A CRITICAL APPRAISSAL OF THE HOME - BASED FOOD SECURITY PROJECTS WITH REFERENCE TO LAYERS AT MAKHUDUTHAMAGA-SEKHUKHUNE DISTRICT IN LIMPOPO PROVINCE.

BY

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DISSERTATION

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Abstract

It is beyond doubt that a large proportion of the population in the rural areas are experiencing great difficulty in securing adequate food in both amount and quality. Poverty alleviation programs are embarked in various countries with Makhuduthamaga being no exception.

The study was designed to evaluate the home-based egg production projects. The study was conducted at Makhuduthamaga sub- District of Sekhukhune District of Limpopo province.

Two instruments were used for data collection namely Delphi technique and two structured questionnaires. The Delphi technique was used for both the beneficiaries and the extension officers to identify, list and rank in order of importance the constraints which impacted negatively on egg production as well as the actions taken to address those constraints.

Two separate questionnaires were also used to collect data from both the beneficiaries and the extension officers. Out of twenty villages a list of 231 beneficiaries of starter up packs was identified. Krecjcie and Morgan (1970) sample estimation required 144 randomly selected beneficiaries of starter up packs to participate in the study which reflected 0.6 margin of error.

The two questionnaires with open ended and closed ended questions were piloted at Fetakgomo District in four villages with thirty one beneficiaries and ten extension officers. Reliability was found to be 0.81 skills, 0.80 for support from extension officers and 0.61 for government expectations.

The Statistical Package for the Social Sciences was used for the entering data collected. Descriptive statistics were used to analyse data. The findings revealed that the majority of the beneficiaries fall within the prescribed selection criteria. Almost all

except one village were given the starter up packs namely 18 layers, four bags of laying mash, cage, nipples, feeding trays and a cage as outlined in the policy. Training was considered by both the beneficiaries and the extension officers as inadequate for effective and efficient running of the home based egg production projects. The results revealed that the majority of beneficiaries did not meet government expectations. An acknowledgement was made that during the implementation of projects mistakes were committed by both beneficiaries and extension officers.

Analysis of variance was also used to determine the relationship between the level of education and the extent to which government expectations were met. There was no significant relationship between skills such as technical, management, financial, administration and the extent to which government expectations were met. However there was a significant relation between marketing skills and levels of education. The majority of beneficiaries had a low level of education.

Pearson correlation coefficient was used to determine whether there is a relationship between skills and support from the extension officers and the extent to which government expectation were met. Skills such as technical and marketing as well as the support from the extension officers attributed much to variations with regard to the extent to which government expectation were met.

Constraints were also encountered which impacted negatively on egg production. Extension officers identified the following constraints such as survey not done prior to distribution, insufficient human resources, training, insufficient monitoring, inadequate transport, inability of beneficiaries to purchase feed, inadequate starter packs and failure to establish cooperatives.

Beneficiaries identified constraints such as feed, training, diseases and unavailability of veterinarian, mortality of layers on arrival, theft and predation, inadequate starter packs, layers not of the same age and cages that are too small.

Out the constraints mentioned only three namely insufficient transport, inadequate starter up packs `and one aspect on feed i.e. soft shelled eggs were addressed.

Although the majority of beneficiaries considered home based egg production projects inadequate in providing access to adequate food, slightly over half of them favoured them as future household projects.

Declaration.

I **Mante Thabitha Daisy Monyela** declare that the dissertation hereby submitted to the University of Limpopo for the degree Masters of Agricultural extension has not been previously submitted for a degree at any University.

Signed……

Date……

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TO

My family Lesetja, Tshegofatso and Mabu.

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CHAPTER ONE

1. INTRODUCTION

It is beyond doubt that a large proportion of the population in rural, and to a growing extent, urban Southern Africa, is experiencing great difficulty in securing adequate food, in both amount and quality for a healthy productive life. Available literature purports that the problem of food insecurity is pervasive in Southern Africa and it has been steadily worsening for at least the last three decades (USAID 2003).

Whereas in the past years, grain shortfalls in the region could be filled with imports from South Africa, for the period 2002-2003 South Africa too has experienced lower than normal yields and production. The relief aid that is currently implemented is insufficient to meet the needs of the population as a result of the combination of the acute and chronic food insecurity, together with HIV/AIDS pandemic (USAID 2003).

According to USAID (2003:7), the continuing food crisis has brought great suffering to as many as 14 million inhabitants of the region. It is further indicated that there is little reason to suggest that the underlying causes of both chronic food and seasonal food insecurity will abate in the years ahead.

1.1Background to the study

The right of access to sufficient food is enshrined in section 27 of the South African Constitution. The Constitution obliges the state to provide legislation and other supporting measures to ensure that all citizens are enabled to meet their basic food needs.

The strategic framework for action to achieve food security was first outlined in the Reconstruction and Development Programme (RDP) of 1994, which identified food security as a basic human need.

In 2000, the Cabinet decided to launch an updated national food security strategy to streamline, harmonise and integrate diverse food security sub-programmes in South Africa into Integrated Food Security Strategy (IFSS).

The vision of the Integrated Food Security Strategy (IFSS) is to attain universal and sustainable access to a minimum daily, safe and nutritious food for a healthy, active and better life for all the people of South Africa. According to Statistics South Africa (2000), about 35% of the total population, or 14.3 million South Africans are currently vulnerable to food insecurity.

As a result of the statistical revelation, the South African cabinet announced in October 2002, urgent Government measures to reduce effects of escalating food prices on poverty stricken and low-income groups, thus giving rise to increased food insecurity. The government acknowledges that food relief is a short-term response to save lives and stem chronic food insecurity hence it accepted the necessity of linking the food relief scheme to medium and long-term self-sufficiency, sustainability and reduced dependency on food relief by the vulnerable communities. (National Department of Agriculture 2002:6). The Agricultural starter packs (ASP) which is part of food production was introduced for implementation as a medium measure which compliments the first phase i.e. food parcel scheme.

According to a report from Department of Agriculture (2002:6), the overall objective of the Agricultural starter packs is to provide the starter up support to newly

established and existing expanding operations to increase and sustain production either for own consumption, employment and income generation.

The Agricultural Starter Packs priority is for 245 000 households that received food relief as a result of the food crisis in the Limpopo province. It became imperative for those households to be assisted to avoid them relapsing into conditions of distress and once again require food parcels.

The Limpopo province as a lasting solution and a measure to reduce food insecurity to the vulnerable groups embarked on one category of Home Based Production Projects, which are among other three categories of Agricultural projects envisaged to support the food security programme. The projects that are being implemented in Home based – food Production projects are:

- vegetable production
- egg production
- milk production and
- fish production

The overall objective of the programme is to improve the food security of the poorer households through own production by the households as identified in the Health and Welfare system under National Food Emergency Program. (Limpopo Department of Agriculture 2003:3).

Beneficiaries of the projects are those who qualified for the food relief i.e. food parcels scheme. In order to qualify for the first phase the beneficiaries were to fall in one or more of the categories below:

- Households with a monthly expenditure of R200.00 or less

- Orphaned children
- Households headed by individuals infected and/or affected by HIV/AIDS
- Households headed by people with disabilities
- Child headed households
- Households that are victims of natural or other disasters

Households were to indicate which Home-based egg productions projects they prefer to be involved with i.e. to choose one from egg laying, dairy, and fish or vegetable production. From the above-mentioned production; layers were highly preferred by most households hence its implementation ahead of the others. Each household was to receive the following packs to start-up the process:

- 18 layers of 20 weeks old.
- 4 bags of laying mash
- Materials for assembling
    - ✓ nipples
    - ✓ feeding troughs and a
    - ✓ cage

The department had the following expectations with regard to the distribution of the layers:

- from the beneficiaries
    - ✓ proper maintenance with the help of extension officers
    - ✓ production, storage, consumption and selling of surplus as individual households or at anticipated formed cooperatives to be initiated by the department

- ✓ money accrued from the products was for the household needs and most important to pay for the layers' feed and for the buying of the next batch of layers in order to sustain the process.
- ✓ Assembling of nipples, feeding troughs and cages with the assistance of the extension officers.
- ✓ to be able to unblock nipples, put feeding troughs at correct places in cages during the process.

- from the extension officers:
  - ✓ updating the database of the beneficiaries
  - ✓ distribution of starter up packs
  - ✓ training of beneficiaries with the necessary skills such as technical, administrative, management, financial and marketing
  - ✓ managing the process as well as giving the necessary support to beneficiaries
  - ✓ strengthening of the producers local organisation i.e. ensuring that in each village a total number of twenty five households receive layers in order to eventually form a cooperative.
  - ✓ assist the beneficiaries on assembling of nipples, feeding troughs and cages during the process.

According to Limpopo department of Agriculture (2003:3) the culture of home based food production projects were to be promoted and understood by the beneficiaries within the community as an intervention strategy and not create dependency in any form.

The distribution of Agricultural Starter Packs started in July 2003. The target for the overall distribution of layers in Sekhukhune district was 5000 households for the financial year 2003-2004 as set by the Provincial government. The highest percentage of packs was to be distributed at Mkhuduthamaga, a sub-district with most food insecure households. The total number of Agricultural Starter up Packs already distributed to date is far below the target, which in itself indicates that there are problems either with management of the process or suppliers.

1.2 Definition of concepts.

1.2.1 Food security

Food security is a sustained and assured access by all social groups and individuals to food adequate in quantity and quality to meet nutritional needs (Barraglough 1991:1). At household level, it also implies stability in access to food through sufficient food provisioning and or food purchasing power whatever the season of the year.

According to a report from National Department of Agriculture and Land Affairs (2002:8) access for all people at all times to enough food for an active, healthy life can be related to the following components:

- Food availability: effective or continuous supply of food at both national and household level which is affected by input and output market conditions, as well as production capabilities of the agricultural sector.
- Food access or effective demand: ability of a nation and its households to acquire sufficient food on a sustainable basis. It addresses issues of purchasing power and consumption behaviour.
- Reliability of food: utilization and consumption of safe and nutritious food.
- Food distribution: equitable provision of food to points of demand at the right time and place. This spatial/time aspect of food security relates to the fact that a country might be food secure at the national level, but still have regional pockets of food insecurity, at various periods of the agricultural cycle which is the case in Limpopo province, where certain districts such as Mopani and Capricorn appear to be food secured with Sekhukhune being food insecure because it is often plagued by droughts, have massive unemployment and lack of markets opportunities.

1.2.2 Food insecurity

Bakker (1990:62) indicates that a state of food insecurity exists when members of a household have an inadequate diet or face the future possibility of an inadequate diet.

According to Bakker (1990:64) food insecurity is primarily viewed as a household problem which can occur in three ways i.e. i. temporary ii. cyclical and iii. chronic.
A temporary food insecurity is experienced because of shortages in food supply owing to unforeseen circumstances such as excessive drought.
Cyclical food insecurity is experienced when a household repeatedly lacks an adequate diet at specific times during the year.
Chronic food insecurity exists when a household lacks an adequate diet for substantial portions of the year.

To determine a regional or national food security one must understand household food insecurity. For Bakker (1990) a more accurate description of regional or national food insecurity can be found by aggregating households by the types of food insecurity that they experience because such aggregation would reveal the percentage of households which face food insecurity, as well as the percentage that are food secure.
At the household level, food insecurity leads to disproportionately high health and medical costs, high funeral expenses and low labour productivity. (National Department of Agriculture 2002).

1.2.3 Home based production projects

Home based-production projects are projects at household level aimed at an improvement of nutrition through household production, storage as well as creation of income through the sale of surplus production.

According to Hellen Keller International report (2004:3) homestead food production is not only important for food security and nutrition but also for helping poor households meet basic needs, thus contributing to poverty alleviation efforts.

The majority of poor rural producers are deficit producers, with seasonable vulnerable production. The challenge is to make the food insecure households agents of their own development hence the implementation of projects at the area of study.

The Limpopo Province embarked on Home-based production projects in order to empower the community as well as creating a sense of ownership amongst the participants, through strengthening the household food production, storage, distribution, and facilitating access to markets as well as imparting marketing skills.

1.3 Study Area

Sekhukhune district municipality is rural in nature and characterised by high levels of poverty and lack of social and economic development opportunities. The reasons for this situation amongst others are lack of basic infrastructure such as water, sanitation, roads and public transport, electricity and telecommunication that reinforces the underdevelopment patterns of the Sekhukhune area (Sekhukhune District IDP phase report: 2002).

The chief challenges facing this District are to ensure that basic services, which serve as catalyst for addressing the socio-economic challenges facing the Sekhukhune area, are provided to those lacking them and to maintain the existing services where they exist. The Sekhukhune District municipality is considered the most economically depressed within the provincial context. (K.M Associates Town planners 2002)
The Sekhukhune district is divided into five local municipalities with Makhuduthamaga being the most highly populated with high incidents of unemployment, illiteracy and poverty. It is one of the pilot projects in the province; the other being Bohlabela. Ninety percent of the population is rural with high youth unemployment rate.

According to K.M Associates Town planners (2002:1) Makhuduthamaga local municipality is situated in the lowveld region approximately 100km south of Polokwane. The municipality of Makhuduthamaga is made up of four components of the former transitional local councils namely; Ngwaritsi- Makhuduthamaga, Greater Nebo north, Tubatse Steelpoort and Noko-tlou Makhuduthamaga.
Makhuduthamaga local municipality is demarcated into 28 wards of 146 settlements with an average household size of about 5.41 and an average of 2006 people per settlement. It has a total area of the municipality estimated at 458 160.56 square kilometres.
There is a higher proportion of females in terms of gender break down of the total population. The main reason cited in the report is a possibility of labour migration to economic centres such as the metropolitan areas of Gauteng.

The majority of the communities in Makhuduthamaga are very poor and have low income, which is constrained by the rural economy that is unable to provide these people with the remunerative jobs or self-employment opportunities. From the report about 74.8% of the households have less than the subsistence income with 23.59% of them with no income.

