as compared to other crops, for most of their inputs are imported(Commercial Farmers Union of Zimbabwe, 2004).

- Delineation on the strategy for the collection of data.

A survey research technique using a self-constructed questionnaire was utilized to collect primary data on the perceptions of the respondent commercial farmers on the challenges they are facing in the present economic condition. According to Babbie (200), surveys are excellent vehicles used for measuring attitudes and orientation in a large population. National Commercial Farmers' Union records of production and productivity were analyzed to assess the reason for the nose dive in production and productivity in Zimbabwe. The first step was to seek permission from the National Commercial Farmers' union head office and Ministry of Agriculture. Face-to-face meetings with the director in the Ministry of Agriculture responsible for commercial farming and the president of the Commercial Farmers' Union where the purpose of the study was explained. National commercial farmers' union agreed to assist the researcher to distribute the questionnaires to the farmers participating in the research.

- Ensuring adequate implementation.

To improve the rate of return of the questionnaire meetings were organized in respective farmers' union provincial offices to explain the purpose and benefit of the research. The meetings were made easier in that the farmers were meeting for the 2007 year end general meeting. The respondents were allowed to raise their concerns about the research project. The

inputs of the farmers were sought for the success of the research project. The farmers were very co-operative to the idea and encouraged each other to respond to the questionnaires faithfully and truthfully.

3.4.1. Type of research

Heinemann (1995:13) distinguishes between two types of research: "Applied research is conducted for the purpose of solving an existing problem, whereas basic research is conducted simply for the knowledge of it". This study is classified as an applied research and was conducted to try and identify problems that farmers are encountering in the prevailing economic environment. Sekaran (2003), states that farmers' perception of business and business environment and their attitudinal and behavioral responses can be tapped by talking to them and seeking their responses through questionnaire. The research project of this study is both qualitative and quantitative in nature since it involves examining and reflecting on perceptions in order to gain an understanding of political and economic issues and analysis of time series secondary data.

3.4.2. Population and Sampling

At the time of data collection, the total number of active commercial farmers in Zimbabwe was about two thousand (Commercial Farmers' Union Record, 2007). The number comprised of white and back commercial farmers. The idea behind the sample is to find if there are any discrepancies in the way the farmers perceive the situation in the inflationary environment. The farmers own same size of land and use it for different purposes. The study sample of one hundred and sixty farmers was obtained through stratified sampling of established white commercial farmers and new black commercial farmers.

3.4.3. Research procedure and strategy

The approach of this study was to use secondary data and primary data to understand and explain challenges facing farmers in an inflationary environment. This was followed by recommendations for action to chart the way forward.

Research that seeks to recommend solutions to a problem is more inclined to be explanatory research. Such a research generated and tests potential casual relationships between explanatory variables and the situation under review. It is used to explain why the current situation under the required standard. In this light, this study can, therefore be regarded as an analytical or explanatory investigation.

3.5. Data collection methods

Both primary and secondary data were collected. The primary data was gathered using a structured questionnaire from the respondents. The secondary data were accessed from Ministry of Agriculture, Ministry of Finance, Central Statistical Office, and the Reserve Bank of Zimbabwe.

3.5.1. The collection of primary data

A self- constructed structured questionnaire was made up of both open- ended and closed questions were used to solicit data from the respondents. The questionnaires were administered through the provincial head offices of the Commercial Farmers' Union. Details of the questionnaire were presented as follows:

- Background information about the farmers was captured in (section A) of the questionnaire. The background information was aimed at establishing the facts on the ground as to the allocation of commercial farms countrywide. The information included race, age, marital status, occupation and level of education.

- The second section (section B) of the questionnaire was aimed at establishing reasons why the farmers are still in business despite the prevailing economic situation. The farmers were

supposed to state their level of agreement with the fact that the variables of politics and economic such as exchange rate, interest rate, government and business environment had influenced them to stay put in such a harsh business environment.

Furthermore, this section was intended to establish if farmers had at one point in time thought of leaving farming business in the country to neighboring countries and the success and failure thereof as well as the reasons underlying migrating to countries like Zambia, Mozambique, Namibia and Nigeria and how they intend to endure the economic hardships which are detrimental to their business enterprises.

- The third section (section C) of the questionnaire was aimed at establishing the perceptions of the farmers in the industry. The respondents were asked to rate the industry's sustenance based on their experience as well as what they knew of their agriculture related industries. The farming industry was evaluated on business opportunities, viability of the industry in the near future on the background of the political arena which precipitated the current economic crisis and availability and supply of the much needed agricultural inputs which are scarce, sometimes not available at all on the market.

3.5.2. The collection of secondary data

Secondary data also known as available data is information generated or gathered by person or agencies other than the researcher for purposes, other than the researcher's specific project (Kervin, 1992). Secondary data collected was time series data on crop production, crop prices and annual inflation averages.

3.6. Data analysis

The responses were coded and data recorded using excel. Cronback's alpha scores were used to check the reliability of the different measures used in the study. The use of Cronback's alpha scores confirmed that in general, the internal consistency, reliability of the measure used in this study can be considered as good. The frequency of the responses was presented and analyzed in the form of tables, graphs and histograms. A combination of statistical and non- statistical techniques was used in analyzing the data. A detailed analysis of results is presented in chapter 4 of this report.

CHAPTER 4: RESULTS AND FINDINGS

4.1. Introduction

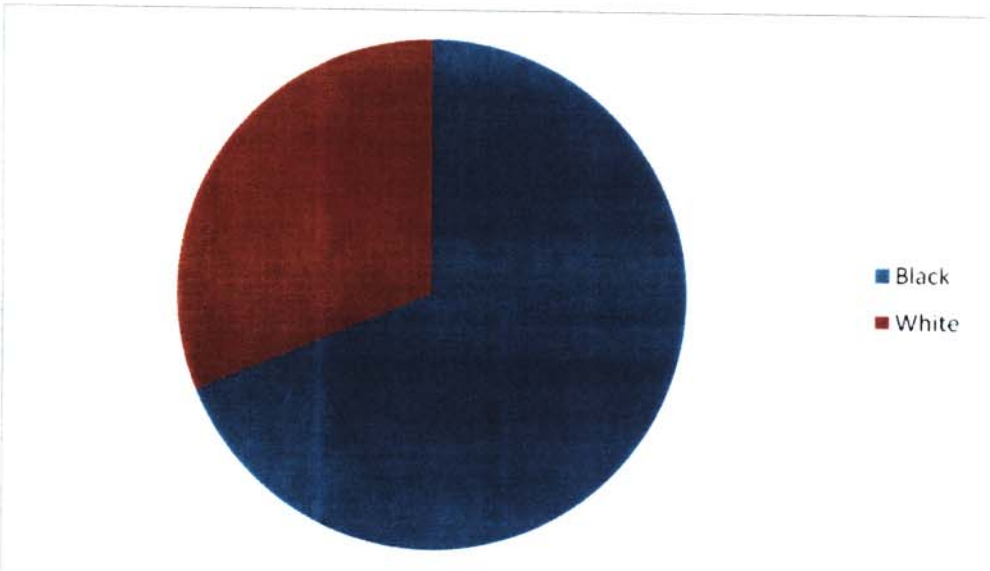
The chapter presents the findings and results of the study based on perceptions of respondent commercial farmers and production data obtained from the aforementioned sources.

4.2. Perceptions of the respondent farmers (primary data) in the study

4.2.1. Farm ownership by race1993-2007

This figure shows that the majority of the respondent farmers from the sample are blacks, which shows the results of the land acquisition process.

Figure 1: Farm ownership by race 1993-2007



The pie chart on figure 1 above shows the respondent farmers that 75% are black and 25% white. The majority of black commercial farmers benefited on the onset of the Fast Track Land Reform Programme in 2003.Farming knowledge and experience was not an issue, but political connectivity. The respondents have the same size of land, the same crop production enterprises and same land arrangements.

4.2.2. Age and gender in farm ownership of the respondent farmers1993-2007

This table indicates the age and gender in farm ownership in the study area. The majority of the black farmers are males and in the age range of 51-60and, whites are also males in the age range of 51-60.

Table 3: Age and gender in farm ownership 1993-2007

RACE	AGE	MALE	FEMALE	PERCENTAGE
Total number of black respondents	30-40	10	0	8.3
	41-50	30	5	29.2
	51-60	48	15	52.5
	61-70	12	0	10.0
Total number of black farmer respondents		100	20	100.0
White respondents	30-40	0	0	0.0
	41-50	4	0	10.0
	51-60	6	0	15.0
Total number of white farmer respondents		30 40	0 0	75.0 100.0

The table shows that farm owners from both groups were in the age range of 51-60. Most of the back commercial farmers were War Veterans and ruling party heavy weights, and as for the whites they inherited the farms from their parents.

4.2.3. Education profile of the respondent farmers 1993-2007

This table shows the education profile of the respondents of the study. From the table it shows that whites are the ones with tertiary qualifications in agriculture (42.5%) and blacks only 8.3%.

Table4: Education profile of the respondent farmers 1993-2007

Respondent farmers	Grade 7	Junior certificate	Ordinary level	Advanced level	Tertiary qualifications in agriculture
Black farmer respondents	0	41.7%	33.3%	16.7%	8.3%
White farmer respondents	0	12.5%	25%	20%	42.5%

Most of the black farmers dropped out of school going for the liberation war, which explains the 41.7%s of them with only junior certificate. The impact of this profile has a strong bearing on problem identification, problem solving, choosing the best alternatives, decision making and forecasting. Farming business needs accurate assessment, as such relevant education is important in understanding economic implications of inflation and also mapping out of sound and reasonable strategies so as to reduce the effect of the challenges of secondary effects of inflation.

4.2.4. Farming enterprises of the respondents 1993-2007

The table indicates the farming enterprises undertaken by the respondents during the study period 1993-2007. Most of the farmers are into crop production because commercial farms are basically located in the arable areas of region 1 and 2. Furthermore, it is because it is easy and cheap to venture into crop production that explains the 66.7 %(blacks) and 50 %(whites).

Table 5: Farming Enterprises of the respondent farmers 1993-2007

Respondent farmers	Crop production	Animal rearing	Forestry	Game ranching	Market gardening
Black farmer respondents	66.7%	12.5%	4.2%	7.5%	9.2%
White farmer respondents	50%	25%	5%	12.5%	7.5%

A big number of the farmers are into crop production because most of the commercial farms are into region 1& 2 of arable land which receive high rainfall with abundant water for irrigation; dams, rivers and high water table.

The information given in the table indicates that the majority of the respondent farmers are into labor intensive agricultural enterprises. As such, the biggest challenge the farmers are having is the acute shortage of the supply of labor due to the exodus of people to neighboring countries and abroad and the havoc wrecked by HIV/AIDS. Furthermore, the enterprises tend to require a lot of inputs to realize appreciable output. The imported inputs such as agro-chemicals are so scarce as a result of the supply shortage of money due to water tight monetary policy of the Reserve Bank of Zimbabwe and the scarcity of foreign currency.

4.2.5. Physical environmental constraints faced by respondent commercial farmers 1993-2007

This table shows the physical environmental constraints faced by commercial farmers in Zimbabwe during 1993-2007. From the table it shows that almost all the categories of the farmers are affected by the same physical environmental challenges. This is clearly shown by the high percentages above 90%.

Table 6: Physical Environmental constraints 1993-2007

Respondent farmers	**Physical environmental challenge**	**No of respondent farmers affected**	**Percentage of respondent farmers affected**
Black farmer respondents	Vandalism of transformers	118	98.3%
	Wanton destruction of vegetation	120	100.0%
	Disturbance of water supplies and drought mitigation	120	100.0%
	Vandalism of irrigation equipment	120	100.0%
Total number of black farmer respondents		120	100.0%
White farmer respondents			
	Vandalism of transformers	40	100.0%
	Wanton destruction of vegetation	40	100.0%
	Disturbance of water supplies and drought mitigation	40	100.0%
	Vandalism of irrigation equipment	38	95.0%
Total number of white farmer respondents		40	100.0%

There results showed a serious environmental degradation taking place on the farms due to the wanton destruction of vegetation (100%) due to the shortage of paraffin and electricity supply. Zimbabwe Electricity Supply Authority (ZESA) has decimated due to high copper wire theft and vandalism of transformers (98.3%) and 100.0% for the respondent farmer groups respectively.. Random cultivation by people resettled near the commercial farming areas is causing siltation of rivers flowing through the farmers and dams (100.0%) for both groups. To that end, some people are destroying dams in an attempt to catch fish. During the commercial farms invasions and occupations in 2000, irrigation equipment was targeted and vandalized (100.0%) for both groups. The wanton destruction of vegetation has adversely affected the ecosystem which is significant to soil organisms for the healthy maintenance of the soils. To exacerbate the whole situation, some resettled people have resorted to fires as a means to hunt, as such farmers end up without grass to gaze their domestic animals and game. These physical challenges coupled with climatic changes have aggravated the physical environmental challenges commercial farmers are facing. This proves the assertion by Makunike 2006 that "climate change is making rain- fed crops far less predictable, yet Zimbabwe is broke and dysfunctional to increase irrigation and water storage capacity.

4.2.6. Responses by respondent commercial farmers on economic challenges 1993-2007

The table indicates the economic challenges faced by commercial farmers in the study area. The 100% of the farmers in all the types of challenges transcends to the fact that inflation has an effect on all the tabulated economic challenges.

Table 7: Economic constraints 1993-2007

Respondent farmers	Economic challenge	Number of respondent farmers affected	Percentage of respondent farmers affected
Black respondents			
	High production costs	120	100.0%
	Shortage of inputs	120	100.0%
	Lack of medium- term finance	120	100.0%
	Working capital shortage	120	100.0%
	Poor profit margins	120	100.0%
	Logistical problems	120	100.0%
	Lack of collateral	120	100.0%
	High interest rates	120	100.0%
	Dicey exchange rates	120	100.0%
Total black respondents		120	100.0%
White respondents			
	High production costs	40	100.0%
	Shortage of inputs	40	100.0%
	Lack of medium-term finance	40	100.0%
	Working capital shortage	40	100.0%
	Poor profit margins	40	100.0%
	Logistical problems	40	100.0%
	Lack of collateral	40	100.0%
	High interest rates	40	100.0%
	Dicey exchange rate		
Total number of white respondents		40	100.0%

The results from table 8 illustrates that all respondents groups are affected as follows: 100% by high production costs,100% by shortage of inputs, 100% by lack of medium-term finance,100% by working capital shortage,100% by poor profit margins, 100% by logistical problems, 100% by lack of collateral, 100% by high interest rates and 100% by dicey exchange rates. The results show that commercial farming has become difficult in Zimbabwe for all the cornerstones are in disarray. The most aggravating issue is that the private sector has distanced itself from farming because of the political landscape surrounding the land issue in Zimbabwe. Collateral and tight monetary policy are the main stumbling blocks in that the farmers can not get loans from financial institutions because of lack of security and too high interest rates and limited withdrawals per head. Thus all the respondent groups are affected by the same economic challenges.

4.2.7. Social constraints faced by respondent commercial farmers 1993-2007

The table shows the high percentages of farmers are affected by social challenges which are secondary effects of inflation. This goes on to explain the low productivity on the farms because labor is the engine of production. In the same line, this explains the exodus of farm laborers to other better rewarding sectors of the economy so as to eke a living.

Table 8: Social constraints 1993-2007

Respondent farmers	**Social constraints**	**No of respondent farmers**	**Percentage of respondent farmers affected**
Black farmer respondents			
	Adverse living standards of farm workers	120	100.0%
	Health care derailment	120	100.0%
	Lack of support services	120	100.0%
	Pension , Salaries/Wages in kind	115	95.8%
Total number of black farmer respondents		120	100.0%
White respondents			
	Adverse living standards of farm workers	40	100.0%
	Health care derailment	40	100.0%
	Lack of support services	40	100.0%
	Pension , Salaries/Wages in kind	40	100.0%
Total number of white farmer respondents		40	100.0%

The results in table 8 shows that both respondent groups were 100.0% adversely affected by declining living standards, 100.0% faced health care problems of workers, 100.0% lacked

support services and 95.8% and 100.0%gave pensions to the employees in kind respectively. Health care was derailed as a result of institutions could not afford to buy medication for farm workers, hence labor and output dropped down seriously as workers died or could no actively work because of ill- health. Farmers attracted and retained their workers through paying salaries and wages in both money and groceries form. In the same vein, farmers provided their workers with accommodation and to some extent provided clothing for the families. As workers tried to make ends meet, resolved to vandalism of transformers so as to access copper wire for sale in order to have food on the table, this was exacerbated by lack of social support services like police communication from Post Telecommunications (PTC), disrupted health institutions and schools.

4.2.8. Political constraints faced by respondent commercial farmers 1993-2007

The table below shows the political challenges which emanated from the Land Acquisition Act of 1997 and the following Fast Track Land Reform in 2003. The first three challenges affected the highest percentage because Land Act was applied across the board, whereas access to inputs from the GMB (Grain Marketing Board) was discriminatory against the whites to a certain extent.

Table 9: Political constraints 1993-2007

Respondent farmers	Political constraints	No of respondent farmers affected	Percentage of respondent farmers
Black farmer respondents			
	No land tenure	120	100.0%
	Political externalization of funds	50	41.7%
	Disruptive political meetings on farms	20	16.7%
	Racial discrimination on procurement of inputs	10	8.3%
Total number of black farmer respondents		120	100.0%
White respondents			
	No land tenure	40	100.0%
	Political externalization of funds	40	100.0%
	Disruptive political meetings on farms	40	100.0%
	Racial discrimination on procurement of inputs	40	100.0%
Total number of white farmer respondents		40	100.0%

The information in table 9 illustrates that both respondent groups(100%) farmers have no land tenure as the government came up with a policy that even the former white commercial farmers had no right to land with their title deeds on hand, all land belonged to the state. Thus lack of security meant no collateral hence no borrowing power for development and investment on the farms. The results indicated that 41.7% black respondent farmers and 100.0% white respondent farmers were affected by externalization of funds due to political turmoil in the country. In this view, the Reserve Bank of Zimbabwe (RBZ), increased foreign currency retention levels of direct exporters from 55% to 75% with from September 2007 (Herald, September 2007). The new measures were purely political, and they meant that exporters could sell 25% to RBZ and retain 75% in their Foreign Currency Accounts (FCAs). Thus the major challenge faced by the farmers is that they could not access their FCAs for re-investment. Furthermore, the results indicate that 8.3% black respondent and 100.0% white respondent farmers were affected by disruptive and compulsory political meetings called by the ZANU PF cadres, thus farm workers could not reach their expected targets and hence negated on output. In the same light, the results show that 25% farmers suffered racial distribution when it comes to the issue of the distribution of inputs from the Grain Marketing Board (GMB). This affected their timely planting arrangements.

4.2.9. Summary of the perceptions of the respondent farmers in Zimbabwe 1993-2007

The following information is the summary of the perceptions of both respondent farmer groups on the following: land tenure systems, land fragmentation, institutionalized marketing impediments, government policies and commitment to the commercial farming area and HIV/AIDS and labor shortages on commercial farming area in Zimbabwe based on interviews/questionnaires.

4. 2.9.1. Land tenure systems

According to respondent farmers, property rights are fundamental to wealth creation and secure tenures over land allows farmers to accumulate wealth, encouraging them to invest in land and to use it in a way that enables sustainability. In Zimbabwe, there is an urgent need to address tenure security and provide the farmers with security which will allow them to own the land resources so that they are able to increase investment and growth on their farms. The dilemma in Zimbabwe is that land has become a good with more social and political value than economic value, such that it fails to be useful in trade and the economy, thereby failing to sustain itself.