1.4 Problem statement

The achievement of the food security and self-sufficiency at Makhuduthamaga may well depend on the effectiveness of the distribution of Agricultural Starter Packs and most important the effective and efficient management of the process. The progress towards food self-sufficiency may be attained when there is great reduction of dependency on food parcels and distribution of starter packs which can only be achieved with the full participation of all role players of the process.

A stage whereby most of the beneficiaries are able to produce, store and generate income is questionable taking into account that the area under study is characterised by high levels of poverty, illiteracy and lack of both social and economic development opportunities.

A state of dependency on distribution of starter packs cannot be disputed since there seem to be little preparations made in terms of promoting and inculcating a culture of sustainable home – based egg production Projects. If the process is managed effectively there will ultimately be an improvement of food security of poorer households

1.5 Aims and objectives of the study.

The aim of the study is to determine the sustainability of the home- based egg production projects as a strategy to reduce food insecurity.

The major objectives of the study are to:

- describe the beneficiaries of the layers
- determine whether the beneficiaries were equipped with the necessary skills required for sustaining the projects.
- identify the starter packs received by both the extension officers and the beneficiaries
- determine the extent to which government expectations related to layers were met.
- determine the relationship between the level of education and government expectations.
- determine the relationship between skills training and government expectations.
- identify constraints to egg production as perceived by both the extension officers and the beneficiaries.
- determine the extent to which constraints were addressed.
- formulate recommendations for improved egg production

1.6 Research questions.

- Is the selection of the beneficiaries in line with the policy?
- Were the beneficiaries trained with the necessary skills required for sustaining the projects?

- Did the beneficiaries receive starter up packs for home-based egg production as outlined in the policy?
- Did the beneficiaries meet expectations of the government with regard to household production?
- What is the relationship between the level of education and the extent to which government expectations are met?
- What is the relationship between skills training and the extent to which government expectations are met?
- What are constraints that affected implementation of household egg production projects?
- To what extent are constraints addressed?

1.7 Envisaged outputs.

At the end of study it is envisaged that the document will entail the description of the beneficiary of starter up packs, identification of items of starter up packs received, the extent to which beneficiaries were trained with the necessary skills, the extent to which government expectations were met as well as constraints encountered during the process and action taken to address them will also be included.

The relationships between the level of education and the extent to which government expectations are met, as well as that of between the skills training and the extent to which government expectations are met will be established.

1.8 Hypothesis

Home-based egg production projects are not sustainable.

1.9 Significance of the study

Practically this study hopes to contribute to the government's administrative and functional strategies on the implementation of the Home Based egg production projects and to find ways through which the household insecure groups or the beneficiaries can be assisted with the necessary knowledge and skills to reduce the number of households that are food insecure.

The study will also provide the basis for further research in this field such as the impact of Home Based production Projects on the welfare of households.

10 Limitations to the study

This study will be limited to the Makhuduthamaga, a sub district of Sekhukhune district because of both time constraints and lack of resources to cover other districts.

Chapter two

2. Literature review

2.1 Introduction.

The aim of reviewing similar experiences on egg production is to ensure that the paper's findings are based on a wide spectrum of inputs that will embrace both national and international spheres.

The chapter outlines food security, the impact of warning systems and food aid as well as the successes and failures of home based egg production projects.

2.2 Food Security

According to Devereux et al (2001:18) the primary food security objective facing most governments is to facilitate the movement of food insecure households to increasingly food secure states. Food security is a fundamental need, basic to all human needs and the organisation of social life. Access to necessary nutrients is fundamental not only to life per se, but also to stable and enduring social order.

A state of food security ensures that all members of every household in a nation have access throughout the year to a diet that is adequate for leading a continued, healthy and active working life. A society which can be said to enjoy food security is not only one which has reached a food norm… but which has also developed the internal structures that will enable it to lower the achieved level of food consumption. (Devereux et al 2001:18).

Households that are poor are vulnerable to food insecurity. Poverty in any society is relative and it implies that some groups are significantly worse off than others.

According to Chazan (1988:7) the food problem is closely linked to issues of food availability. Access to food products in many parts of Africa is glaringly unequal. Frequently food is visible in towns and countryside but it is not within reach to many segments of the population. Food scarcity impinges, albeit unequally on all sectors of the societies and on social classes.

> "Country-level aggregate data obscures the fact that even though a country may achieve adequate and relatively stable levels of food supply and prices, there may be great regional and local inequality and seasonal disparities in the distribution of consumption. For example within a given town or village, only part of the population may face a seasonal shortage of food or display marked deficiencies in its level of food intake. Similarly, aggregate data do not account for the fact that some members of a household may receive less food than others; thus the data may conceal the fact that some individuals, most likely women or children, may suffer from transitory seasonal declines in food intake while other family members do not."
> (Sahn 1989:3-4)

National food security easily obscures the specific needs of particular groups of people. According to Rau (1991), in 1988 the Sudanese on a national basis produced a substantial surplus of food, yet at least 1.5million people, were displaced from their homes due to war and took refuge at the capital where they did not have adequate food.

In South Africa, as in many other developing countries, food security is a concern. Ankomah (2001:3) indicates that among the poor households, particularly in the rural

areas, a significant number may be considered resource poor and therefore food insecure although South Africa is considered food self-sufficient

The obscurity of food security is also indicated in the report on integrated food security strategy for South Africa 2002, that South Africa was considered food secure at national level. The national food security indicators reveal that South Africa has been meeting food needs of its growing population from domestic sources in the past 20 years, yet there are millions of households who are food insecure i.e. from Statistics South Africa (2000); 14.3 million of South Africans remain vulnerable to food insecurity. The food insecurity for the vulnerable groups amongst others is as a result of natural disasters such as droughts, floods, political violence, HIV/AIDS etc.

Hubbard (1995:3) indicates that crises of national food security are usually started by widespread losses of households' food security such as crop failure. Food insecurity is no longer seen simply as a failure of agriculture to produce sufficient food at national level, but instead as a failure of livelihoods to guarantee access to sufficient food to people at the household level.

Devereux et al (2001) indicates that there are three kinds of households:

- enduring household which is able to maintain household food security on a continuous basis
- resilient household which suffers shocks, but recovers quickly and
- fragile household which become increasingly insecure in response to shocks.

The inability of the individual or household level to secure and maintain appropriate entitlement over adequate food is a pervasive problem in Southern Africa, which seem to be continuously worsening.

Food security is one of the most fundamental objectives of every nation. Johnson (1983:228) indicates that ultimately, food security concerns the individual or the family unit. Its principal determinant is purchasing power-income adjusted for the cost of what that income must buy.

According to Ankomanh (2001:2) the threats to food security arise from a combination of aspects such as climatological, ecological, socio-economic and political factors which individually and collectively place food systems under stress. The above mentioned aspects interact with factors such as market and access to food, credit, availability and sustainability of technology, terms of trade, pricing policies and other idiosyncratic factors to threaten food supply.

The majority of households in South Africa lack cash to purchase food. In the Integrated Food Security Strategy report it is indicated that underlying the lack of purchasing power is the limited scope of income opportunities especially in the rural areas (National Department of Agriculture and Land Affairs:2002). Food insecurity is a phenomenon of the poor, who spend the largest fraction of their income on food. The greatest incidence of absolute poverty is in rural areas and hence food insecurity is in the rural areas of the developing countries. For Rau (1991) people who are already poor are adversely affected because:

- they have lost the ability to raise or purchase food
- they have inadequate resources to respond to further hardships
- their positions are already so marginal and
- their edge of survival is already narrow.

With the above characteristics the unforeseen circumstances such as drought e.g. the Sahel droughts of 1973-1974 and 1983-1985; and the recent droughts at Makhuduthamaga, floods, loss of land to development projects, government policies and declining world commodity prices all can precipitate severe chronic food insecurity. The costs of food insecurity are high, since they affect all levels of social and economic life.

Bakker (1990:68) indicates that food security at a given moment does not necessarily imply food security in the future. Similarly food security at the national level does not guarantee that every individual in that nation has ensured access to an adequate diet. Based on the above statements households at the area of study which are currently food secure will not necessarily remain food secure and might experience varying states of food insecurity in the future i.e. each household has some likelihood of an improvement or worsening of its food security state.

2.3 Warning Systems

The need for adequate information on food security at local municipality, districts, provincial and national level is very important. For Devereux and Maxwell (2001) baseline information is always lacking on:

- who the food insecure are
- how many they are
- what their characteristics are (location, livelihood systems, access to resources, age, gender(etc)
- the nature of their food insecurity
- and the depth of their under nutrition.

According to USAID report (2003:46) there is a debate over food crisis which is occurring in Southern Africa with an increasing frequency on:

- how to better predict, mitigate and respond to them in future
- what might be done to reduce their frequency and severity and
- how to reduce the vulnerability of the people in the region to their devastating effects.

South Africa is no exception with regard to inadequate information and early warning systems. In the IFSS report an acknowledgement is made of the absence of a structured system of dealing with food security disasters, such as drought or floods. Drought that occurs at regular intervals at Makhuduthamaga is amongst other disasters, which substantially threatened the food security position in that area.

Alexandratos (1988:48) indicates that preparedness planning is essential at all levels i.e. donors, national, provincial, district and at municipalities as well as the assessment of needs through regular monitoring of the changing food situation is the prerequisite for a timely response.

According to Power (1976:62) an outcome from the World Food Conference held in November 1974 was global information and early-warning systems. Emphasis was on a continuous watch on the food situation so that assistance measures could be put into operation before disaster sets in.

From the above information it is very much necessary to have information needs and institutions to reduce food insecurity. Fallback options vary from one community to the other and ways of supporting them need to be investigated and discussed participatively. Regular seasonal cycle of preparedness is necessary to combat

disasters in areas that suffer periodic severe drought or floods. Resources available for assistance provide the greatest benefit when directed to those most in need hence proper identification of households that are food insecure is very much necessary.

Early warning systems, food security information systems at national, provincial, municipality level and agricultural market information systems will to a certain extent provide timely notice when a food crisis threatens and thus to elicit appropriate response. Failure to have warning systems will result in any measure, which is aimed at reducing food insecurity as dependable and not sustainable.

2.4 Food Aid

The most fundamental and debilitating food problem in Africa has been that of increasing absolute shortages. Food production has barely kept up with alarmingly increasing population growth. In most areas food supplies simply have not met or meet the existing needs hence the necessity for aid.

According to USAID report (2003:45) overall, long term causality of high levels of household food insecurity and poverty has not been adequately addressed, because of poor planning, implementation or both and insufficient resources. It is further indicated that the capacity to respond to short term emergencies, too, has been inadequate and the ability to better confront the causes is still largely lacking.

Ellis (1992:317) indicates that food aid is a method for disposing of food surpluses produced in the industrialized countries. He further distinguished between four categories of food aid:

- Program food aid: the largest category of food aid in quantitative terms, which is delivered for purposes of sale by recipient government
- Project food aid: designed for use in specific food related projects in developing countries including nutrition projects, food-for-work schemes, other employment creation schemes and rural development projects.
- Emergency food aid: urgent food aid delivered in order to overcome acute local or national food deficits, such as famines or consequences of national disasters or wars
- Adjustment food aid: food aid delivered as part of a structural adjustment package, and designed to mitigate the effects on social groups whose access to food is adversely affected by policy reform packages.

According to Alexandratos (1988:50) since its inception in 1954, food aid has become established as a way not only of meeting emergency situations but, with safeguards as means of augmenting concessional transfers of resources to developing countries. He indicated that food aid seems the most obvious way to help hungry people, but it is possibly the most difficult to use effectively because it can be beneficial to the beneficiaries but at the same time might result in diminishing incentives to domestic producers.

He argued that food aid encouraged a tendency in a number of developing countries to attach low priority to agriculture and has both negative and positive impacts; and further indicated that when not managed properly, can create a dependency situation where sustainable measures are not emphasised.

Barraclough (1991:217) indicates that it can also make less urgent and postpone structural and policy reforms that may be necessary to improve food production and entitlements in future. Talbot (1977:52) warns that care must be exercised to ensure that food aid does not become a substitute for agricultural reform and that it does not depress food prices below the incentive level within the recipient countries.

Chazan et al (1988:49) indicates that aid can promote agriculture when the policy framework and physical environment are supportive but cannot overcome obstacles of growth when these forces work against agricultural growth.
They further argue that even if adequate aid is available to help promote agricultural development and if donors are successful in persuading African government officials to raise food prices for African farm products and undertake other important policy reform, there is still the problem of sustainability.
According to Power (1976:63) food aid must not prevent the growth in home production and in the domestic market.

There are many programmes in place at various countries to alleviate poverty and South Africa is not an exception. According to USAID report (2003) South Africa too has experienced lower than normal yields in production and the relief aid which is currently being implemented is insufficient to meet the needs of the population, because of the combination of acute and chronic food insecurity, together with the HIV/AIDS pandemic. In Limpopo province the integrated food security program started with food parcels distribution at Bohlabela and Sekhukhune Districts. The main objective of distributing food parcels was to alleviate poverty to insecure households.

According to IDT (2003:2) beneficiary households were to receive one food parcels each for three months. The National Launch of the Food Emergency Scheme was held in Limpopo on the 7th of March 2003. The first distributions started from March to May 2003. According to Limpopo Department of Agriculture (2003: 2); May 2003 was identified as the last month for the distribution of food parcels. The distributions were repeated for three months from November 2003 to January 2004.

Food parcels are delivered for the identified food insecure households at Sekhukhune district with most of the bulk at Makhuduthamaga, which has more vulnerable cases. Although more food parcels are delivered and are still to be delivered than ever, it has come too late for the households with chronic food insecurity.

The provincial Department of Agriculture in collaboration with the Department of Health and Welfare agreed to upscale some of the programmes planned and implemented by Department of Agriculture to assist the poor households to be able to feed themselves. Eighty percent of the households that have benefited from the food parcels were to be offloaded to benefit from the programmes as initiated by the Department of Agriculture and other Departments especially SMME desk; hence the implementation of the Home-Based Production Projects in the area of study.

2.5 Home-based egg production projects.

Gueye (2002:1) indicates that family poultry, which are still important in low-food deficit countries, represent appropriate system for supplying the fast growing human population with high quality protein and providing additional income to resource – poor small farmers especially women. Family Poultry contribute significantly to food security, poverty alleviation, ecological sound management of the natural resources

and also valued in the religious and socio-cultural lives of local communities. He further highlighted the constraints facing the production system such as diseases, housing, feeding, breeding, marketing, training, education and credit.

Household or backyard chicken production is a subsistence activity, providing eggs and meat for the family consumption and to some extent cash income when managed properly. According to Faroog et al (2002) various districts in Pakistan did practice household egg production. The annual household egg production per household from backyard chickens in Mardan, New West Frontier Province in Pakistan were a source of food and cash income for the households with no additional expenditures in terms of time and capital investments.

Faroog et al (2002) observes that in Chitral districts household egg production was intensively practised than in any other district. Households were able to consume, hatch chickens and sell surplus. In 1999 it was reported that the flock size and consumption rate increased as compared to 1985. The increase was attributed to public awareness about backyard chicken production and the importance of poultry products. They further indicated that the relatively high household annual egg production and consumption was related to heightened interest of female farmers and the eager to develop backyard chicken production as well as to try out new innovations. The female farmers were enthusiastic in establishing groups and receiving training in chicken and other livestock production activities.

The success of the project was affected by high mortality rate, which was related to minimal health coverage program and poor management practices, whereas in

districts such as Charsadda lack of proper housing too had negative impact on the projects.

Gueye (2002:6) indicates that in Mardan division, Pakistan, a research project carried out to investigate the impact of training given to female farmers by females livestock extension workers indicated significant positive impact on the chicken flock size, egg production, morbidity, mortality, egg storage duration, egg setting and hatching performance in rural households.

Benabdeljelil (2001:1) observes that family poultry farming plays a major role in the economy of rural Morocco. Smallholder family poultry constitutes an important contributor to food security in rural Morocco. It provides cash income, job opportunities and remains one of the most popular and economically rewarding means of supplying animal protein to local communities. Poor management, lack of feed, prevalence of diseases, lack of extension and health services are identified as constraints to success of smallholder family poultry. He further concludes that the availability of year-round feed and water resources in appropriate quantity and quality constitute one of the major limiting factors to sustainable production.

According to Kitalyi (1998:12) surveys conducted during 1994-1995 in some African countries have reported that the main function of village chickens from the farmer's perspective is the provision of meat and eggs for home consumption. In Sudan the income accrued from the sale of eggs in a woman's project was used to purchase consumable goods, thus increasing household welfare. In South Africa small poultry production of 12 laying eggs per household increased the consumption of animal protein and reduced incidence of malnutrition in resource- poor households

He further indicated that the rural household production is an important element in diversifying agricultural production and increasing household food security.
According to Awuni (2003:2) village chicken in Ghana play a very important role in poverty alleviation and improvement of family food security, especially among the rural population in the country. Village chickens form over 80% of the total poultry production in Ghana. The development of rural poultry production has been hindered by numerous factors, the most significant of which is Newcastle disease.

According to Kampeni (1997:15) chickens are the most popular livestock in Malawi. The village chickens population is approximately 12 million consisting of uncharacterised breeds. The average flock size is seven to eight chickens. The problems encountered were Newcastle disease, few veterinarian personnel to cover the 2.2 million households, lack of civic education, difficulty in maintaining the cold chain, lack of funding and lack of chicken housing.
Vaccination campaign which was strictly implemented in order to control the Newcastle disease resulted in reduced mortality rates and an increase in flock size, income from sales of eggs, consumption of eggs from 9 to 33 per person per annum as well as consumption of poultry meat.

Mallia (1999:1) notes that underdeveloped regions of the outlying coastal Belize, Guatemala and Mosquitia rely on smallholder family poultry production as their primary source of domestic animal protein. In Mosquitia family poultry production is affected negatively by lack of housing, predation, diseases, climate extremes and lack of involvement and skills in managing family poultry.

Kitalyi (1997:6) reports that Niger started the rural poultry improvement programme in 1970s. The programme was based on the delivery of pullets at a laying age or hatching eggs. Both approaches resulted in poor performance because of high mortality, which was attributed to management problems. Kenya too had a rural poultry programme, which was a success. The success was attributed to the incorporation of the participatory techniques and an intensive training component whereas in Burkina Faso the success was attributed to disease control, training on hygiene, housing, feeding as well as marketing. The achievements and credits were given to the holistic approach followed and the support received from the policy makers.

According to Bessei (1990:55) a total of 40 poultry raisers in the region of Niamey, Niger were selected. They were supplied free of charge with improved breeding stock, construction material, equipments and cash incentives. The selected farmers did not develop any particular interest because in some cases the construction material was not used for building chicken houses but for other purposes. Most of the stock distributed died or disappeared due to lack of interest and care.

On the basis of the experience another approach was tried with no cash incentives whereby some equipment were provided at a subsidized prize after the farmer had provided his own contribution; for example construction material was only distributed after the farmer had prepared the walls and roof of the poultry house. Hatching eggs or breeding stocks were only given after completion of the construction of the chicken house. Vaccination of the flock and extension services were provided free of charge.

The success of the projects were negatively affected by the cessation of the extension services which was supposed to ensure continuous vaccination and supply of some essential veterinary products, breeding stock and where necessary some feed concentrate. One out of every sixty pilot farms continued. Many reasons contributed to failure of the projects but the main reason was identified as an irregular coverage by the extension workers.

Bishop (1995:5) concludes that traditional small-scale chicken production is extremely important in helping interrupt the vicious cycle of poverty, malnutrition, disease and continued poverty commonly found in low-income LDC households. Not only do eggs provide vital amino acids for small children, but the sale of cull hens provides critical income often used by the mother to cover household's medical and nutritional needs.

Dolberg (2003:7) notes that in Bangladesh improvement of village poultry was used as the technological intervention to help poor households to increase their food security, reduce their vulnerability and start a process that will move them out of poverty. He further indicates that the income from the sales of eggs, apart from being used to diversify the diet are used to educate children and where possible to begin a process of asset accumulation.

According to a report from Helen Keller International (2004:2) a total of six hundred households in Bangladesh that were already participating in garden homestead garden projects were randomly selected to participate in pilot household egg production projects. The Pilot project was conducted in collaboration with two Non Government

Organizations (NGO) partners of Hellen Keller International (HKI) working in Northwest Bangladesh. Each NGO established fifteen Village Model Farms (VMF). HKI staff provided training to NGO partners on poultry production and nutrition education and also assisted during training of VMF owners and households. The NGO partners were responsible for conducting field level training and carrying out regular field visits and providing assistance for day to day activities. With technical assistance from HKI they were responsible for organizing and implementing a nutrition education component in conjunction with the homestead food production activities.

Findings from the pilot projects highlighted that technical assistance and integration of poultry projects into existing home garden programs impacted positively on households i.e. increased production at household level resulted in significant increase in consumption among all household members. Besides being used for consumption poultry products are used by households for sale. The proportion of target households that sold poultry products increased from 39% to 80%. Households which sold poultry products were able to increase their income by more than 200%.

According to Branckaert (2000:3) about 80% of the poultry population is found in traditional family- based poultry production systems which contribute up to 90% of poultry products in some countries. It was further highlighted that animal farming was encouraged in Thailand in 1994 to 1996. Farmers were given basic help to enable them to help themselves i.e. each was provided with 20; 20 and 50 laying hens from 1994, 1995 and 1996 respectively. All necessary equipments were provided and demonstrations of appropriate management of laying hens were held. The success of the project was adversely affected by the sharp increase on the cost of feed.

According to a report in FAO (2000:2) lack of training component for rural women had a negative impact on the project. First it allowed women to develop unrealistic expectations of monetary returns that could not be met because of their low level of skills and organizational capacity. Secondly, despite the modest success of some women's groups in the implementation of productive and marketing activities, the project's overall objectives were not attained. The absence of a good marketing strategy led to market losses. Specific problems: a high rate of illiteracy, lack of motivation to assume new roles, little awareness of production alternatives.

According to Moreki (2006:1) in Botswana, the village chicken population is estimated to be three million which are reared by sixty five percent of agricultural holdings. A survey conducted in the fifteen villages on one thousand rearers indicates that the majority of the rearers kept chickens mainly for meat, eggs, as a source of income, for greeting visitors and to a lesser extent for healing rituals. However the majority of five constraints listed in order of importance were diseases, lack of funds to build shelters and purchase feed, lack of technical support, lack of shelter and predation.

Badubi et al (2006:6) also used a questionnaire-based survey to investigate small-scale layer production systems in the districts of Franscistown in Botswana. The survey examined aspects of productivity parameters, housing, management and diseases. The productivity levels were affected by diseases, prolapse of the uterus, poor quality of feed and pullets, poor managerial skills, and irregular supply of feed.

According to Nqindi (2003:3) chickens are the mostly widely distributed animals species of all livestock in Zimbabwe since almost every household in the rural community keeps small flocks of indigenous chickens under free range system. Chickens are kept as a source of food, for social functions and as a source of income. A survey conducted to investigate the role of women in indigenous poultry production cited absence of technical support such as veterinary and extension services, high mortality rates of chicks, lack of adequate knowledge of poultry production and low egg production as the major constraints. The largest production losses were as a result of the outbreak of diseases.

A report from the International Network for Family Poultry Development (2006:1) indicates that research conducted reveals that Newcastle disease is the major constraints to chicken production in rural areas causing mortalities of 50 to 100% of birds annually. The implementation of an effective New Castle control programme in Mozambique has resulted in increased chicken numbers, increased household purchasing power, increased home consumption of chicken products and increased decision-making power for women.

According to a report in IFAD (2006:4) poultry raising is a popular activity among the rural women in most countries. It can provide meat and eggs for the family, a small and regular source of cash, manure for crop production, feathers, and items for traditional rituals and gifts for friends. Labour requirements are low compared with those associated with other small livestock and production tasks can be combined with household activities. From the report a 1997 review of IFAD experiences in supporting smallholder poultry development found that poultry has been a frequent

sub-component of IFAD loan projects, usually targeting the poorer rural women in terms of credit for small-scale poultry enterprises.

Projects often failed to repay loans and part of the problem was as a result of the outbreak of diseases. A high poultry mortality rate was the most important cause of delinquent loan repayment in an IFAD – supported project in Nepal and other countries. Another difficulty encountered in IFAD projects has been the high price of poultry feed e.g. in Bangladesh where a 50% increases in feed price of poultry feed was noted; Egypt and Sri Lanka. From the report high price in poultry feed lowered the productivity and aggravated repayment problems.

From a report in IFAD (2006:4) experience in supporting smallholder poultry production systems, Lesotho poultry development activity occurred through the provision of medium-term credit for egg-production units for both confined and semi-confined systems. The local egg circle cooperatives could not pay as expected since the market was flooded with eggs from South Africa and loan recovery was only 42%. The production systems collapsed after the poultry units suffered high chick mortality and had high prices for feed which decreased the quality of the chickens.

The advantage of household poultry projects in improving household food security was reported in many regions such as in India, Thailand, Bangladesh etc. Limpopo Province is no exception with regard to poultry projects. In Sekhukhune district more than twenty-two group poultry projects were established whereby the interested groups were identified, with most of them at Makhuduthamaga, which is a nodal point as a result of the extent of food insecurity prevailing in that area. Most of the projects were initiated and funded by the Department of Health and welfare. Projects were not

sustained until the department of Agriculture took over and made a sustainability checklist. The following were identified to be impacting negatively on the projects:

- lack of proper infrastructure which resulted in theft in other projects.
- lack of electricity in some projects
- lack of training or inadequate training on skills such as management, administration, marketing, financial and technical to sustain the projects
- reluctance of some members to work
- non- adherence to the constitution of the project.

Up to date almost all the projects which are funded continue to be run by the participants as a result of the continuous annual pumping of money into the projects to sustain them. The failure on sustainability of the egg production projects is attributed mainly to lack of the necessary identified skills such as technical, financial, administrative, management as well as marketing which continues to be a problem taking into account the level of education of the participants in those projects. (Personal communication)

According to Rossouw (1989:10) even if the projects participants are consulted in the planning phase, the initiative usually comes from the planners hence they are more capital and management intensive than satisfying the felt needs of the participants. Projects can increase household production but when planners fail to seek out opinions of recipients or even use widely accepted knowledge about strengths and weaknesses of rural communities to guide their work; that might be regarded as imposing or planning in isolation, which can threaten instead of increasing the limited security.

As a result of the ongoing and unimproved food insecurity an emphasis on household or home-based production projects was made hence its commencement at Sekhukhune and Bohlabela Districts.

Homestead food production is not only important for food security and nutrition but also for helping poor households meet other basic needs, thus contributing to poverty alleviation efforts. Home Based Production Projects are implemented as lasting solution by the Limpopo province for the households to produce, consume and generate income. This remains to be tested.

2.6 Summary of literature review.

Food security occurs at individual, household, community and national level. It is felt unequally throughout the year hence the need for adequate planning. The impact of shocks is felt mostly at households and individual levels. The inability of vulnerable households to cushion the impact of shocks during natural disasters such as droughts, floods is as a result of the inadequate or absence of various factors such lack of income, fallback options, safety nets etc. Confrontation on the causality of food insecurity is very important in order to implement the necessary interventions.

Insufficient food production and income to acquire food in adequate quality and quantity to satisfy family needs as well as inadequate distribution impact negatively on households food availability.

Poultry products are regarded as a valuable asset to local communities as they contribute significantly to food security and poverty alleviation. It is emphasized in various countries that egg production projects provided the cheapest source of protein in the form of eggs and meat and are a ready source of income to help homesteads to

purchase basic daily requirements. The food insecure households are able to supplement incomes and their nutritional status through poultry keeping.
The Limpopo province too embarked on Home based egg production projects as a way of strengthening the participation of food insecure households in income generation projects.