In an attempt to address the disparities that the colonial government had created in land ownership, the Government of Zimbabwe set as its objective from independence in 1980 to resettle indigenous black people. However, because of the constitutional limitations (Muir-Loreishe,2005), it could not achieve all its objectives, nor adequately solve the legality of land transfers, particularly for land acquired in the Fast Track Land Reform Programme of 2003.

As a result, settlements that were created are fraught with controversy as some segments of society question their legality. Furthermore, according to the respondent farmers, lack of clear and concrete tenure on commercial farming area puts the farmer in a difficult situation with regard to investment and growth decision-making. Long-term decisions which are necessary for farm survival of such things as irrigation development, construction of dams, building of specialized tobacco barns and long-term fertility recapitalization measures are difficult to decide

when the farm owner is not sure whether he will benefit from the investments. This is supported by Muir-Lore shire in The Termite Strategy:

"It is difficult to mobilize capital and encourage investment when resources are not treated as economic goods but as social or political privileges" (Muziri, 2007).

The new Land Acquisition Act in essence repealed the freehold tenure system which provided incentives for commercial farmers to make productive use of land by investing in yield enhancing and long-term capital investments on their farms or use it as collateral for both short – term and long-term loans, whilst the newly promulgated Land Acquisition Act (section 16) empowered new black commercial farmers with access to land, there is yet no proper transfer of rights to land to farmers to use it as collateral to acquire the necessary inputs for smooth running of farm operations.

The land redistribution in Zimbabwe resulted in the emergence of the two types of smallholder farmers, the A1 and A2 farmers, based on size of landholding. These are the farmers the government is focusing much on than the commercial farmers.e.g. The Agricultural Sector Productivity Enhancement Facility (ASPEF) was targeted to the A1 and A2 farmers to the exclusion of the commercial farmers.

Commercial farmers in Zimbabwe have a low marginal propensity to save owing to the difficult macro-economic situation in the country and therefore require external or borrowed finance to kick start their farming operations. This is attributed to the erosion caused by the inflation to the local currency, whereby today's currency value is very low to. Government support through the Central Bank of Zimbabwe and the Land Bank of Zimbabwe has not only been inadequate for financing long-term farm capital requirements, but also almost always fallen short of financing farm current expenditures, which are the prime movers for lifting farm productivity. Hence the farmer is faced with the problem of accessing adequate finance for running the farm.

Meanwhile, according to respondents, financial institutions are hesitant to provide funding citing high risk and other factors, and are not certain whether the farmer will be on the land for a period

longer enough to be able to service the loan. The result is that the farmer has no capacity to do meaningful and productive farming owing to inter alia lack of inputs, lack of working capital, and insecurity on his part to start long-term productive programmes.

4.2.9.2. Land Fragmentation

The Zimbabwe's farming landscape was dominated by extensive crop and animal production (Viljoen, 1991). In pursuance of the land reform goals in December 2000, government gazetted a structural instrument number 288 of 2000 in which maximum farm sizes were prescribed for all agro-ecological regions in the country (Mudimu, 2003). As a result of the instrument, most farms which had hitherto been operating large units were subject to immediate sub-division to comply with maximum farm size regulations, as given in table below:

Table10: Maximum farm size for Zimbabwe's agro-ecological zones

Agro-ecological zone	Maximum farm size (ha)
1	250
11a	350
11b	400
111	500
1V	1500
V	2500

Source: Mudimu, 2003

As such respondent farmers said that changes in the scale of production necessitated by farm sub- divisions have made some production processes uneconomic (Zimbabwe Catholic Bishops Conference, Evangelical Fellowship of Zimbabwe Council of Churches, 2006). Equipment and infrastructure that previously had been designed to work productively on large farms became

obsolete, with some tobacco barns being converted to classrooms. Large tractors and combine harvesters are now underutilized, while poles from stock pens are used as firewood. Large canals, engines and combine harvesters designed to service large farms are now working on smaller farms with relatively high maintenance costs. The farmer is therefore left in a difficult position, servicing large equipment from small land equipment (Muziri, 2007).

Land fragmentation has also resulted in disputes on the use of common facilities like tobacco barns and water rights where one farmer had been using them before. The new independent farmers cannot agree and coordinate on who uses barns first as they almost always fail to coordinate and synchronize their plantings and harvesting (Mudimu, 2003).

4.2.9.3. Institutionalized Marketing Impediments

The period under review saw government reverting to the repressive policies common during the colonial times. As the food deficit reached precarious levels, in July 2001, the government promulgated a new grain marketing policy, the statutory instrument no.235A of July 16, 2001 intended to address the maize shortage and build up stocks (Mudimu, 2001). The instrument stipulated that maize, wheat and their milled products were controlled commodities and, the Grain Marketing Board (GMB) was the sole buyer and seller of maize and wheat. Thus according to the respondent farmers, these grain marketing controls, fixed prices combined with late payment by the GMB in a highly inflationary environment have severely reduced realizations by farmers.

In the same vein, respondent farmers said that institutionalized monopoly by national marketing organizations which often are not expedient in disbursing funds to farmers cripple their liquidity management due to the long wait for payment. Unreliable and controlled markets have also been central to the problem of farm management in Zimbabwe particularly during its transitional land period. Exportable crops have also been experiencing low returns as a result of indirect taxing of products through exchange rate overvaluation, as well as from an export tax on oilseeds which cut off the positive influence of higher international prices (Zimbabwe Bishops Conference, 2006). The farmer is challenged as his/her profitability does not depend on market forces but on

the prices set by government, which are always lower than the real costs of production, considering the inflationary environment.

The cartel system of marketing, a remnant of the pre-reform scenario dominated by white commercial farmers in the production and marketing of high valued crops such as tobacco and flowers and the post-reforms' reluctance to do away with it, has made it difficult for the new black commercial farmers to penetrate international markets. The new farmer is limited in his choice of crops by his inability to penetrate the international market for high valued crops such as tobacco and flowers. Coupled with this is, is the distorted international agricultural trade environment which creates artificial impediments for developing country farmers.

Zimbabwe is a signatory of the World Trade Organization (WTO) and other regional and bilateral trade agreements. Although the country has an obligation to follow the statutes of these bodies, like other African countries, rampant unfair trade terms have always been a major challenge to the Zimbabwean commercial farmers. Recently, the Doha round of table negotiations gave very little to Sub-Saharan Africa in terms of leveling of the playing field between the powerful west and the developing countries (Scheepers, 2006) , leaving farmers at the mercy of highly competitive and subsidized products from developed countries.

4.2.9.4. Government policies and commitment to the commercial farming area

The current review examines government policies before and during the transition period. An analysis of public sector expenditure patterns in the formative years suggests that the government set low priority on investment on agricultural prime-movers, which are the engines for agricultural growth (Zimbabwe Technical Report, 1994). Real investment in Zimbabwe's agriculture declined from 10% per year from 1970 to 1981 to 6% per year from 1982 to 1986. Although total government expenditure increased in real terms in all the years throughout the 1980s except in 1984 and 1985, total government budget allocated to agriculture declined on average in real terms (Zimbabwe Technical Report, 1994). Yet, experience from the rest of the world, in particular in the East Asia, whose economies have been expanding significantly, show that levels of public sector investment in agricultural development ranged from 20% to 30% for a number of years before the economies could take off.

The respondent farmers said that the review of the period between 1985 and 2000 shows that the Zimbabwean government has never been keen on policies to address food security. Strategies were based on political reactions to unfolding political scenarios. As stated by Mudimu (2003) on the issue of food security:

"Zimbabwe has never had a clearly articulated agricultural policy or one on food security until 2002, when it came up with the Zimbabwe food security and strategy for presentation at the FAO World Food Summit in 2002."

At the instigation of the International Monetary Fund(IMF), the government of Zimbabwe introduced the Economic Structural Adjustment Programme (ESAP).The programme among other things liberalized agricultural marketing, advocated a reduction in the government's involvement in direct investment in production, privatization of agricultural marketing and transformation of some marketing boards into private entities where government has limited shareholding and liberalized import and export trade on some commodities (Makamure, Muzuva and Jowa, 2001). The reforms that were to take place in agriculture as a result of ESAP were not only at variance with central government's agenda of resettling people but were also insensitive of the fact that the new farmers who would eventually be resettled required more support than before. This would be needed in infrastructure development, marketing, extension service, yet

the government reduced expenditure on agriculture support. The irony of it was that the government was going to resettle people without the backup support that was crucial for the sustainability of the new commercial farmers. There was therefore no marriage between the programme of land redistribution and economic policies meant to support it.

The transition period has been characterized by a decline in all economic fundamentals in the country resulting from among other factors trade embargoes by EU on agricultural commodities and a reduction in foreign direct investment. There has been a stunning fiscal and monetary breakdown in Zimbabwe starting about the end of 1997, with inflation at about 1560% in January 2007 (CSO, 2007). The downturn in the economy has led to major challenges to commercial farming operations. Shortage of foreign currency has cascaded into shortage of materials such as chemicals, spare parts and equipment necessary for farm operations. Shortages of raw materials of such things as chemicals and fertilizers have become serious impediments to the smooth running of farming operations.

4.2.9.5. HIV/AIDS and labor shortages on commercial farms

According to recent data from FAO, AIDS has claimed the lives of about 7million agricultural workers to date and could kill an additional 16million (up to 26% of the agricultural labor force) in sub-sub-Saharan Africa by 2020. The Zimbabwe demographic and health survey shows also that 18.1% of sexually active adults are infected with HIV (UN, 2006). FAO estimated that Zimbabwe lost 9.6% of its agricultural labor force by 2000 because of aids (Mudimu, 2003). The AIDS pandemic has thus imposed an enormous cost on the farms and institutions due to diversion of funds from investment to health care, funeral costs, absenteeism, cost of recruiting and replacing staff, loss of skilled labor and reduction of productivity due to loss of experienced human resources (FAO, 1998).

According to the respondent farmers the increased morbidity mortality of the staff of formal institutions as a result of the HIV/AIDS impact is weakening institutional capacity through loss of skilled and unskilled staff, including experienced staff at all levels. Extension services have

been affected as staff is increasingly being emasculated by the AIDS pandemic (UN, 2006). This has cascaded into low farm level productivity as farmers need extension advice. Labor intensive operations are abandoned in favor of labor extensive operations while specialized farming is abandoned as skilled staff are lost. The other causes of labor shortages in the view of a commercial farm manager are:

"a combination of low wages shunned by workers, liberalization of the economy which has made people to be self-employed and most importantly the disease.

AIDS can insidiously erode people's morale, weakening their confidence, in the future, further harming productivity and undermining their willingness to save and invest (Bereford, 2001). Where leaders become sick and pass away, there is lack of continuity or even breakdown of the incentives they were spearheading.

Table 11: Labor on commercial farms in Zimbabwe, 2003-2007

Year	Number of employees
1993	415676
1994	417213
1995	389628
1996	352816
1997	324289
1998	322680
1999	314419
2000	278918
2001	210874
2002	180094
2003	106253
2004	96334
2005	34028
2006	15119
2007	9105

Source: Central statistical of Zimbabwe, 2007

From this table it shows labor force started to go down after 2000 as a result of the agrarian reform and the effect of HIV/AIDS and lack of purchasing power of the meager salaries/ wages farm employees are paid, so they opted to go and farm themselves and some returned to their countries of origin like Zambia and Malawi, whilst some are going for diamond and gold panning.

4.3. Strategies commercial farmers put in place to sustain operations on the farms

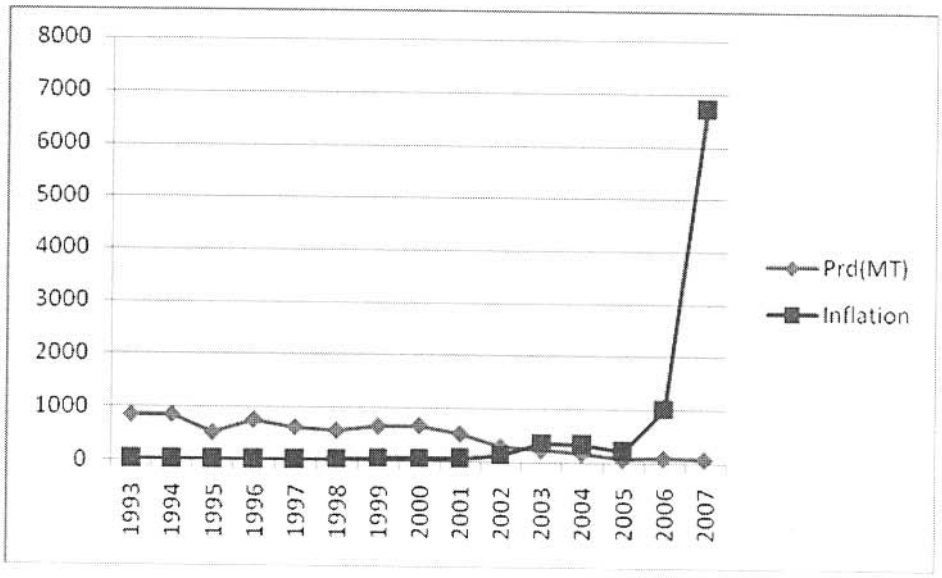
Farmers that are heavily involved in export operations often hedge their exposure to exchange rate fluctuations by buying sophisticated financial contracts. These hedges ensure that if the farmers lose in their exporting operations because of exchange rate fluctuations, they will make up the losses with gains on their financial contracts. In the Zimbabwean hyperinflationary environment, a budget has been rendered almost obsolete. A common budgeting tactic that farmers have resorted to is to reduce the lead time for preparing the budget and to revise it in light of the actual inflation being experienced to date. Farmers are getting into farming contracts with tobacco companies like Chidziva and Northern to secure mostly tobacco inputs in time. For the farmers to get foreign currency they have resorted to the so called "black market" in order to be able to buy imported inputs in good time._In an endeavor to retain and attract labor, farmers have resorted to reward their workers in both kind and monetary terms. To some extent they buy them basic groceries and the retiring workers pay them in kind like bicycles, cattle drawn ploughs and harrows. To keep going, farmers have reduced hectarage of crop production, scaled down permanent Labor force, reduced their herds of livestock and stopped capital expenditure on the farms.

4.4. Crop production versus inflation analysis (secondary data) in the study

The following analysis includes the following crop enterprises: Maize, Sorghum, Mhunga, Rapoko, Tobacco, Cotton, Groundnuts, Sunflower, Soya beans, Edible dry beans and Paprika. However, for the convenience of this presentation the researcher considered maize and tobacco. The analysis looks at the effect of inflation on production and yield of the abovementioned crop enterprises.

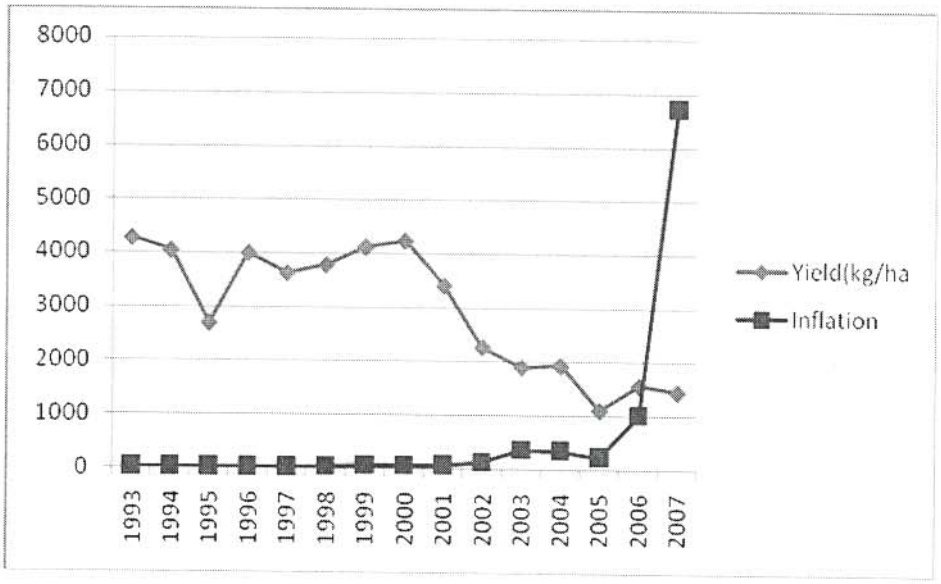
4.4.1. To establish the effect of inflation on crop production

Figure 2: Effect of inflation on maize production (tonnes) in Zimbabwe, 1993-2007



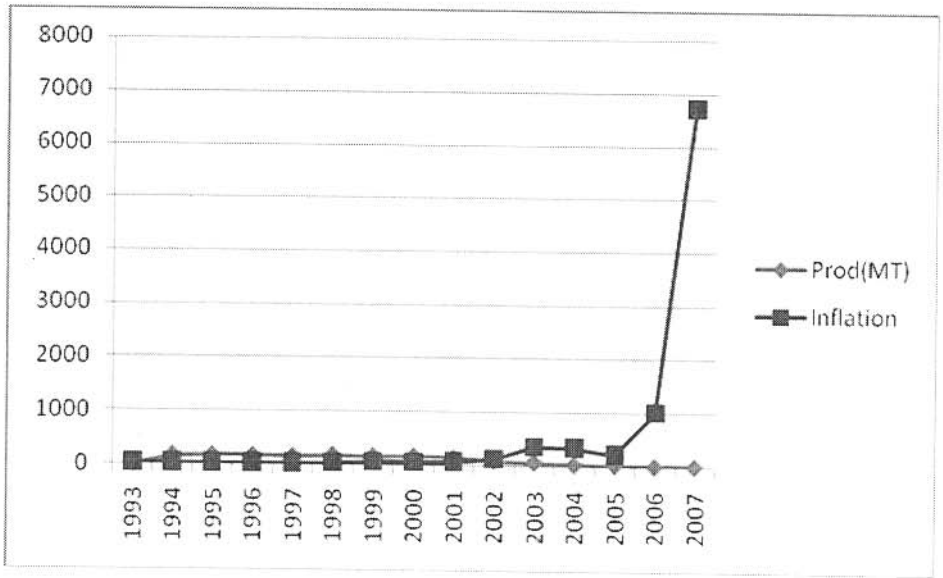
Source: Ministry of Agriculture, 1993-2007

Figure3: Effect of inflation on maize yield (kg/ha)



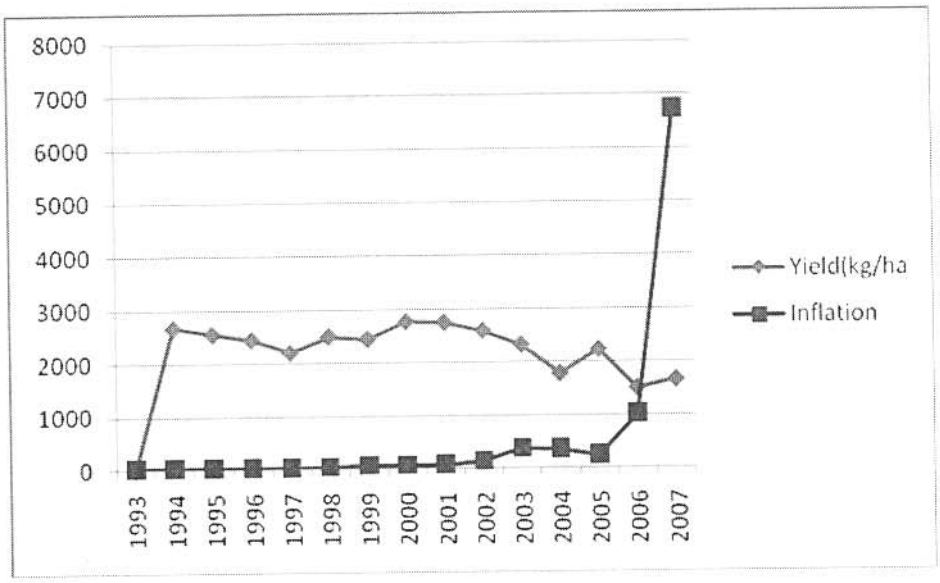
Source: Ministry of Agriculture, 1993-2007

Figure 4: Effect of inflation on tobacco production (tonnes) in Zimbabwe, 1993-2007



Source: Ministry of Agriculture, 1993-2007

Figure 5: Effect of inflation on tobacco yield (kg/ha)



Source: Ministry of Agriculture, 1993-2007

Figure 2-5 shows that inflation does affect production (tonnes) and yield (kg/ha). This is shown by the fact that production and yield were high when inflation was low and vice versa. The low productivity was mainly attributed to unavailability of inputs (agro-chemicals, fertilizers, fuel and labor).Furthermore; low production was also as a result of labor shortages due to migration and HIV/AIDS, lack and scarcity of spare parts, high production costs and high interest rates. High production costs in terms of fertilizers, agro-chemicals, labor, fuel and repairs/maintenance resulted in crop nutrient deficiency which accordingly transcends into reduced crop yields. Farmer respondents said that shortage of agro-chemicals such as pesticides led to crops being prone to diseases. The crop pest count exceeded the recommended levels and had an enormous impact on the growth rate of crops resulting in some crops dying due to heavy pests effect. Pest count increased from 1999 onwards even if crop rotation, burning of crop residue and timely planting was effectively done; pests became resistant to most pesticides because the chemical strength and the spraying times were delayed due to pesticides shortages and unavailability.