Various countries from the literature review implemented poultry keeping as a way of reducing poverty. However the successes and failures of the projects impacted on production. For any project to succeed both the extension officers and the farmers need to participate actively. Some of the constraints encountered were as a result of both the extension officers and farmers.

Extension officers serve as an integral part for projects to run effectively and efficiently. Failures or negative impacts to production in most countries from the literature review were attributed to cessation of services during the project cycle, irregular coverage of households in terms of monitoring, inadequate skills training, lack of or minimal health coverage and health services.

Beneficiaries lack of interest and care, involvement and poor management practises were identified as some of the constraints which impacted negatively on production. Some of the constraints such as funding, extreme weather conditions, expensive feed, inappropriate housing which resulted in predation were also mentioned.
Successes were attributed to disease control, training of beneficiaries on hygiene, feeding, marketing as well as integration of poultry projects into existing home garden programmes.

For any project to be implemented effectively and efficiently lessons need to be drawn from the similar projects which were ones implemented. Whether lessons were learned prior to implementation of home based egg production projects is still to be tested.

CHAPTER THREE

3. METHODOLOGY

3.1 Introduction

This chapter outlines the methodology adopted to investigate the various interacting groups of factors which determine the sustainability of the home based egg production projects. The design of the study, securing of respondents, sample selection and size, instrumentation process, pilot testing, reliability, information sources, data collection, and data analysis are also described.

3.2 Design of the study

The study is designed as descriptive research. A descriptive survey design was used to collect data from both the beneficiaries and the extension officers. The data collected was used to describe the characteristics of the beneficiaries of layers, skills training received, quantity of starter packs distributed, extent to which government expectations were met, constraints and the extent to which these were addressed. According to Fitz-Gibbon et al (1987:104) establishing an existence of a relationship between two measures does not tell you what has caused it. This is further indicated by Kane et al (2001:334) that correlation makes no statement about causality.
For this study relationships between variables will be identified without making any conclusive causal inferences.

3.3. Securing of respondents.

After the selection of villages to be involved in the study; the Makhuduthamaga District officers were notified in order to inform and make the necessary arrangements

with municipalities, headmen and leaders of beneficiaries in selected villages. An agreement was reached with regard to dates, time and venues for meetings with the extension officers whereby questionnaires were administered and completed.
A schedule with dates, time, villages and selected beneficiaries was discussed and finalised with the officers.

The contact numbers of leaders of beneficiaries in villages selected as well as that of the relevant officers responsible for both support and managing the process were taken. The contact numbers were useful with regard to identification of villages and households of the beneficiaries. For the Delphi study contact numbers were very much essential concerning the necessary preparations with regard to the identification of beneficiaries from the identified villages; date of the workshop, venue and time for collection of the beneficiaries from their villages in order to assemble at Mamone tribal hall.

3.4 Sample selection and size

Sampling was done in two phases. The first phase of sampling was done in order to determine the number of respondents to participate in the Delphi study technique. The second phase of sampling was done in order to determine the number of respondents i.e. both the beneficiaries and the extension officers to participate in survey questionnaires.

3.4.1 First phase: Delphi study technique

According to Dunham (1998:1) the purpose of Delphi technique is to elicit information and judgements from participants to facilitate problem solving, planning

and decision making. For him this happens without physically assembling the contributors, but instead contributors exchange information via faxes and emails.

For this study a workshop was conducted because of inadequate communication channel resources at the area of study for both the respondents.

Purposive sampling was used to select the number of beneficiaries to participate in the Delphi study technique. The following criterion was used for choosing the beneficiaries:

- had to be literate

-those who did not participate in the survey questionnaires.

The objective of the workshop was for both the respondents and the extension officers to identify the constraints to household egg production projects and the extent to which those constraints were addressed.

Table 1. Composition of Delphi study group

Group	**Targeted respondents**	**Actual respondents**	**Actual % of respondents**
Extension officers	10	7	70
Beneficiaries of ASP's	50	33	66
Total =	60	40	67

Beneficiaries of ASP's from four villages' i.e. Jane Furce, Mamone, Mogoroane and Moripane were selected to participate in the Delphi study.

Simple random sampling was used to determine the number of extension officers to participate in the Delphi study.

The target for both respondents could not be reached. Of the total number of selected extension officers, seventy percent participated in the Delphi study technique. Those who did not manage to avail themselves had to attend workshops elsewhere.
Of the selected beneficiaries, sixty six percent participated in the Delphi study technique. Those who did not manage to avail themselves had some engagements ranging from death cases, participating in initiation schools and preparations for weddings.

3.4.2 Second phase: Selection of participants in the survey.

From the registers a total of 314 households from 27 villages have already received the Agricultural starter up packs thus far. According to Kane et al (2001) studying the entire group may take too long and cost too much both in money and in opportunity time. From the reports some of the villages have the highest incidences of food insecurity e.g. Phokoane hence the highest number of beneficiaries. The total number of male beneficiaries is far less than that of female beneficiaries.

Simple Random Sampling was used to select 20 villages with 231 beneficiaries. Thus the study area is divided into 20 strata. The sample size (n = 144) for the beneficiaries of starter packs was determined following Krejcie and Morgan (1970).
A three-stage stratified random sampling design was used to select the sample of beneficiaries for the study. In the first stage of sampling, the primary sampling unit (PSU) was the twenty selected villages in which the beneficiaries reside.

The total number of beneficiaries differed from one village to another and ranged from four to thirty two. During the second stage stratified random sampling was used

to ensure that homogenous groups are grouped together i.e. the strata were further differentiated and formed according to males and females to ensure that both groups are given an equal chance to participate. The proportionate stratified random sampling was done during the third stage to ensure that the sample in each group reflects its proportion to the population.

Sampling fraction was determined as follows:

P (S*i*) = *si /N* = *si /* 231

Where P (Si) is the probability that the ith stratum is selected and the s*i* is the number of the households in the *i*th stratum.

Given that n = 144 beneficiaries to be sampled,

P (U*i / S*i*) = 144 / si*

Where P (U*i /Si)* is the probability that *j*th stratum is selected at the second stage.

P(U ij) = *si*/N x 144/*si*

= 0.6 margin of error

The final sampling for each village is shown in table 1.

Table2. Beneficiaries of Agricultural Starter up packs.

Village	**Total number of beneficiaries of ASP's in each village**	**Sample size**	**Males**		**Females**	
			Total number	**Sample size**	**Total number**	**Sample size**
1. Maserumule park	18	11	4	2	14	9
2. Greenside	9	6	-	-	9	6
3. Phokoane	32	20	5	3	27	17
4. Platklip	9	6	-	-	9	6
5. Mogudi	10	6	-	-	10	6
6. Brooklyn	4	3	-	-	4	3

Table 1 continues..

Village	Total number of beneficiaries of ASP's in each village	Sample size	Males		Females	
			Total number	Sample size	Total number	Sample size
7. Mohlwarekoma	18	11	1	1	17	10
8. Mmathapisa	5	3	-	-	5	3
9. Mmakoshala	8	5	3	2	5	3
10. Thabeng	5	3	-	-	5	3
11. Ntshong	5	3	1	1	4	2
12. Ga Mashabela	5	3	-	-	5	3
13. Diphagane	9	6	1	1	8	5
14. Ga Maloma	6	4	2	1	4	3
15. Marulaneng	7	4	3	2	4	2
16. Manganeng	13	8	1	1	12	7
17. Tisane	10	6	-	-	10	6
18. Mamone	19	12	1	1	18	11
19. Eenzaam Trust	23	14	8	5	15	9
20. Eenzaam Tribal	16	10	6	4	10	6
Total =	231	144	36 (16%)	24 (17%)	195 (84%)	120 (83%)

Purposive sampling was used to determine the extension officers i.e. all the sixteen extension officers responsible for managing and supporting the beneficiaries of starter packs in villages within their wards participated in the study.

3.5 Instrumentation process

3.5.1 Survey questionnaires

The instruments used are i Delphi study technique and ii. two questionnaires.

i. Questionnaires

To test for the hypothesis two questionnaires were compiled. Both the extension officers and the beneficiaries of the Agricultural starter up packs received different questionnaires. The questions were constructed in English and explanation in Mother tongue was used to explain for those who do not understand English. The researcher administered the structured questionnaires to the extension officers and interviewed the beneficiaries to afford them opportunities to offer diversity of opinions.

The questionnaire for the beneficiaries of starter packs is divided into six sections as follows: Section A. consists of questions on demographic characteristics with nominal level items; Section B consists of both open ended and Likert type scale questions on the selection criteria of the respondents and the starter packs; Section C consists of both open ended and Likert type scale questions on skills training; Section D consists of both open ended and Likert type scale questions on support from the extension officers; Section E consists of Likert type scale questions on government expectations; Section F consists of both open ended and Likert type scale questions on general information of egg production projects and future preferences.

The questionnaire for the extension officers is divided into six sections as follows: Section A consists Likert type scale questions on the selection criteria, updating the database and distribution of starter packs; Section B consists of both open ended and Likert type scale questions on skills training; Section C consists of Likert type scale

questions on government expectations; Section D consists of Likert type scale questions on monitoring and support of the beneficiaries;

Section E consists of both open ended and Likert type scale questions on general information on the implementation of projects.

A five point Likert type scale was used in both questionnaires with 5 points assigned to positive statements and 1 to negative statements.

ii. Delphi study

The respondents i.e. both the extension officers and the beneficiaries were instructed to respond to the following three instructions:

i. List constraints to implementation of home based egg production projects. (list as many constraints as you can).

ii. Rank the constraints you have listed above in order of importance, starting with 1 as the most important and place the number rank against each constraint.

iii. State actions taken to address each of the constraints you have identified.

A flipchart was used in order to write down and rank a list of identified constraints and the extent to which they were addressed.

3.6 Pilot testing.

According to Leedy (1970:400) after drafts of the interview schedule and other instruments are completed, they are pretested on a small scale representative sample of the universe.

The pretesting which is followed by omissions or additions prior to final questionnaire is further indicated by Bulmer et al (2000:148) that if the researchers really do not

know how well key sets of questions will work in the field, they should take time to find out before they move into the main part of their data collection.

The questionnaire for both the extension officers and beneficiaries were pretested at Fetakgomo which is one of the sub-districts of Sekhukhune District participating in the programme. Respondents were randomly selected i.e 31 beneficiaries from four villages namely Ga Nkwana, Ga Nchabeleng, Maesela and Stykraal and 10 extension officers responsible for managing the process.

The longest time taken to complete the questionnaires was estimated between 50 to 60 minutes. The clarity of the questionnaires was further improved by the review of the responses from both the extension officers and beneficiaries.

The questionnaires for the beneficiaries contained 74 items. This section is organised into six sections. Section A contains six questions on demographic characteristics of the beneficiaries i.e. sex, marital status, religion, level of education, age of the head of household and the total number of household members.

Section B contains four items. It was designed to describe the beneficiaries according to the selection criteria in which they fall, identify items of the starter up packs received and reasons for their choices. The other item was on the extent to which consultations were made prior to distribution and on quantity of starter up packs received on a five point likert –type scale rating systems (5= Strongly agree, 4=Agree, 3=Undecided, 2=Disagree 1= Strongly Disagree).

Section C was designed to determine the extent to which beneficiaries were equipped with the skills for running the projects. This section contains a total of 26 items.

Twenty four statements were used to measure the extent to which beneficiaries were equipped with skills training such as technical, marketing, financial, administration and management on a five point likert –type scale rating systems (5= Strongly agree, 4=Agree, 3=Undecided, 2=Disagree 1= Strongly Disagree) The other two were used for beneficiaries to indicate their market of both eggs and cull hens.

Section D was designed to determine the extent of support that beneficiaries received from the extension officers. This section contains a total of 14 items. Three statements were used to measure the extent of support that beneficiaries received from extension officers on a five point likert –type scale rating systems (5=Very great extent, 4= Great extent, 3=Average extent, 2= Some extent, 1=Limited extent). Three statements on information on implementation of projects on a five point likert –type scale rating systems (5= Strongly agree, 4=Agree, 3=Undecided, 2=Disagree 1= Strongly Disagree) and that of 2 statements were on the help received and frequency of visits, and the last six were on egg cooperatives.

Section E was designed to determine the extent to which government expectations were met. This section contains a total of 5 items. All the statements were used to measure the extent to which government expectations were met on a five point likert –type scale rating systems (5= Strongly agree, 4=Agree, 3=Undecided, 2=Disagree 1= Strongly Disagree).

Section F contains 18 items. It was designed to collect general information on egg production projects with regard to pricing, amount spent, amount accrued from sales, mortalities and reasons thereof, mistakes committed and future preference with ratings 1=most preferred, 2= preferred, 3= slightly preferred, 4= least preferred. One item

was on the extent to which household livelihoods were improved on a five point likert –type scale rating systems (5=Very great extent, 4= Great extent, 3=Average extent, 2= Some extent, 1=Limited extent).

One item was on how helpful the household egg production were, and the other one item was on rating the success with regard to effective and efficient management of projects. The last question was on mistakes committed by beneficiaries which affected production.

The questionnaire for the extension officers contained 49 items which were organised into 5 sections.

Section A was designed to determine the extent to which the selection criteria were adhered to, extent to which the database was updated, and distribution of starter up packs. This section contains a total of 14 items. One statement was used to determine whether the extension officers were aware of the selection criteria. One statement was used to measure the extent to which the selection criteria was adhered to on a five point likert –type scale rating systems (5=Very great extent, 4= Great extent, 3=Average extent, 2= Some extent, 1=Limited extent).

Twelve statements were used to measure the extent to which the database was updated and the distribution of starter up packs on a five point likert –type scale rating systems (5= Strongly agree, 4=Agree, 3=Undecided, 2= Disagree, 1= Strongly Disagree).