From the informal interviews with the farmer respondents, most farmer respondents indicated that they had been failing to get enough seeds and in time. Foreign currency shortages due to

inflationary pressures caused local seed growers, agro-chemicals and fertilizer companies to have problems in meeting the quantity farmers demanded due to acute shortage of raw materials. As such, farmers experienced low production and yield.

Poor yield of most crops which are early or late winter crops like tobacco, wheat, tobacco, winter maize, nursery plants and tree seedlings did not record good results because irrigation schedules were disrupted or at times cancelled before the crop was established due to vandalized transformers and irrigation infrastructure which could not be afforded to be repaired.

4.4.2.: Establishing the relationship between inflation and crop production variables

In the regression equation, y (the dependent variable) was either production or the yield of a particular crop. In all cases, the independent variable, x, was inflation.

Table 12: Results of regression analysis of crop enterprise variables (production and yield versus inflation)

Crop	Equation	R-sq	p-value
Maize	(1) Prod = 519608 - 79.2 inflation	22.8%	0.072
	(2) Yield = 3153 - 0.307 inflation	20.7%	0.088
Rapoko	(3) Prod = 809 - 0.0678 inflation	10.6%	0.303
	(4) Yield = 370 + 0.0103 inflation	3.8%	0.541
Groundnuts	(5) Prod =8602 - 0.879 inflation	15.0%	0.171
	(6) Yield = 771 - 0.0574 inflation	10.1%	0.268
Cotton	(7) Prod = 41869 - 6.79 inflation	19.6%	0.113
	(8) Yield = 1309 - 0.120 inflation	25.0%	0.069
Soya Beans	(9) Prod = 87810 - 12.1 inflation	26.0%	0.063
	(10) Yield = 2085 - 0.0303 inflation	4.2%	0.483
Edible Dry Beans	(11) Prod = 2070 - 0.0273 inflation	1.1%	0.761
	(12) Yield = 671 - 0.0351 inflation	32.3%	0.068
Mhunga	(13) Prod = 260 - 0.0280 inflation	11.3%	0.285
	(14) Yield = 385 - 0.0191 inflation	4.5%	0.509
Sorghum	(15) Prod = 19448 - 2.65 inflation	22.9%	0.071
	(16) Yield = 2128 - 0.205 inflation	25.6%	0.054
Tobacco	(17) Prod = 131008 - 20.8 inflation	27.8%	0.053
	(18) Yield = 2398 - 0.132 inflation	33.0%	0.032

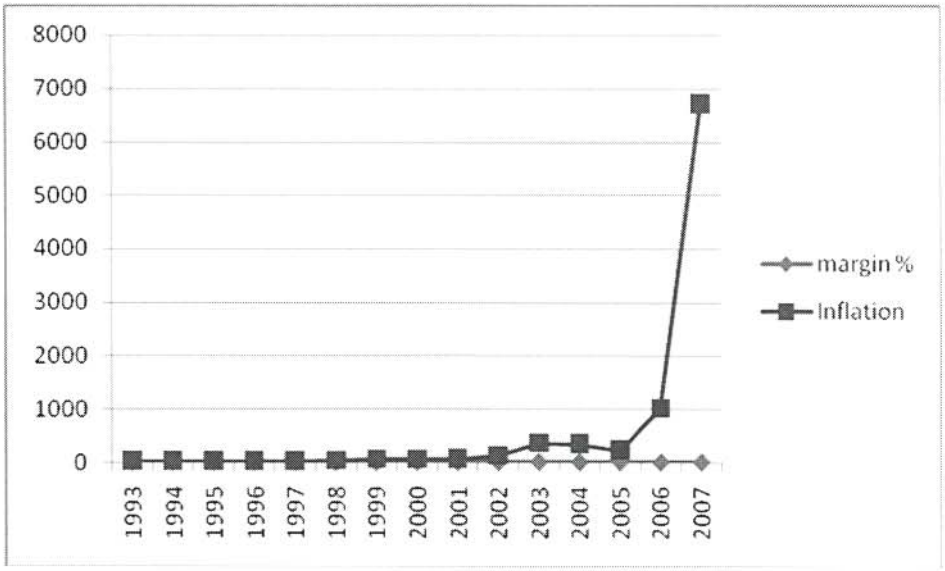
The analysis in table 12 above sought to establish if there was a relationship between inflation and crop production variables of production in tonnes and yield in kg/ha. Area is not considered in this analysis as the influence of inflation on it is largely indirect and insignificant.

The p values in the analysis of most of the crop enterprises indicate the values above 0.05, which means statistically there is no significant relationship. The p values below 0.05 means statistically there is a significant relationship. The p values of the crops like rapoko (P=0.303, Y=0.541), groundnuts (P=0.171, Y=0.268), Edible dry beans (P=0.761, Y=0.068) and mhunga (P=0.285, Y=0.509) are very much above 0.05. This is an indication that there is statistically no relationship between these crops' variables of production and yield and inflation. The reason being that all of the mentioned crops do not need much of the inputs like fertilizers and agro-chemicals, they only need to be grown on suitable soils. Crops like tobacco need a lot of inputs from the land preparation stage to harvesting stage; this explains the P values of production (0,053) and Yield (0.032). This means there is statistically a strong relationship between tobacco growing and inflation. Furthermore, tobacco growing requires fuel, electricity, intensive labor, fertilizers and agro-chemicals; as such since these aforementioned inputs are the most affected when inflation takes toll, hence the strong relationship.

However, all the crops regardless of the inputs requirements, when inflation starts to rise sporadically, it affects all the crops production as is shown in the line graphs above. There it shows that crop production was high when inflation was low and low when inflation was high. Thus, therefore it follows that inflation does affect crop production.

Furthermore, in regression analysis, the coefficient of determination R^2, which is the square of the correlation coefficient, estimates the percent of the total variation in variable y attributable to the variation of the input variable (x) given a regression equation $y = a + bx$. The coefficient of determination can also be used to evaluate the adequacy of a regression model and for purposes of predicting future outcomes given additional information. The value ranges between 0 and 1 or expressed as a percentage between 0 and 100%. The greater the value of the coefficient of determination means that the independent variable has greater influence on the dependent variable. Also in regression, R^2 reflects on how well the constructed regression line approximates the real data points. Given the results obtained in this study, it appears that there are more factors

Figure 7: Wheat profit margin



Source: Grain Marketing Board of Zimbabwe, 1993-2007

From the line graphs it can be seen that from 1993 to about 2002 farmers were only breaking even, thus only recovering their production costs and not realizing a profit. This is attributed to the government fixed profit margin of 20% despite the ever escalating inflation. From 2002 when inflation started to increase rapidly, it happened to be above the profit margin percentage, thus farmers were then operating at a loss. In Zimbabwe grain crops prices are determined by the government. This eating away by inflation of profit margin led to some commercial farmers reducing crop hectarage and in low productivity and poor yield. Farmers could not develop their farms because they had no profit to plough back.

4.4.4. Showing the impact of inflation when it started to hyper inflate

Table14: Analysis of Crop production before and after hyper inflation (2005/2006 and 2006/2007)

KIND OF CROP		TOTAL 2005/2006	TOTAL 2006/2007	PERCENTAGE CHANGE
Maize	Area planted(ha)	1713191	1445815	-15.61
	Crop reaped (t)	1719679	1161610	-32.45
	Yield (kg/ha)	1004	803	-19.96
	Sales	643359	382084	-40.61
Sorghum	Area planted (ha)	265192	270559	2.02
	Crop reaped (t)	125042	81571	-34.77
	Yield (kg/ha)	492	301	-36.06
	Sales	30953	1303	-95.79
Mhunga	Area planted (ha)	175924	155306	-12
	Crop reaped (t)	47584	28773	-39.53
	Yield (kg/ha)	270	185	-31.50
	Sales	2775	1408	-49.26
KIND OF CROP		**TOTAL 2005/2006**	**TOTAL2006/2007**	**PERCENTAGE CHANGE**
Rapoko	Area planted (ha)	57124	35120	-38.52
	Crop reaped (t)	26714	14963	-43.99
	Yield (kg/ha)	468	426	-8.89
	Sales	2801	1722	-38.52
Tobacco	Area planted (ha)	38865	49802	28.14
	Crop reaped (t)	58008	70603	21.71
	Yield (kg/ha)	1493	1418	-5.02
	Sales	58008	70603	21.71
Cotton	Area planted (ha)	266084	348696	31.05

	Crop reaped (t)	248257	223996	-9.77
	Yield (kg/ha)	933	642	-31.15
	Sales	248257	223996	-9.77
KIND OF CROPS		**TOTAL 2006**	**TOTAL 2007**	**PERCENTAGE CHANGE**
Groundnuts (unshelled)	Area planted (ha)	177196	224318	26.59
	Crop reaped (t)	89485	100168	11.94
	Yield (kg/ha)	505	447	-11.58
	Sales	23181	23560	1.63
Sunflower (Threshed)	Area planted (ha)	46725	67145	43.70
	Crop reaped (t)	20816	27503	32.12
	Yield (kg/ha)	446	410	-8.06
	Sales	5926	7624	28.65
Soya beans (Threshed)	Area planted (ha)	47137	62099	31.74
	Crop reaped (t)	83352	101904	22.26
	Yield (kg/ha)	1768	1641	-7.20
	Sales	69324	84477	21.86
Edible dry beans For consumption	Area planted (ha)	66007	56215	-14.83
	Crop reaped (t)	50413	30267	-39.96
	Yield (kg/ha)	764	538	-29.50
	Sales	17769	13997	-21.23
Paprika	Area planted (ha)	5762	2065	-64.16
	Crop reaped (t)	5228	1027	-80.36
	Yield (kg/ha)	907	497	-45.19

Source: Central Statistical Office of Zimbabwe, 2004/2005-2005/2006

Summary of the table analysis

Grain crops:

Tobacco yield went down by 5 percent in 2006/2007. All other variable indicators took some positive changes in 2007 defining it as one successful season for the leaf crop.

Cotton.

The increase in hectares for the 2006/2007 season, with a decrease in production transformed to a 31.15 percent fall in cotton yield. Thus the additional land could not bring a positive charge for both production and yield.

Groundnuts.

The increase in area with a less increase in production led to a decrease in yield of 11.58 percent from that of 2005/2006 season. Both area and production lose by 26.59 and 11.94 percent respectively, so was sales which slightly went up by 1.63 percentage points.

Sunflower.

With production increasing less than the increase in area, yield could not but fall as sales.

Soya beans, edible dry beans and paprika.

All the variable indicators for edible dry beans and paprika went on a negative path with area and production for the latter falling by as much as 64% and 80% respectively. The area and production figures for Soya beans increased while yield went down. **(CSO, 2007)**

Reasons for a decline in crop production

An analysis of secondary sources reveals a decline in crop production of the commercial farming community of Zimbabwe is attributable to an amalgam of factors. For instance, Region 2b, 3 and 4 experience dry spells therefore, supplementary irrigation is vital for good crop quality; irrigation infrastructure is devastated due to vandalism during farm invasions and a shortage of variables such as fertilizers, and chemicals. Compounding these factors were use of open pollinated (seed selected by farmers) gives low yield per hectare, whereas use of hybrids gives higher yield per hectare. Other factors that contributed to the fall in crop production were lack of extension services, lack of foreign currency\dicey exchange rates, acute shortage of labor as well as irrigation equipment shortage.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1. Conclusions

It can be concluded that a majority of the respondent farmers from the sample are blacks reflecting the results of the land acquisition process. Furthermore, a majority of the black farmers who participated in this study is males and in the age range of 51-60 and, so are the whites, predominantly males of the age cohort 51-60 years old.

In terms of educational qualifications in agriculture a majority of the white farmers are better off than their counterparts at 42.5% and blacks only 8.3%. This suggests that the white commercial farmers are better off in the craft of farming than the black commercial farmers.

More than 50% of the respondent farmers were engaged in crop production across the color divide and were concentrated in the fertile regions 1 and 2, followed by animal rearing. However, a shortage of labor resulting from an exodus of non-nationals as well as the impact of the HIV/AIDS pandemic are adversely affecting farming activities on these farms.

The study shows that a majority of the farmers both white and black face numerous physical environmental constraints during the 1993 - 2007 period such as vandalism of transformers and irrigation equipment, the wanton destruction of vegetation as well as the disturbance of water supplies. Some of these challenges have resulted in electricity disruptions, inability to irrigate crops, siltation of rivers which flow through these farms as well as the destabilization of the ecosystem.

The results of the study indicates that both farmers are seriously affected by economic constraints, but the black farmers are worse off by virtue of being not well established and experienced as well as lack of technical knowhow. Furthermore, white farmers still take advantage of good reputation with financial institutions as far as funding is concerned, as

opposed to their counterparts who are still new in the industry and without a credible track record.

In this study all the commercial farmers groups are riddled with the social constraints, but the white commercial farmers are in a better position because they can bounce back on their reserves and foreign accounts in some countries to cushion them against some of these constraints, e.g. to retain their labor they have resorted to paying their workers in both cash and kind, which their counterparts cannot do due to a paucity of resources.

The study reveals that the farmers are also affected by political constraints in the midst of an inflationary environment. Among these constraints and most importantly is the scrapping off of the title to the land, which transcends into lack of collateral. However, a comparison of the two farmer groups, suggests that white farmers are having serious problems with securing of inputs from the Grain Marketing Board and disruptive political meetings, as compared to the black farmers principally perhaps on this basis of race according to them.

According to the respondent commercial farmers in the study, Zimbabwe's commercial farming sector is bound to the country's political stability, macro-economic stability, maintenance of law and order, long-term security of tenure and incentive price for commodities. The way forward for Zimbabwe's commercial farming sector survival is a strategy of accommodation in terms of greater inclusion of all major players, that is public and private sectors, bringing back tenure security and the introduction of production incentives. A reversal of the land redistribution is neither politically feasible nor a prerequisite to recovery, noting that sustainable land utilization requires key land, agricultural and economic measures to increase agricultural productivity, investment and exports.

Furthermore, the gathered information showed that commercial farming sector has shown a negative growth trend in crop production. The negative growth in the production of both grain and industrial crops was due to a decline in the harvested area and also to the decline in yield. Farmers highlighted that many factors could change the present trend of negative growth in the production of all crops in commercial farming sector. These includes most importantly leveling

off the political ground and the introduction of sound economic policies and productive producer prices, government partnering the private sector in revamping and rejuvenating the commercial farming sector, pronounced usage of insecticides, disease resistant cultivars, herbicides, fertilizers and other crop protection technologies.

From the literature review, it showed that as inflation increases, prices paid by farmers for various inputs increase faster than the prices they receive for their products; thereby the terms of trade for farmers deteriorate as the rate of inflation rises. Furthermore, the low current income from farming motivated farmers to seek higher support prices and to extend price support policies to more commodities. Such policies result in further prices and higher rates of inflation.

5.2. Recommendations

Politics of the land issue has to be resolved between the Government of Zimbabwe and the former colonial master United Kingdom, for the political impasse precipitated into most of the economic challenges the country is going through.

Furthermore, the Government of Zimbabwe and financial sector need to work hand in glove so as to avail agricultural loans and promote agricultural institutions for the benefit of the commercial farmer. The only way the government can entice the financial sector into the partnership is through reintroducing title deeds to the farmers. Without collateral the farmer cannot talk business with the financial institutions. If this happens, the commercial farmer will be able to get inputs, finance, foreign currency, labor force, improve infrastructure, extension service, maintenance of machinery and equipment and medication and recreation. Ready availability of inputs to farmers will help to improve output due to timelier planting.

For commercial farming to be revived, a comprehensive package to re-enforce policy measures to restore macro-economic stability is of great significance and this will therefore need to encompass the following: consistent fiscal consolidation and expenditure restructuring focusing on capital development; health and education; phasing out quasi-fiscal operations and allocating all resources through the National Budget; elimination of wholesale subsidization; dis-inflation monetary policy and interest rate management framework targeting reduction in money supply growth; an appropriate exchange rate regime and incentives to ensure exporter's viability; unlocking balance of payments support and external lines of credit: unlocking foreign exchange resources from the Diaspora; Curbing foreign exchange leakages in the economy; removal of price distortions and conclusion of a social contract binding government, business and labor; enhancing agricultural production to ensure food security; promotion of mining and tourism development; enhancing infrastructure development; strengthening and streamlining National Social Protection Networks and Programmes;supportive parastatal and local authorities; revitalizing agricultural institutions to aid farmers; rejuvenate the service sectors of the country like hospitals so as to have a healthy workforce ;decentralize distribution of inputs so as to include agro-stockists dealers; reinstate irrigation fund to restitute vandalized irrigation infrastructure; leave prices to the dictates of the market forces; and avail all credit lines(small, medium and long-term) to farmers.

Zimbabwe needs to pay more serious attention to sustainable farming techniques that do not enslave farmers to high input costs which they cannot afford to purchase. This means, moving away from a frame of agricultural reference that has since stopped working. Sticking to the old

frame is like running very hard and fast, but in the wrong direction. No matter how much faster you run, you will never reach your destination. You would be better off turning to the right direction, even if by then you are too exhausted from your previous error to maintain your previous wrong-headed speed.

Furthermore, for a country like Zimbabwe that has been largely cut off from international credit and facing close to a decade of serious fuel shortages, biofuel production is an excellent idea that should be encouraged and expanded. Taking into account that commercial farms have been reduced in size, there is need to encourage alternative, non-fertilizer ways of building up soil fertility, which are suited for small holder farming and which are gaining increasing and respectability across the world.

For example, Cuba was forced to do this after the disintegration of the Soviet Union, removing the supports it had received from it. The Cubans have built up a different type of agricultural system entirely, with a heavy reliance on ecological agriculture. This has drastically cut their dependence on expensive imported farming inputs while retaining admirable agricultural productivity.

The foreign currency "shortages" that are a big part of the reason why commercial farmers can not import the much needed inputs may well persist into the foreseeable future. As such, the Zimbabwe's agricultural authority needs to begin to think outside the box for solutions to many of the problems besetting the agricultural sector. They need to stop to continue to bang their heads against the wall every year with plans that are simply no longer workable in the prevailing economic environment. The government needs to involve the private sector in sourcing inputs. In this case the seed, fertilizer and agro-chemical companies would not be importing finished products, but the raw materials, as long as they could be assured their prices would cover the high costs of foreign currency obtainable largely on the black market. There would be many "sharks" who would take advantage of the resultant situation of shortages and chaos to fleece the farmers. But trying to control that while ensuring essential goods are available, even if expensive, seems better than relying on a system of total dependence on the Reserve Bank of Zimbabwe (RBZ).