Section B was designed to determine the extent to which training was done on various skills. This section contains a total of 12 items. One statement was on training received and the second one was on the institution that offered training. Five statements were used to determine the attempts made on various skills on a five point

likert -type scale rating systems (1=no attempts, 2= limited attempts, 3=Some attempts, 4. many attempts, 5. fully addressed) Two statements on skills acquired were used on a five point likert -type scale rating systems (5=Very great extent, 4= Great extent, 3=Average extent, 2= some extent, 1= limited extent). Three statements were on demonstrations made on a five likert- type scale (5= Strongly agree, 4=Agree, 3=Undecided, 2=Disagree 1= Strongly Disagree)

Section C was designed to determine the extent to which government expectations were met. This section contains a total of 5 items. All the statements were used to measure the extent to which government expectations were met on a five point likert –type scale rating systems (5=Very great extent, 4= Great extent, 3=Average extent, 2= Some extent, 1=Limited extent).

Section D was designed to determine the extent to which monitoring and support was done. This section contains a total of 8 items. All the statements were used to measure the extent to which monitoring and support was done on a five point likert –type scale rating systems (5=Very great extent, 4= Great extent, 3=Average extent, 2= Some extent, 1=Limited extent).

Section E contains a total of 10 items. It was used to collect general information on egg production projects with regard to livelihoods of beneficiaries, success on management and implementation of projects, problems encountered and the needs for training, extent of success of the implementation of projects, whether home based egg production projects are considered as a lasting solution to food security, number of contacts made, interest of beneficiaries on projects and mistakes committed. Two

statements were used to measure on livelihoods of beneficiaries and that of success on implementation of projects on a five point likert -type scale rating systems (5=Very great extent, 4= Great extent, 3=Average extent, 2= Some extent, 1=Limited extent).

3.7 Reliability

Cronbach's Alpha coefficient was used to measure internal consistency in items on skills, support and government expectations to see if they measure the same quality or characteristics.

Cronbach's Alpha coefficient was found to be 0.81 for skills, 0.60 for government expectations and 0.80 for support from the extension officers.

The test was reliable but not excellent. This might have been caused by the fact that mother tongue was used to explains all the questions during the survey taking into account the low levels of education of most of the beneficiaries and the quantitative methods used in both questionnaires. During explanations the wording and meaning might have been distorted in context of various villages.

3.8 Information Sources.

An interview schedule was used to collect information from beneficiaries of starter packs and a questionnaire was administered to the extension officers.

A workshop for both the extension officers and beneficiaries was organised and conducted to collect information on constraints and how they have been addressed.

The information concerning the database of the total number of beneficiaries as well as those still outstanding for the financial year 2003-2004 was obtained from the departmental records. The reports on meetings, workshops held and monthly progress

of the process as well as policy documents of both national and provincial level on the implementation of Agricultural starter up packs were used for the study.
Permission to use the departmental records and reports was applied for in order for the research to conform to research requirements procedures.

3.9 Data collection

The survey was conducted by the researcher. The exercise for the Delphi study took two days i.e. one for the extension officers and the other for the beneficiaries. The survey questionnaire took twenty four days to complete.

Questionnaires from each venue were checked thoroughly for accuracy, legibility and completeness before proceeding to the next venue.
Preparations were made to analyse data collected after workshops held as well as from completed questionnaires. All quantitative questionnaires were pre-coded prior to administration. Only qualitative questions were coded and a codebook was prepared, responses coded and the data was entered into the computer system for analysis. After all questionnaires had been administered to all respondents, preparations were made to analyse the data collected.

3.10 Data analysis

3.10.1 Data organisation.

The results of the Delphi study on constraints from both the respondents as well as the extent to which the constraints were addressed were also used.
All the themes of both the extension officers i.e. on selection criteria, updating the database, distribution of starter packs, skills training, government expectations,

general information on managing the process; and that of the beneficiaries i.e. demographic characteristics, starter up packs, support from extension officers, government expectations, general information on running the projects were included.

3.10.2 Statistical procedures.

Descriptive statistics was used to analyse the data. The Statistical Package for the Social Science (SPSS) computer program was used for entering and analysing the data collected.

Frequencies, percentages and graphs were used to organise and summarise data collected on demographic characteristics.

To describe the beneficiaries in terms of the selection criteria they fall, percentages of the responses were calculated. To identify items of starter packs received by the beneficiaries, reasons given for the choice of egg production projects, quantity of the starter up packs as well as that of whether consultations were made prior to distribution; percentages, means and a graph were used to calculate and illustrate the responses.

To determine whether beneficiaries were equipped with the necessary skills such as technical, marketing, financial, management and administration required for sustaining the projects; statements were given in each skill and percentages, means and a graph were calculated from the responses.

To determine the extent to which government expectations were met, percentages and means were calculated from the responses.

Frequencies, percentages means and a graph were used to calculate and illustrate the responses of beneficiaries on statements and questions related to support that they

received from the officers as well as that on general information on egg production projects.

Analysis of Variance (ANOVA) was used to determine the relationship between the beneficiaries' level of education and government expectations met. Correlation coefficient was used to determine the relationship between skills training, support from the extension officers and government expectation met.

Percentages and means were used to calculate the extension officers' responses with regard to questions and statements on selection criteria, updating of the database and distribution of starter up packs, government expectations and monitoring and support. Frequencies, means and percentages were used to calculate the responses of the extension officers on questions and statements on training of beneficiaries. Percentages, means, a graph and frequencies were used to calculate the responses of the extension officers on questions and statements on general information on projects.

All the statements on five point likert scale in both questionnaires are positive. The results were based on the mean value of less or equal to 2.4 reflected "disagree or limited extent; a mean value that was greater or equal to 2.4 and less than 3.4 reflected "undecided or average extent" and a mean value of greater or equal to 3.4 reflected "agree or great extent".

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS.

4.1. Introduction.

The results of the study for both the extension officers and the beneficiaries of starter packs are presented in four ways: Firstly, the constraints as perceived by beneficiaries of starter up packs and the extension officers, and the extent to which these constraints were addressed.

Secondly, the results of the data collected from the beneficiaries of starter packs are presented in six sections namely:

A. demographic characteristics; B. selection criteria and the starter packs; C. skills training; D. support from the extension officers; E. government expectations; F. general information of egg production projects and future preferences.

Thirdly, relationships between some variables from demographic characteristics such as level of education and the extent to which government expectations were met as well as skills acquired from training and the extent to which government expectations were met.

Fourthly, the results of the data collected from the extension officers are presented in five sections namely:

A. selection criteria, updating the database and distribution of starter packs; B. skills training; C. government expectations; D. monitoring and support of the beneficiaries; E. general information on the implementation of egg production projects.

4.2 Constraints on egg production projects

During implementation of household egg production projects both the extension officers and beneficiaries of starter packs encountered problems. A workshop was conducted separately for each group to identify, list and rank the constraints which impacted negatively on household projects. They were also to identify the extent to which those constrains were addressed.

4.2.1 Constraints identified by extension officers

The extension officers identified, listed and ranked eight constraints in order of importance as illustrated in table 3 below:

Table 3: Constraints of extension officers

Constraints	**Rank in order of importance**
a. Survey not done prior to distribution.	1.
b. Insufficient human resources: - too many programmes assigned to same officers - absence of animal technician as a result the breakdown of foot and mouth disease during implementation process. - one veterinarian for half of the District	2
c. Training.	3.
d Insufficient monitoring.	4
e. Inadequate transport.	5
f. Inability of beneficiaries to purchase feed.	6
g. Inadequate starter packs.	7
h. failure to establish cooperatives.	8

a. Survey not conducted prior to implementation of the projects.

According to Swanson (1984:191) surveys can be used to seek information status of the participants prior to their participation in a programme. Surveys are important for

assessing the basic characteristics of the beneficiaries and their changing needs. Through surveys it can be ensured that the potential beneficiaries meet the criteria and are interested in poultry production.

As indicated in the literature review in region of Niamey, Niger (Bessei:1990) most of the stock distributed to poultry farmers died or disappeared due to lack of interest and care. Extension officers considered surveys as the first most important aspect which affected production. Surveys are supposed to be conducted prior to implementation of projects.

b. Insufficient human resources

According to Mollet (1990:188) appraisal of the institution and managerial aspects is needed to ensure that administrative structures proposed for the project including the adequate staffing and quality of the staff is designed to enable the project to be on schedule and operate efficiently.

At Makhuduthamaga sub-district there are many poverty alleviation projects and other projects that are being assigned to same officers as a result of understaffing. This in itself impacted directly on the support to be given to the beneficiaries. Insufficient human resource was ranked the second most important constraint which impacted negatively on production.

Another setback was the absence of animal technicians during the implementation process as a result of the outbreak of foot and mouth disease.

At the area of the study it was indicated that only one veterinarian is responsible for half of the district. This resulted in high mortality rates related to diseases due to unavailability of the veterinarian during the time of need.

c. Training not done prior to distribution of starter packs.

Extension officers were notified within a short space of time to collect layers from suppliers and distribute them to different identified households. Training in most of the villages was not done prior to distribution. Browne (1986:126) indicates that the weakness of administrative structures in Least Developed Countries (LDC) is often linked to failure to develop meaningful technical, community development and administrative training. Policy makers fail to allocate meaningful resources to appropriate training programs and institutions.

Training was ranked the third most important constraint. Failure to train prior to distribution impacted negatively on production.

d. Insufficient monitoring

Matata (1990:316) reminds us that monitoring is a continuous assessment of both the functioning of the project activities in the context of implementation schedules and of the use of project inputs by the targeted population in the context of design expectations.

Extension officers ranked insufficient monitoring as the fourth most important constraint which impacted negatively on the implementation of egg production projects. Casley et al (1982:4) explain monitoring as the provision of information, and use of that information, to enable management to assess progress of implementation and take timely decisions to ensure that progress is maintained according to schedule. An acknowledgement was made that with less monitoring most of the problems encountered by beneficiaries with regard to management of household projects were either not attended to nor identified timeuosly for positive interventions to be made.

e. Inadequate transport

Extension officers ranked transport as the fifth most important constraint which impacted negatively on production. Transport problems which were encountered at the District during the implementation of the projects affected the management of the process. Inadequate transport during the implementation of starter up packs is an indication that there are some loopholes in planning.

f. Inability of beneficiaries to purchase feed.

The beneficiaries were given four bags of feed to start up the process but unfortunately they failed to purchase on their own when the bags were finished. Only a few did manage to purchase on their own throughout the egg laying cycle. The inability of beneficiaries to purchase feed was ranked as the sixth most important constraint which impacted negatively on production.

g. Inadequate starter pack

Some items of the starter pack such as eighteen layers and four bags of laying mash were regarded as insufficient for the beneficiaries to sustain the projects. Inadequate starter packs was ranked the seventh most important constraint which impacted negatively on production. The quantity of the starter up packs supplied was considered inadequate for the households to sustain the projects.

h. Failure to establish cooperatives.

The department envisaged the establishment of cooperatives for the beneficiaries in each village which did not materialise. According to a report in FAO (2000:2) cooperatives, in spite of many failures and shortcomings, are traditional organizations

of mainly the poorer segments of society which have the potential to play an important role in developing a strong ”social capital” in the rural areas that is regarded as a pre-requisite for food security and sustainable development.

Failure to establish cooperatives in each village was identified as the eighth most important constraint which impacted negatively on egg production projects.

4.2.2 Constraints identified by beneficiaries of Starter up packs

The beneficiaries of starter packs identified listed and ranked eight constraints in order of importance as illustrated in table 4 below.

Table 4: Constraints of beneficiaries of Agricultural Starter up Packs.

Constraints	Rank in order of importance
a. Feed: -expensive feed -expensive transport for purchasing and collect feed -improper feed -soft shelled eggs -layers eating eggs -layers pecking one another	1
b. Training	2
c. Diseases and unavailability of veterinarian	3
d. mortality of layers on arrival	4
e. layers not of the same age	5
f. Inadequate starter pack	6
g. theft and predation	7
h. Cages too small	8

a. Feed.

Bakwinya (2005:2) indicates that in poultry production, feeding plays a very important role in management and it can improve egg production. Beneficiaries

identified feed as the first most important constraint which affected egg production negatively.

During the implementation of egg production projects beneficiaries were supplied with four bags of feed to start up the process. They were to purchase feed on their own after the four bags were finished. Prizes of feed at the local shops were considered expensive. In some villages shops selling feed are very far and almost all the beneficiaries are without cars to enable them to carry the purchased feed. The high prizes of feed were exacerbated by the amount charged for hiring transport for carrying bags of feed.

According to National Department of Agriculture (1998:8) to lay well, layers need the best possible feed. Beneficiaries were not satisfied with some of the feed purchased at the local shops. They indicated that after feeding the layers with the feed purchased at the local shops the total number of eggs laid per day reduced drastically. Improper feed affect egg production.

Beneficiaries were also not satisfied with the quality of eggs. Soft shelled eggs were laid by some of the layers which started laying during the first month. The soft shelled eggs were not sold and this affected both production and the market negatively.

An indication was also made that layers were eating eggs. According to Twinch (1985: 89) egg eating can break at any time, in any place and once it has begun in a flock no matter how small, it is extremely difficult to get rid off. It usually begins accidentally when a hen breaks an egg or a soft shelled egg is laid which breaks up soon afterwards.

A tendency for egg eating was also condoned by cages that are not properly slanting for the eggs to roll forward. See figure A. below:

Figure 1. An example of a cage which is not put properly with layers feet on top of eggs.

According to Mashishi (2001:2) low salt deficiency results in layers pecking one another. Some layers which were injured by sharp ends of cages were pecked. Batty (1980:103) indicates that debeaking is an unfortunate necessity when the outbreak of feather picking and cannibalism are likely to assume serious proportions. Pecking can occur when injured birds are left within the cage hence the need to fasten sharp ends of the cage at all times.

Wethli (1999:64) argues that if beaks are not trimmed, birds may peck each other causing large bleeding wounds and this may lead to many birds dying.
Pecking of one another in some cases resulted in death. The fact that layers were pecking one another to death raises questions such as whether when the layers were received from the supplier aspects such as beak trimming were checked on the contract.

Training

Layers were distributed to beneficiaries in most of the villages without training. Training was done after distribution. Beneficiaries were not aware of the important aspects which were to be applied in order to have good production. Beneficiaries ranked training as the second most important constraint which impacted negatively on egg production projects. They were given layers and thereafter received training which was superficial. Few of them received comprehensive training at institutions such as Tompi Seleka.

c. Diseases and unavailability of veterinarian.

As indicated in the literature almost all countries which were involved in poultry productions had a problem of diseases. Whether through direct losses or through reduced production, disease continues to be one of the greatest risk factors with which beneficiaries have to contend with unless the causes thereof are identified and the control measures are put in place.

At the area of study this was heightened by the unavailability of veterinarian service during the outbreak of diseases. Request made through their local village leaders for the attention of the veterinarian services were not adequately attended to.

Diseases and the unavailability of veterinarians were ranked the third most important constraint which affected production.

d. Mortality of layers on arrival

Beneficiaries ranked mortality of layers on arrival as the fourth most important constraint. Mortality of some of the layers was experienced by beneficiaries within the first two days i.e. beneficiaries experienced mortality rate of layers on their arrival and afterwards. No stress packs were supplied to ensure that the layers are attended to on

their arrival. The health status of the layers was questioned since no immunization cards were shown to them.

e. Layers not of the same age.

Households were supplied with eighteen layers of twenty weeks as part of the starter packs. Beneficiaries highlighted that layers were not of the same size and started laying at different months i.e. the start of laying ranged between one to four months. The fact that the start of laying ranged from first to fourth month raises questions on whether when the supplier delivered layers, important aspects such as strain and age of layers were checked from the contract.

Varying ages of the layers was ranked the fifth most important constraint which affected production.

f. Inadequate starter packs

The majority of beneficiaries of starter up packs were given the same number of starter packs each i.e. a cage, eighteen layers of twenty weeks, four bags of feed, nipple and a trough. They were expected to produce, consume and sell surplus. A general outcry was on the quantity of layers as well as that of the feed. Inadequate starter pack was ranked the sixth most important constraint that affected production.

g. Theft and predation

Theft and predation decrease the number of eggs laid per day and affect production negatively. According to a FAO report (2001:33) the house is supposed to secure the flock against predators, thieves and ensure good management.

During the survey an observation was made with regard to some of the households which were without adequate housing to put the cage in, hence they put the cage

outside without proper security. Some of the layers were stolen or eaten up by animals. Beneficiaries ranked theft and predation the seventh most important constraint that affected production.

figure 2. An example of shelter outside where some of the beneficiaries put a cage.

g. Cages too small

Cages that are too small were ranked the eighth most important constraint. Squashed layers in a cage become stressed and cannot move freely. Cages that are too small contribute to the health status of the layers. According to a FAO report (2001:33) poultry can get diseases from a house when they are too crammed. This implies that it must be taken into account that the size of the house is in proportion to the number of layers.

Both the extension officers and beneficiaries of starter up packs identified constraints which impacted negatively on the success of egg production projects. Of the constraints identified, similar ones experienced by both are training, diseases, inadequate starter up packs and feed.

Makhuduthamaga district is no exception with regard to constraints experienced which impacted negatively on egg production. As indicated in the literature review countries such as Botswana, Zimbabwe, Mozambique, Bangladesh, Thailand, Niger, Malawi, Ghana, Morocco, Pakistan in Chitral and Charsadda districts etc. (Badubi 2006; Bessei 1990; Nqindi 2003; Braenckaert 2000; Awuni 2003; Benabdeljelil 2001 Kampeni 1997; Benabdeljelil 2001) did rank diseases as one of the most important constraints that resulted in high mortality rates and low egg production. The diseases experienced in most of the counties mentioned above was a result of none or minimal health coverage.

The success of the abovementioned countries was also negatively impacted by aspects on poor managerial skills, lack of adequate knowledge of poultry production, training, irregular coverage or cessation of extension services which resulted in lack of technical follow ups, Countries such as Malawi, Botswana, Belize, Guatemala, Mosquita and Charsadda district experienced lack of proper housing which resulted in theft and predation. (Kampeni 1997; Moreki 2006; Mallia 1990; Faroog 2002).

In Niger most of the stock supplied free of charge disappeared or died due to lack of interest and care.

In countries such as Botswana, Bangladesh, Thailand, Morocco and Low Deficit Countries feed related aspects such as poor quality, inadequate quantity and high cost accounted for low egg production. (Badubi 2006; Hellen Keller International report 2004; Braenckaert 2000; Benabdeljelil 2001; Bishop 1995)

4.3 The extent to which constraints were addressed.

Three constraints were addressed i.e. insufficient transport, inadequate starter pack and one aspect concerning the feed i.e. soft shelled eggs.

Most of the extension officers are given subsidized vehicles.

The quality of eggs i.e. soft shelled eggs was improved by mixing the feed with shells of used eggs.

The quantity of the starter pack has been increased i.e. extension officers are now distributing thirty six layers and eight bags to new beneficiaries.

4.4 Demographic characteristics

The total number of the beneficiaries of the starter up packs interviewed is 144. Of the total number of respondents (table 5) 17% are males and 83 % are females.

Of the total number of males who participated in the study more than three quarters (83%) are married whereas 8% are both single and widowed. None are divorced.

Of the total number of females who participated in the study, 40% of them are married, 39% are widowed, and 18% are single with nearly 3% divorced.

The findings reveal that 47% of the beneficiaries are married.

Beneficiaries of starter up packs are affiliated to different denominations. Of the different religions that they are affiliated to, the majority are in the Z.C.C church with the least in the traditional churches.

From the results the majority of the beneficiaries are females. The findings are supported by a report in Intergrated Development Plan (IDP) of Makhuduthamaga District that there is a higher proportion of females in terms of gender breakdown. The

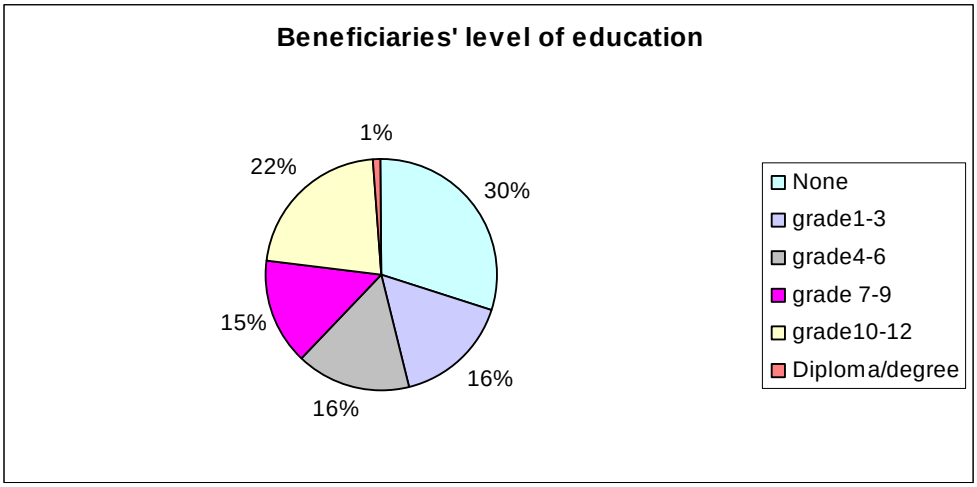
reason for the trend is that of labour migration which is predominantly male to economic centres such as the metropolitan areas of Gauteng province.

Table 5: Sex, marital status and religion of head of households.

Personal variables				
Sex --->	**Male**		**Female**	
	n	**%**	**N**	**%**
Marital status				
Married	20	83.3	48	40
Single	2	8.3	22	18.3
Widowed	2	8.3	47	39.2
Divorced	-	-	3	2.5
Total	**24**	**100**	**120**	**100**
Religion				
Christian	2	8.3	30	25
Traditional churches	4	16.6	16	13.3
None	6	25	19	15.8
Z.C.C	12	50	55	45.8
Total	**24**	**100**	**120**	**100**

The level of education of beneficiaries of starter up packs varies. It is divided into six categories (figure 1 below) namely none or no formal schooling (30.%), grade 1-3 (16%), grade 4-6 (16%), grade 7-9 (15%), grade 10-12 (22%), Diploma/degree(1%). The six categories were further divided into three groups as follows: none - grade 3 (46%), grade 4 – 9 (31%) and grade 10-12 (22%).

Figure 1. Beneficiaries level of education.



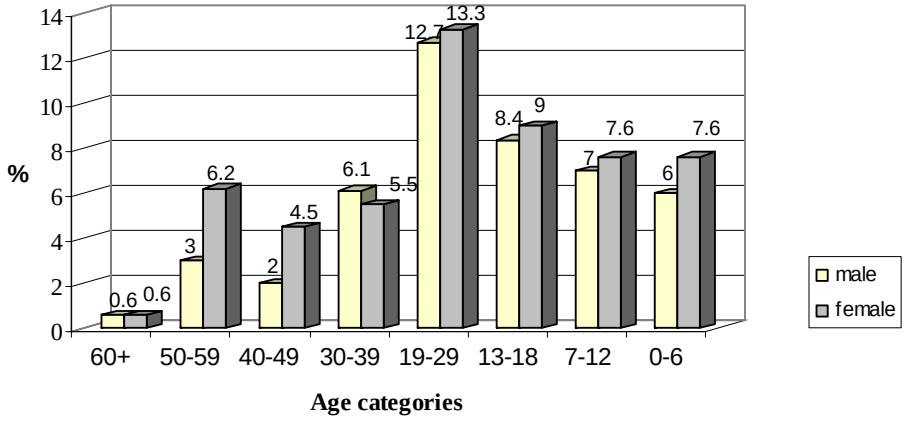
From the results 46% of the beneficiaries fall within the category of none to grade three with 30% of them with no formal schooling. Of the three groups that of grade 10-12 has few beneficiaries i.e. most of the beneficiaries' level of education is below grade 10.

The findings are also supported by a report on Intergrated Development Plan (IDP) of Makhuduthamaga District that there is high percentage of population in the education category of none schooling and primary education with very few in matric and tertiary institutions. This is not surprising since as highlighted under the area of study that Makhuduthamaga District is characterised by high levels of poverty, illiteracy and lack of both social and economic development.

In figure 2, ages of the household members are divided into eight categories. Data analysis indicates that about 1% of the total household of both males and females fall within the category 60 years and above; 9% fall within the category 50- 59 years; A little over 6% fall within the category 40 – 49 years; 12% fall within the category 30 – 39 years, 26% fall within the category 19 – 29 years,17% fall within the category 13-

18 years, close to 15% fall within the category 7-12 years and nearly 14% fall within the category 0-6 years of age.

Figure 2. Age of household members



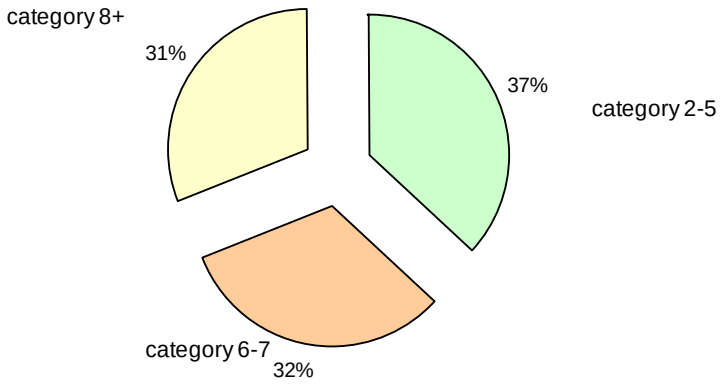
The findings reveal that the highest number of household members fall within the category 19-29. Of the eight categories one category i.e. 60 years and more has an equal percentage of both males and females, one category i.e. age category 30-39 has the highest percentage of males than that of females and the remaining six have percentages of females higher than that of males.

Of the eight categories, the age category 60+ has the least total number of beneficiaries. More than half i.e. 54.5% of the beneficiaries are females. This is in line with the national trend.

The density of household members as illustrated in figure 3 varies. The total number of households members are divided into three categories namely, households with a total number of two to five (2 – 5); households with a total number of six to seven (6 – 7) and households with a total number of equal to or more than eight (8 +); with the percentages 37, 32 and 31 respectively. The category 2-5 has the highest percentage

of household members. There is not much difference on the density of household members between categories 6-7 and 8+.

Figure 3. Numbers of individual members per household



4.5 Selection criteria and starter up packs.

The responses on the selection criteria form (table 6) were used to describe the beneficiaries of starter up packs with regard to the categories in which they fell. The selection criteria form consists of six categories. The beneficiaries fall within four categories namely: households with monthly expenditure of R200.00 or less (67%); orphaned children (2%); household headed by individual infected or affected by HIV/AIDS (1%); household headed by individual with disability (2%). The seventh category “other” consists of beneficiaries who do not fall in any of the six groups. It is divided into three groups namely: households with more than two grants (22%), those involved in vegetable projects (4%) and those that are involved in projects as well as receiving grants (3%).

Table 6: Selection criteria

selection criteria		**n**	**%**
Households with a monthly expenditure of R200.00 or less		96	66.7
Orphaned children		3	2.1
Households headed by individual infected/affected by HIV/AIDS.		1	.7
Households headed by individual with disability		3	2.1
Child headed household			
Households that are victims of natural disasters			
Other:	More than two grants	31	21.5
	Projects	6	4.2
	Both projects and two grants	4	2.8
Total =		144	100

In order to qualify for the agricultural starter up packs the beneficiaries were to fall in one or more of the selection criteria used for identifying those who participated in the food parcels scheme.