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up and financial sector stability) to address major cost- push factors of inflation such as fuel prices, cost of money, Zimbabwe Electricity Supply Authority(ZESA) tariffs, logistical rigidities, salaries/wage increases, irrigation capacity, coal prices, distribution channels, rates and rentals, sharp exchange rate depreciations and ad hoc service charges.

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```
MTB > Regress 'Area' 1  'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Area = 153126 - 17.1 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      153126       12196      12.56    0.000
Inflatn      -17.058       6.921      -2.46    0.028

s = 44312       R-sq = 31.9%     R-sq(adj) = 26.6%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1 11929862144 11929862144      6.08    0.028
Error        13 25526226944  1963555968
Total        14 37456089088

Unusual Observations
Obs.  Inflatn       Area        Fit  Stdev.Fit   Residual    St.Resid
 15      6724      55683      38430      43827      17253       2.64RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Productn' 1  'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Productn = 519608 - 79.2 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      519608       71234       7.29    0.000
Inflatn       -79.15       40.42      -1.96    0.072

s = 258810      R-sq = 22.8%     R-sq(adj) = 16.8%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1 2.56840E+11 2.56840E+11      3.83    0.072
Error        13 8.70771E+11 66982375424
Total        14 1.12761E+12

Unusual Observations
Obs.  Inflatn   Productn        Fit  Stdev.Fit   Residual    St.Resid
 15      6724      80986     -12577     255978      93563       2.45RX
```

```
R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1  'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Yield = 3153 - 0.307 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      3153.0       293.4      10.75    0.000
Inflatn      -0.3066      0.1665      -1.84    0.088

s = 1066        R-sq = 20.7%     R-sq(adj) = 14.6%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1     3854865     3854865      3.39    0.088
Error        13    14774114     1136470
Total        14    18628978

Unusual Observations
Obs.  Inflatn      Yield        Fit  Stdev.Fit   Residual    St.Resid
 15      6724       1454       1091       1054        363       2.31RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB >
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RAPOKO PRODUCTION

```
MTB > Regress 'Area' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Area = 2574 - 0.265 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      2574.2       729.3       3.53    0.005
Inflatn      -0.2645      0.3702      -0.71    0.491

s = 2333        R-sq = 4.9%      R-sq(adj) = 0.0%

Analysis of Variance
```

```
SOURCE        DF          SS          MS          F        p
Regression     1     2778831     2778831       0.51    0.491
Error         10    54407792     5440779
Total         11    57186624

Unusual Observations
Obs.  Inflatn       Area        Fit  Stdev.Fit   Residual     St.Resid
  7       133       9103       2539        712       6564       2.96R
 12      6724        860        795       2309         65       0.20 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Prod' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Prod = 809 - 0.0678 Inflatn

Predictor        Coef       Stdev    t-ratio        p
Constant        808.9       123.0       6.58    0.000
Inflatn      -0.06784     0.06244      -1.09    0.303

s = 393.5       R-sq = 10.6%     R-sq(adj) = 1.6%

Analysis of Variance

SOURCE        DF          SS          MS          F        p
Regression     1      182731      182731       1.18    0.303
Error         10     1548116      154812
Total         11     1730847

Unusual Observations
Obs.  Inflatn       Prod        Fit  Stdev.Fit   Residual     St.Resid
 12      6724        393        353        389         40       0.72 X

X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Yield = 370 + 0.0103 Inflatn

Predictor        Coef       Stdev    t-ratio        p
Constant       369.72       32.03      11.54    0.000
Inflatn       0.01028     0.01626       0.63    0.541
```

```
s = 25294       R-sq = 19.6%     R-sq(adj) = 12.9%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1  1874020864  1874020864      2.93    0.113
Error        12  7677732352   639811008
Total        13  9551753216

Unusual Observations
Obs.  Inflatn       Prod        Fit  Stdev.Fit   Residual    St.Resid
 14      6724       5288      -3793      25023       9081       2.46RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Yield = 1309 - 0.120 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      1309.0       109.8      11.92    0.000
Inflatn     -0.12046     0.06020      -2.00    0.069

s = 383.8       R-sq = 25.0%     R-sq(adj) = 18.8%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1      589635      589635      4.00    0.069
Error        12     1767282      147273
Total        13     2356917

Unusual Observations
Obs.  Inflatn      Yield        Fit  Stdev.Fit   Residual    St.Resid
 14      6724        626        499        380        127       2.27RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB >
```

SOYA BEANS PRODUCTION

```
MTB > Regress 'Area' 1 'Inflatn';
SUBC>   Constant.
```

```
Regression Analysis


The regression equation is
Area = 41945 - 5.59 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant       41945        4755       8.82    0.000
Inflatn       -5.592       2.606      -2.15    0.053

s = 16615       R-sq = 27.7%     R-sq(adj) = 21.7%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1  1270480640  1270480640      4.60    0.053
Error        12  3312550144   276045856
Total        13  4583030784

Unusual Observations
Obs.  Inflatn       Area        Fit  Stdev.Fit   Residual    St.Resid
 14      6724      10815       4348      16437       6467       2.67RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Prod' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Prod = 87810 - 12.1 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant       87810       10729       8.18    0.000
Inflatn      -12.069       5.881      -2.05    0.063

s = 37490       R-sq = 26.0%     R-sq(adj) = 19.8%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1  5918422528  5918422528      4.21    0.063
Error        12 16866107392  1405508992
Total        13 22784530432

Unusual Observations
Obs.  Inflatn       Prod        Fit  Stdev.Fit   Residual    St.Resid
 14      6724      20074       6664      37088      13410       2.45RX

R denotes an obs. with a large st. resid.
```

```
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Yield = 2085 - 0.0303 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant     2085.02       76.19      27.37    0.000
Inflatn     -0.03026     0.04177      -0.72    0.483

s = 266.2       R-sq = 4.2%      R-sq(adj) = 0.0%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1       37200       37200      0.52    0.483
Error        12      850617       70885
Total        13      887817

Unusual Observations
Obs.  Inflatn      Yield        Fit  Stdev.Fit   Residual    St.Resid
 14      6724     1856.0     1881.6      263.4      -25.6      -0.66 X

X denotes an obs. whose X value gives it large influence.

MTB >
```

DRYBEANS PRODUCTION

```
MTB > Regress 'Area' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Area = 3154 + 0.161 Inflatn

11 cases used 1 cases contain missing values

Predictor       Coef       Stdev    t-ratio        p
Constant      3153.7       302.6      10.42    0.000
Inflatn       0.1613      0.1472       1.10    0.302

s = 925.8       R-sq = 11.8%     R-sq(adj) = 2.0%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
```

```
Regression     1      1028577      1028577      1.20    0.302
Error          9      7714388       857154
Total         10      8742965

Unusual Observations
Obs.   Inflatn       Area        Fit  Stdev.Fit   Residual    St.Resid
  9       350       5210       3210        287       2000       2.27R
 12      6724       4110       4238        917        -128      -0.99 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Prod' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Prod = 2070 - 0.0273 Inflatn

11 cases used 1 cases contain missing values

Predictor       Coef       Stdev    t-ratio        p
Constant      2070.4       178.8      11.58    0.000
Inflatn     -0.02727     0.08701      -0.31    0.761

s = 547.1       R-sq = 1.1%      R-sq(adj) = 0.0%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1       29399       29399      0.10    0.761
Error         9     2693983      299331
Total        10     2723382

Unusual Observations
Obs.   Inflatn       Prod        Fit  Stdev.Fit   Residual    St.Resid
  9       350       3475       2061        169       1414       2.72R
 12      6724       1826       1887        542        -61      -0.80 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Yield = 671 - 0.0351 Inflatn

11 cases used 1 cases contain missing values
```

```
Predictor       Coef        Stdev    t-ratio        p
Constant      670.65        34.82      19.26    0.000
Inflatn     -0.03511      0.01695      -2.07    0.068

s = 106.6       R-sq = 32.3%     R-sq(adj) = 24.8%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1       48752       48752      4.29    0.068
Error         9      102192       11355
Total        10      150944

Unusual Observations
Obs.   Inflatn      Yield        Fit  Stdev.Fit   Residual    St.Resid
  5        56      890.0      668.7       34.5      221.3      2.19R
 12      6724      444.0      434.6      105.5        9.4      0.64 X

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB >
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MHUNGA PRODUCTION

```
MTB > Regress 'Area' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Area = 672 - 0.0514 Inflatn

Predictor       Coef        Stdev    t-ratio        p
Constant       672.4        119.0       5.65    0.000
Inflatn     -0.05137      0.06040      -0.85    0.415

s = 380.6       R-sq = 6.7%      R-sq(adj) = 0.0%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1      104783      104783      0.72    0.415
Error        10     1448569      144857
Total        11     1553353

Unusual Observations
Obs.   Inflatn        Area         Fit  Stdev.Fit   Residual    St.Resid
  6        72        1583         669        117        914      2.53R
 12      6724         338         327        377         11      0.20 X
```

```
R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Productn' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Productn = 260 - 0.0280 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      260.21       48.84       5.33    0.000
Inflatn     -0.02801     0.02479      -1.13    0.285

s = 156.2       R-sq = 11.3%     R-sq(adj) = 2.5%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1       31162       31162      1.28    0.285
Error        10      244012       24401
Total        11      275174

Unusual Observations
Obs.   Inflatn    Productn        Fit  Stdev.Fit   Residual    St.Resid
 12      6724        98.0       71.9      154.6       26.1       1.18 X

X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Yield = 385 - 0.0191 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      384.99       55.11       6.99    0.000
Inflatn     -0.01915     0.02797      -0.68    0.509

s = 176.3       R-sq = 4.5%      R-sq(adj) = 0.0%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1       14554       14554      0.47    0.509
Error        10      310699       31070
Total        11      325253

Unusual Observations
```

```
Obs.  Inflatn      Yield        Fit  Stdev.Fit   Residual    St.Resid
 12      6724      290.0      256.3      174.5       33.7       1.35 X

X denotes an obs. whose X value gives it large influence.