The results revealed that of the total number of beneficiaries the majority of them (close to 72%) fell within the selection criteria as classified by the policy. Nearly 29% do not qualify since they do not fall in any of the prescribed criterion. They fall under the category other which is classified into three groups namely households with more than two grants, those involved in vegetable projects, and those that are involved in projects as well as receiving grants. The majority (22%) of beneficiaries that fall under the category other are those who receive more than two grants. Of the total number of beneficiaries none fall within the category of child headed households and that of households that are victims of natural disasters.

On identification of the starter up packs received data analysis (table 7) indicates that the majority of beneficiaries were supplied with the quantity as stipulated in the policy. All (100%) of the beneficiaries of starter up packs received 18 layers, four bags of laying mash and a cage each. 99% received feeding troughs, 94% received nipples. Of the total number of beneficiaries; 2% did not receive feeding troughs, nearly 6% did not receive nipples, and close to 1% did not receive both feeding troughs and nipples.

Table: 7 Items of Starter up packs received.

Item	**n**	**%**
18 layers	144	100
Nipples	136	94.4
Feeding troughs	143	99.3
4bags of laying mash	144	100
Cage	144	100

It can be concluded from the results that the majority of the beneficiaries of the starter up packs received all the items as stipulated in the policy. Of the respondents in various villages only the ones in Manganeng indicated that they never received some of the items. Nearly 13% of the total number of beneficiaries at Manganeng village indicated that they never received feeding troughs while 87% indicated that they never receive the nipples.

Failure to supply some of the beneficiaries with complete starter up packs put them at a disadvantage with regard to effective and efficient running of the household project. Complete supply of the prescribed quantity of resources is a precondition for the effective running of the projects. When the precondition is not fulfilled the ability of

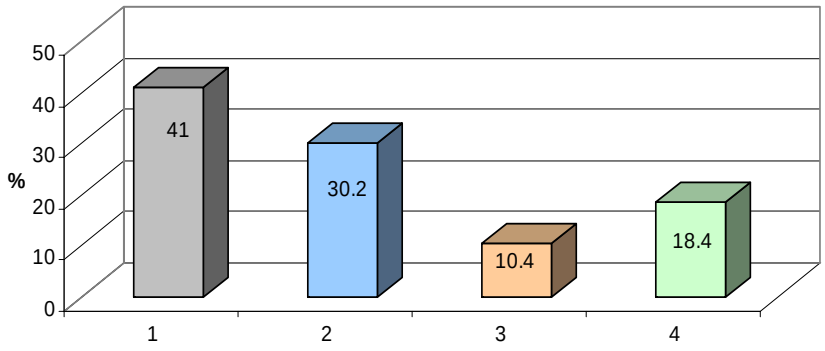
the households to perform in line with government expectations is severely constrained.

The Limpopo Department of Agriculture embarked on four households' food projects as a means for the food insecure households to participate in food production projects. Beneficiaries were given an opportunity to choose amongst the four household projects they want to be involved in.

Data analysis (figure 4) indicates that amongst the four home based egg production projects; a high percentage of the beneficiaries of starter up packs chose the egg production projects for the following reasons:

i. easy to care for with low labour requirements (41%) ii. hunger (30%.) iii. source of meat and eggs for household consumption (10%). and iv. income accrued from sales of both cull hens and eggs used for purchasing households goods.(18 %).

Figure 4: Reasons for choosing starter up packs



1. Easy to care for with low labour requirements. 2. Hunger. 3. Source of meat and eggs for household consumption. 4. Income accrued from sales of both eggs and cull hens to be used for purchasing household goods.

The choice based on easy to care for with low labour requirements is in line with Batty (1980:1) that household egg production projects are reasonably easy to handle and manage and do not necessarily require great capital outlay.

Reasons given by the beneficiaries are the same as the ones highlighted at various countries. From the literature review Dolberg (2004:7) indicates that egg production increases food security, reduces vulnerability and enable the households to start up a process of moving out of poverty. Egg production projects also provide the cheapest source of protein in the form of eggs and meat and are a ready cash income to help the households to purchase their daily requirements.

From the reasons given the majority of beneficiaries made choices based on easy maintenance and out of hunger.

The beneficiaries of starter up packs responses with regard to the quantity supplied as well as whether proper consultation was made prior to distribution was measured using 5 point Likert scale with positive statements that ranged from 1= Strongly Disagree to 5= Strongly Agree. One statement was used in each, for them to reflect the extent to which they Agree or disagree with the contents of each statements.

Data analysis (table 8) indicates that beneficiaries of Agricultural starter up packs disagreed with the statement that “the quantity of starter packs supplied is enough to sustain the projects” (94.5%, m = 1.33), and agreed with the statement that “proper consultation was made prior to distribution of starter up packs “(76.4%, m = 3.60).

Table 8: Consultations and the quantity of starter up packs.

Variable	DA%	U%	A%	m
Quantity of starter packs enough to sustain the household projects.	94.5	2.8	2.8	1.33
Proper consultation made prior to distribution.	14.6	9.0	76.4	3.60

From the findings it can be deduced that beneficiaries were not satisfied with the quantity of starter up pack supplied from the onset. However they were satisfied that proper consultation was made prior to distribution of starter up packs. Although a good start was made with proper consultation prior to distribution of starter up packs the inadequate starter up packs supplied constrained the ability of the households to participate effectively and efficiently on egg production projects.

4.6 Skills training.

To measure whether the beneficiaries were trained on various skills namely technical, marketing, financial, management and administration in order for them to sustain the households' projects twenty four statements in all the skills ranging from three to seven were used. Five point likert scale ranging from 5=Strongly Agree to 1=Strongly Disagree was used to measure whether they agree or disagree with the contents of the statements.

Six statements were used to determine the technical skills of the beneficiaries of starter up packs. The mean values ranged between 2.35 and 4.94.Data analysis (table 9) indicates that a higher percentage agreed with four statements. Ninety seven percent kept feed for layers always dry; all the beneficiaries ensured that bottles had cool fresh water at all times and cleaned floors at least once a week. Close to ninety

nine percent exposed layers to a maximum of 16hrs of light every day". A mean of 2.61 reflects that beneficiaries were uncertain on the statement that layers are only fed with laying mash while close to sixty percent of the beneficiaries of starter up packs disagreed with the statement that feeding troughs had feed at all times.

Table 9: Technical skills.

Variable	DA%	U%	A%	m
Kept feed for layers always dry	2.8		97.3	4.73
Feeding trough had feed at all times	59.7	10.4	29.9	2.35
Fed layers only with laying mash	50	9.0	40.9	2.61
Bottles had cool fresh water at all times			100	4.89
Cleaned floors at least once a week			100	4.94
Exposed layers to a maximum of 16hrs of light every day.	.7	.7	98.6	4.22

From the findings it can be deduced that the majority of the beneficiaries managed to keep feed for layers always dry, ensured that bottles had cool fresh water at all times, cleaned floors at least once a week and exposed layers to a maximum of 16hrs of light every day.

Beneficiaries of starter up packs were uncertain with regard to whether layers are fed only with laying mash while close to sixty 60% of them were unable to ensure that feeding troughs had feed at all times.

Feed is necessary for the body maintenance, body growth and feather production. For the maximum egg production it is necessary that the amount of feed consumed by the bird each day contains the necessary nutrients to realize the full genetic potential and

at the same time to allow a bird to maintain its body in top health and physical conditions. (Bell 2002: 292)

Seven statements were used to determine the marketing skills of the beneficiaries of starter up packs. The mean values ranged between 1.33 and 3.89 with five less than 2.4.

Data analysis (table 10) indicates that the beneficiaries of starter up packs agreed with only two of the seven statements on marketing of both cull hens and eggs. The majority of beneficiaries i.e. 92% agreed that they advertised the selling of eggs whereas over half i.e. 63% indicated that they advertised the selling of cull hens. All (100%) of the beneficiaries disagreed with the statement on pricing of eggs according to their sizes. The majority of the beneficiaries disagreed with the statements: put eggs of the same size together, packaged eggs for the market, had a contract with the market and that of supply and sale consistency with the percentages 99.3%; 97.9%; 96.6%; 96.6% respectively.

Table 10: Marketing skills

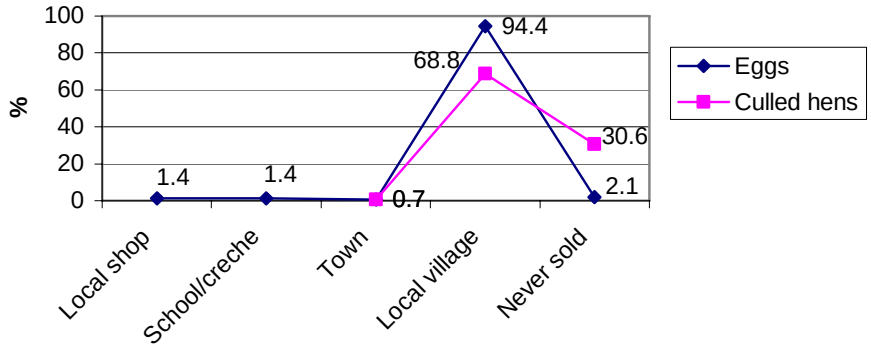
Variable	DA%	U%	A%	m
Advertised the selling of eggs	4.9	2.8	92.4	3.89
Advertised the selling of cull hens	32.4	4.2	63.4	3.04
Put eggs of the same size together	99.3		.7	1.37
Priced eggs according to their sizes	100			1.33
Packaged eggs for market	97.9		2.1	1.41
Had a contract with the market	96.6	1.4	2.1	1.37
Had a supply and sale consistency	96.6	2.1	1.4	1.67

From the findings beneficiaries were able to advertise the selling of both eggs and culled hens. However all the beneficiaries did not classify their eggs according to their various sizes. Eggs of different sizes i.e. small, medium, large and extra large were put together and sold. Pricing of eggs was not according to their sizes. Eggs were not packaged for the market and they never had contract with the markets. There was no supply and sale consistency i.e. chances for the customers to have consistent supply was not taken into account.

The uncertainty of the customers with regard to inconsistent supply of eggs when in need, render the projects uneconomical i.e. failure to secure the confidence of the customers' impact negatively on the future purchases from the household egg production projects.

On the question with regard to market for eggs and cull hens data analysis (figure 5) indicates that both eggs and cull hens were sold at various places.

Figure 5. Market of sales of both eggs and culled hens



The results revealed that the majority of the beneficiaries managed to sell eggs. Eggs were sold at places such as schools/crèche, local shops, town and at the local village.

The majority of the beneficiaries i.e. about 94% who managed to sell their eggs did so at the local villages. About 1% sold their eggs in local shops and in schools/crèches. Of the total egg sales the least were sold in town and 2% of the beneficiaries never sold. Nearly 69% of the beneficiaries sold culled hens at the local villages. Slightly over a quarter i.e. 31% never sold culled hens and the least sales were in town. Culled hens were not sold at local shops and crèches/schools.

Three statements were used to determine the financial skills of the beneficiaries of starter up packs. The mean values (table 11) ranged from 1.02 to 2.76 with two less than 2.4.

Table 11: Financial skills

Variable	DA%	U%	A %	m
Kept of expenditure and income records of the money accrued from the sales.	22.2	70.1	7.6	2.76
Money accrued from sales banked	100			1.02
Kept records of feed expenditure	63.9	34	2.1	2.07

From the findings the majority of the beneficiaries of starter up packs were uncertain with regard to keeping of expenditures and income records of the money accrued from sales. More than half of the beneficiaries indicated that they did not keep records of feed expenditures. The uncertainty of the beneficiaries to keep expenditure and income records of money accrued from sales as well as the inability to bank and keep records of feed expenditures rendered the whole exercise unsustainable.

According to Banks (1979:194) every poultry keeper likes to know the progress of his/her flock but paperwork is regarded by many professionals as an irksome chore interfering with the “real work” of egg production.

A simple inventory of prices as well as the number of feeds used per month will enable the beneficiaries to avoid shortages. Record keeping of expenditures and income accrued from sales is very crucial since it is necessary to know the profit and loss so that feed and other household consumables can be budgeted for and purchased when the need arises.

The inability of the households to bank money accrued from sales reflects either the unavailability of the money to be banked, ignorance or unawareness of the importance of banking. It implies that the beneficiaries are managing their projects from hand to mouth.

Five statements were used to determine the management skills of the beneficiaries of starter up packs. The mean values ranged between m=1.06 and m= 4.84 with two less than 2.4.

Data analysis (table 12) indicates that beneficiaries agreed with three statements: kept the cage in a house, kept cages slanted forward so that eggs can roll down slowly and kept the layers under shelter away from the sun, rain and cold with the percentages 97.9, 95.8, 86.1 respectively.

Beneficiaries disagreed with two statements: All disagreed with the statement of ordering new batch of layers four months before the old ones are a year old. Almost all (99%) disagreed with the statement on selling of culled hens after the new ones started to lay eggs.

Table: 12 Management skills.

Variable	DA%	U%	A%	m
Kept cage in the house.	2.1		97.9	4.84
Kept cage slanted forward so that eggs can roll down slowly.	2.1	2.1	95.8	4.76
Ordering of new batch of layers four months before the old ones are a year old.	100			1.06
Sold cull hens after the new ones started to lay eggs.	199.3		0.7	1.07
Kept the layers under shelter away from the sun, rain and cold.	11.1	2.8	86.1	4.04

From the results beneficiaries disagreed that they ordered new batch of layers four months before the old ones are a year old as well as selling of cull hens after the new batch started to lay eggs.

This is in contrary to a report in Department of Agriculture that a hen should be kept for one year then sold as cull hens. According to Kay (1977:32) a hen always lays more eggs in its first year than any subsequent years and the older it becomes the fewer eggs it lays annually. For Austic et al (1990:218) as the production year advances and mature weight is reached the rate of egg production begins to fall. This implies that the older the hen becomes the fewer egg output can be obtained.