MTB >
```

SORGHUM PRODUCTION

```
MTB > Regress 'Area' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Area = 8836 - 0.829 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      8835.9       697.9      12.66    0.000
Inflatn      -0.8295      0.3960      -2.09    0.056

s = 2535        R-sq = 25.2%     R-sq(adj) = 19.5%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1    28208810    28208810      4.39    0.056
Error        13    83572992     6428691
Total        14   111781800

Unusual Observations
Obs.  Inflatn       Area        Fit  Stdev.Fit   Residual    St.Resid
 15      6724       3654       3259       2508        395       1.06 X

X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Prod' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Prod = 19448 - 2.65 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant       19448        2373       8.20    0.000
Inflatn       -2.649       1.347      -1.97    0.071

s = 8622        R-sq = 22.9%     R-sq(adj) = 17.0%
```

```
Analysis of Variance

SOURCE       DF          SS          MS          F        p
Regression    1   287702464   287702464       3.87    0.071
Error        13   966318784    74332216
Total        14  1254021248

Unusual Observations
Obs.  Inflatn       Prod        Fit  Stdev.Fit   Residual    St.Resid
 15      6724       3326       1637       8527       1689       1.33 X

X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Yield = 2128 - 0.205 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      2128.4       170.9      12.45    0.000
Inflatn     -0.20516     0.09700      -2.12    0.054

s = 621.1       R-sq = 25.6%     R-sq(adj) = 19.9%

Analysis of Variance

SOURCE       DF          SS          MS          F        p
Regression    1     1725564     1725564       4.47    0.054
Error        13     5014782      385752
Total        14     6740346

Unusual Observations
Obs.  Inflatn      Yield        Fit  Stdev.Fit   Residual    St.Resid
 15      6724        908        749        614        159       1.74 X

X denotes an obs. whose X value gives it large influence.

MTB >
```

TOBACCO PRODUCTION

```
MTB > Regress 'Area' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Area = 52674 - 7.78 Inflatn
```

```
Predictor       Coef       Stdev    t-ratio        p
Constant       52674        6697       7.87    0.000
Inflatn       -7.776       3.671      -2.12    0.056

s = 23402       R-sq = 27.2%     R-sq(adj) = 21.1%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1  2457227776  2457227776      4.49    0.056
Error        12  6571785728   547648832
Total        13  9029013504

Unusual Observations
Obs.  Inflatn       Area        Fit  Stdev.Fit   Residual    St.Resid
 14      6724       9405        388      23151       9017       2.64RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Prodctn' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis


The regression equation is
Prodctn = 131008 - 20.8 Inflatn

Predictor       Coef       Stdev    t-ratio        p
Constant      131008       17637       7.43    0.000
Inflatn      -20.763       9.669      -2.15    0.053

s = 61631       R-sq = 27.8%     R-sq(adj) = 21.7%

Analysis of Variance

SOURCE       DF          SS          MS         F        p
Regression    1 17516494848 17516494848      4.61    0.053
Error        12 45581291520  3798440960
Total        13 63097786368

Unusual Observations
Obs.  Inflatn     Prodctn        Fit  Stdev.Fit   Residual    St.Resid
 14      6724       15523      -8594      60971      24117       2.68RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB > Regress 'Yield' 1 'Inflatn';
SUBC>   Constant.

Regression Analysis
```

```
The regression equation is
Yield = 2398 - 0.132 Inflatn

Predictor       Coef        Stdev    t-ratio        p
Constant     2398.43        98.93      24.24    0.000
Inflatn     -0.13189      0.05423      -2.43    0.032

s = 345.7       R-sq = 33.0%     R-sq(adj) = 27.4%

Analysis of Variance

SOURCE        DF          SS          MS          F        p
Regression     1      706822      706822       5.91    0.032
Error         12     1434136      119511
Total         13     2140957

Unusual Observations
Obs.   Inflatn      Yield        Fit  Stdev.Fit   Residual    St.Resid
 13      1017     1499.0     2264.3       94.5     -765.3      -2.30R
 14      6724     1651.0     1511.6      342.0      139.4       2.76RX

R denotes an obs. with a large st. resid.
X denotes an obs. whose X value gives it large influence.

MTB >
```

APPENDIX B: Grain Marketing Board of Zimbabwe Data on Purchase Price and Cost of Production.

Maize

Year	Selling Price(ZWD)	Cost of Production(ZWD)	Profit Margin(ZWD)	Profit Margin %
1993	550	458	92	16.73
1994	900	750	150	16.67
1995	900	750	150	16.67
1996	1,050	875	175	16.67
1997	1,200	1,000	200	16.67
1998	1,200	1,000	200	16.67
1999	2,400	2,000	400	16.67
2000	4,200	3,500	700	16.67
2001	5,500	4,583	917	16.67
2002	8,500	7,083	1,417	16.67
2003	28,000	23,333	4,667	16.67
2004	300,000	250,000	50,000	16.67
2005	750,000	625,000	125,000	16.67
2006	2,248,024	1,873,353	374,671	16.67
2007	52,350	43,625	8,725	16.67

Wheat

Year	Selling Price(ZWD)	Cost of Production(ZWD)	Profit Margin(ZWD)	Profit Margin %
1993	995	829	166	16.68
1994	1,450	1,208	242	16.69
1995	1,450	1,208	242	16.69
1996	2,100	1,750	350	16.67
1997	2,550	2,125	425	16.67
1998	2,550	2,125	425	16.67
1999	4,500	3,750	750	16.67
2000	5,500	4,583	917	16.67
2001	6,500	5,417	1,083	16.66
2002	25,500	21,250	4,250	16.67
2003	70,000	58,333	11,667	16.67
2004	776,205	646,838	129367	16.67
2005	1,749,218	1,457,682	291,536	16.67
2006	6,920,780	5,767,317	1,153,463	16.67
2007	217,913	181,595	36,318	16.67

APPENDIX C: Central Statistical Office Data on Crop Production and Reserve Bank of Zimbabwe data on Inflation Average%

Maize:

Year	Area(hectares)	Production(tonnes)	Yield(kg/ha)	Inflation Average%
1993	200 109	855861	4277	27.5
1994	212865	861332	4046	22.3
1995	195776	529042	2702	22.5
1996	192616	771211	4004	21.7
1997	173358	629928	3634	18.9
1998	151239	572855	3788	31.7
1999	160875	662244	4117	58.5
2000	160577	680942	4241	55.9
2001	155888	532388	3415	71.9
2002	128833	294120	2283	133.2
2003	126577	241340	1907	365.0
2004	93010	180181	1937	350.0
2005	70443	78062	1108	237.8
2006	62841	98882	1574	1016.7
2007	55683	80986	1454	6723.7

Tobacco:

Year	Area(hectares)	Production(tones)	Yield(kg/ha)	Inflation Average%
1993	-	-	-	27.5
1994	64090	171059	2669	22.3
1995	68700	175054	2548	22.5
1996	71621	174767	2440	21.7
1997	75816	166345	2194	18.9
1998	73886	184610	2499	31.7
1999	69238	169136	2443	58.5
2000	65282	180984	2772	55.9
2001	56145	154320	2749	71.9
2002	39363	101980	2591	133.2
2003	34208	79355	2320	365.0
2004	19744	35032	1774	350.0
2005	11022	24524	2225	237.8
2006	7927	11884	1499	1016.7
2007	9405	15523	1651	6723.7

Appendix D: Questionnaire

Section A: Demographic Data

- **Tick the appropriate box**

1. **Sex**

   Male [ ] **Female [ ]**

2. **Age**

   20- 25 years [ ] **25- 40 years [ ]** **Over 40 years [ ]**

3. **Marital status**

   Married [ ] **Single [ ]** **Divorced [ ]** **Widowed [ ]**

4. **Race**

   Black [ ] **White [ ]**

5. **Occupation**

   Full-time farmer [ ] **Part-time farmer [ ]**

6. **Ownership of farm**

   Leasehold [ ] **Freehold [ ]** **Allocated Fast Track [ ]**

7. **Highest Level of Education**

   Grade R- ZJC [ ] **'O' Level [ ]** **'A' Level [ ]**

   Certificate [ ] **Diploma in Agriculture [ ]** **Degree in Agriculture [ ]**

   Any other specify [ ]

Section B

8. **How long have you been staying on the farm?**

   0< 5 years [ ] **5< 10 years [ ]** **10< 15 years [ ]** **15 + years [ ]**

9. **Farming Activities within your farm**

Crop production [ ] Livestock farming [ ] Horticulture [ ] Others [ ]

10. **Who works on the farm?**

Casual workers [ ] Permanent workers [ ] Family & children [ ]

Seasonal workers [ ]

11. **Do you sometimes face difficulties to pay workers?**

No [ ] Yes [ ]

If yes specify the difficulties

_____

_____

12. **State challenges which you face as a farmer in payment of salaries and wages**

Economic [ ]

Political [ ]

Social [ ]

13. **In this environment which is ever changing which problems did you face as workers demanded higher salaries and wages?**

_____

_____

_____

14. **Which mechanisms did you put in place to retain your workers?**

_____

_____

_____

_____

Section C: Farmers' views on their activities within a hyperinflationary environment

15. In your own view, was the Fast Track Land Reform Programme good or bad?

Give your comment

_____
_____
_____
_____

16. What major challenges did you face as a farmer during the period from 2000-2007?

Planning [ ]

Finance [ ]

Support Services [ ]

Labor [ ]

Equipment [ ]

HIV/AIDS [ ]

Drought [ ]

Give a comment on each challenge

_____
_____
_____
_____
_____

17. **As a farmer which management strategy did you adopt to mitigate inflation? State each reason and explain**

_____

_____

_____

18. **What role did the government play to promote farming business on your farm?**

_____

_____

19. **What role did the private sector play before the year 2000?**

_____

_____

20. **State marketing problems encountered as prices fluctuated on day to day basis with regards to pricing of products and market set up.**