It can be deduced from the findings that beneficiaries did not take into account that the number of eggs laid peaks halfway through the year and then starts dropping i.e. if hens are kept for longer than a year they will start laying fewer eggs until they drop

altogether, however they eat the same amount of food so profit become less and the projects become uneconomical. The best return both in financial terms and egg output can be obtained during the first year of production hence the need to cull and sell layers which do not lay properly. When the layers no longer lay sufficiently to justify their keep, culling is the solution.

However most of the beneficiaries kept cages which were slanted forward so that eggs can roll down slowly in cages. They also kept the layers under the shelter away from the sun, rain and cold.

Three statements were used to determine the administration skills of the beneficiaries of starter up packs. The mean values ranged between 3.67 and 3.92 with all of them greater than 3.4

Data analysis (table 13) indicates that more than three quarter of the beneficiaries agreed with all the statements on administration of the projects. Beneficiaries agreed that they identified problems on production and notified the extension officers, attended meetings on layers and have a schedule whereby household members have chance to record, feed, clean, provide water, collect eggs, package and sell eggs with the percentages 83.4%, 93.7% and 90.2% respectively.

Table: 13 Administration skills.

Variable	DA%	U%	A%	m
Identified problems on production and notified the extension officers.	14.5	2.1	83.4	3.67
Attending meetings on layers	3.5	2.8	93.7	3.92
Have a schedule whereby members of the household have a chance to record, feed, clean, provide water, collect eggs, package and sell eggs.	6.3	3.5	90.2	3.89

From the findings the majority of the beneficiaries were able to identify problems on production and notify the extension officers, attended local meetings on egg production organised by group leaders as well as taking into account that household members have a chance to record, feed, clean, provide water, collect eggs, packaged and sell eggs.

It can be concluded from the results that household egg production projects can easily be run by family members with constant advices from the extension officers. Beneficiaries had a routine whereby household members are able to manage and spot weaknesses related to production if any, even if the head of the household has commitments elsewhere.

The results on skills training reveal that beneficiaries were unable to apply or implement some of the important aspects which affected egg production. The inability of the beneficiaries to order new batch of layers four months in advance before the old ones started to lay eggs, selling of eggs and that of culled hens when the new ones

started to lay eggs as well as the uncertainty of feeding layers only with laying mash impacted negatively on supply and sale consistency.

The uncertainty on keeping of expenditure and income records of the money accrued from the sales as well as the inability to bank and keep records of feed expenditures reflects that beneficiaries were unable to determine deviations with regard to production.

Although the beneficiaries had no contract with the markets, ninety four percent were able to sell eggs and close to 69% were able to sell culled hens at the local village.

4.7 Support from the extension officers.

Three statements were used to determine the extent of support received by the beneficiaries of starter up packs from the extension officers. The beneficiaries of starter up packs responses with regard to the support received from extension officers was measured using 5 point Likert scale with positive statements that ranged from 1= Limited extent to 5= Very Great Extent. The mean values ranged between 2.35 and 2.40 with two less than 2.4.

Data analysis (table 14) indicates that slightly over half i.e. 52% of the beneficiaries of starter up packs considered training received from the extension officers limited to adequately run household projects efficiently, they also indicated that problems on implementation of projects were to a limited extent immediately attended to when reported. Slightly over half i.e. 54% of the beneficiaries indicated that the level of support had to a limited extent impacted positively on the effective and efficient running of the projects.

Table 14: Support from the extension officers

Variable	LE%	AE%	GE%	m
Training received is adequate to run household projects efficiently.	52.1	29.9	18.1	2.40
Level of support form the officers impacted positively on the effective and efficient running of the projects.	54.2	35.9	9.9	2.35
Immediate attention to problems on the implementation of projects.	52.1	34.7	13.2	2.35

From the findings it can be deduced that the level of support that the beneficiaries had from the extension officers was limited for the beneficiaries to run household egg production effectively and efficiently.

During any implementation of projects unforeseen problems arise and this also happened at Makhuduthamaga District. For the beneficiaries the reported problems were to a limited extent attended to by the extension officers.

On the question with regard to the help that beneficiaries received from the extension officers, data analysis (table 15) revealed that slightly more than a quarter i.e. 29% of the beneficiaries are of the opinion that the help received from the extension officers is poor, slightly over half i.e. 52% reported that the help received from the extension officers is fair, 8% were uncertain with regard to the help received from the extension officers while 11% reported that the help received from the extension officers was good.

Table 15: Help from extension officers.

Variable	n	%
Poor	41	28.5
Fair	75	52.1
Uncertain	12	8.3
Good	16	11.1
Total =	**144**	**100**

On the question with regard to the frequency of visits data analysis (table 16 below) indicates that 13% indicated that they never had visits from the extension officers, about 47% indicated that they sometimes had visits, 16.0% indicated that they seldom had visits whereas about 24% indicated that they often had visits.

Table 16: Frequency of visits from extension officers.

Variable	n	%
None	19	13.2
Sometimes	68	47.2
Seldom	23	16.0
Often	34	23.6
Total =	**144**	**100**

Three statements were used to determine whether the beneficiaries of starter up packs agreed or disagreed with the contents on information received on egg production. The mean values ranged between 1.29 and 1.67 with all of them less than 2.4

The majority of beneficiaries of starter up packs (table 17) disagreed with all the statements: “received documents with information on egg production (84%, m =

1.67), “read and understood the contents” (94.4%, m = 1.34), and “followed the requirements for egg production (95.8%, m=1.29).

Table 17: Information received by beneficiaries.

Variable	DA%	U%	A%	m
Received documents on information on egg production.	84	4.9	11.1	1.67
Read and understood the contents.	94.4	2.1	3.5	1.34
Followed the requirements for egg production	95.8	2.1	2.1	1.29

From the findings it can be deduced that the beneficiaries were never supplied with any written documents with information on egg production projects.
Households require practical information on all aspects of egg production.

On the question of formation of egg cooperatives all the beneficiaries indicated that there are no local egg cooperatives in their villages. There are no responses on subsequent questions related to egg cooperatives since no cooperatives were formed.

The results on support from the extension officers revealed that only thirteen percent of the beneficiaries indicated that they had no visits and slightly over half i.e. fifty two percent considered the help from the extension officers as fair; slightly over half of them considered the extent of the level of support as limited with regard to efficient implementation of projects.
Eighty four percent of the beneficiaries were never supplied with any document with information on egg production. The absence of simple practical information on egg

production to majority of beneficiaries as well as lack of visits by extension officers impacted negatively on the running of projects.

Frank communications concerning the daily activities on running the home based egg production projects between the extension officers and the beneficiaries of starter up packs is important. Immediate communication of problems as soon as there is an indication that they exist is crucial so that they are not late for correction. However the urgency at which problems are reported and attended to is crucial hence the need for training prior to and during the implementation of home based egg production projects. Although beneficiaries considered the help that they received as fair, the limited extent with regard to the urgency at which reported problems were attended to did affect the efficient running of household egg production projects.

The fact that beneficiaries considered the training that they received as limited for them to adequately run the household projects in itself impacted negatively on egg production. Production may also be affected by the fact that thirteen percent of the beneficiaries never had visits from the officers and slightly over twenty eight percent considered the help from the officers as poor.

4.8 Government expectations

Five statements were used to determine the extent to which beneficiaries of starter up packs met government expectations. The mean values ranged between 1.42 and 3.80 with three less than 2.4, one greater than 2.4 and less than 3.4 and 1 greater than 3.4 Data analysis (table18) indicates that eighty four percent of the beneficiaries of the starter up packs agreed with only one statement on government expectations with regard to assembling of a cage, nipples and putting of feeding troughs correctly in a

cage. A mean of 2.89 reflects that beneficiaries were uncertain with regard to "producing, consuming and selling of the surplus"

The beneficiaries disagreed with three statements. The majority of beneficiaries disagreed that they bought sufficient feed for the layers, purchased second batch of layers on their own and purchased feed throughout the egg laying cycle with the percentages 86.1%, 65% and 88.9% respectively.

Table 18: Meeting government expectations

Variable	DA%	U%	A %	m
Produced, consumed and sold the surplus	32	41.0	27.1	2.89
Bought sufficient feed for the layers	86.1	12.5	1.4	1.55
Purchased second batch of layers on their own	65.3	9	25.7	2.22
Purchased feed throughout the egg cycle	88.9	7	10.5	1.42
Able to assemble a cage, nipples and put feeding troughs correctly in the cage.	4.2	11.8	84	3.80

Daily attention to many management details for the laying flock is important. It is during this period that the household are to produce, consume and ensure that there is surplus. Maximum egg production is essential and the value of proper management of layers cannot be overemphasized.

From the findings beneficiaries were unable to meet all government expectations. The uncertainty of the beneficiaries with regard to producing, consuming and selling of surplus as well as the inability to buy sufficient feed for the layers, purchase second batch of layers on their own and feed throughout the egg cycle impacted negatively on the sustainability of home based egg production projects.

However the beneficiaries were able to assemble a cage, nipples and put feeding troughs correctly in the cage.

4.9 General information on egg production projects

Households identified as food insecure were supplied with starter up packs in order to produce, consume and sell the surplus. With the money accrued from the sales of both eggs and culled hens they were to purchase household consumables, feed after the four bags were finished and another batch of layers to sustain the projects.

Data analysis (table 19) indicates that 141 beneficiaries managed to sell eggs. The prices of eggs differed and ranged between R0.50 to R1.00 with a mean of R62.32.

All the beneficiaries who sold the eggs indicated that the recordings for the total amount sold were inconsistent hence do not know the total amount accrued.

According to Chavunduka (1984:5) accurate records reflect the costs of production and the income derived from the operation. From the records on projects households can be able to tell if they are making profit or loss. Good record keeping will also pinpoint specific problems such as a drop in egg production

Out of 140 beneficiaries that culled their layers, some used them for social functions at no price while others sold them at varying amounts of up to R30.00 with a mean of R16.32.

A total number of 25 sold culled hens and the total amount accrued from selling ranged between R0.00 to R1800.00 with a mean of R258.83.

All the beneficiaries indicated that they never recorded amount used for purchasing household consumables.

The total number of layers which died ranged between 1 and 17 with a mean of 5.10, and the total number of layers slaughtered and or used for social functions ranged between 1 and 18 with a mean of 6.14.

From the findings taking into account that a ration of six eggs per household was prescribed for consumption per day, a mean of R62.32 indicates that a dozen of eggs was sold at R7.44. If the prescribed amount of ration per household per day is adhered to, and the layers lay eggs daily then a total of R208.00 is accrued from sales of eggs per month. With a mean of R121.9 price of feed at retailers the households are left with only R87.32.

The mean of 5.10 of the number of layers that died as well as 6.10 of the layers slaughtered for household consumption and or used for social functions impacted negatively on egg production and profit.

A mean of 16.89 for prices charged for selling culled hens is not economical since the price for purchasing new batch of layers was at R30.00 each. Households sold culled layers at distress prices which indicate that either the culled hens were of poor quality as a result of feed problems or the households were in desperate need of money.

It can be concluded that the food insecure households with an income of R200 or less and even no income at all, are left with very little amount of money taking into account the number of layers that died, those slaughtered or used for social functions, those that started laying during the fourth month as well as diseased layers with low production. The amount that they are left with is not enough to purchase households consumables let alone sustain the projects.

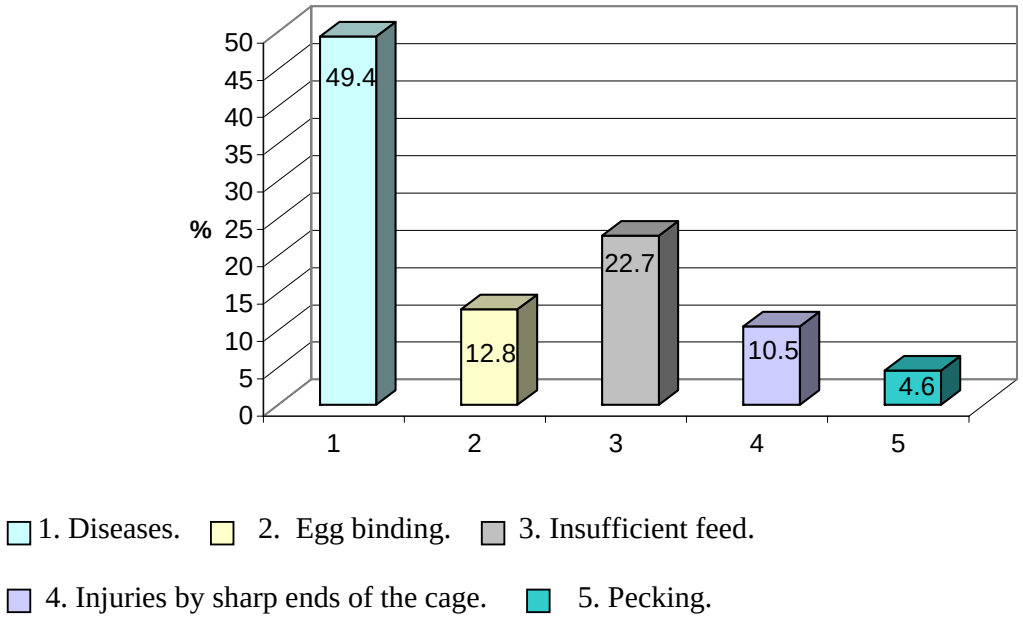
Table 19: Prices, income and expenditures, number died, slaughtered/used for social functions.

	n	min		max	m
Price of one egg.	141	R0.50	-	R100	R62.32
Price of cull hen.	140	R0.00	-	R30.00	R16.89
Price of feed.	137	R80.00	-	R170.00	R121.9
Amount spend for purchasing feed.	143	R0.00	-	R1530	R673.47
Amount accrued from selling layers.	25	R0.00	-	R1800	R258.83
Layers slaughtered and or used functions for social	98	1	-	17	5.10
Layers died	120	1	-	17	6.14

On the question with regard to mortality of layers more than three quarter (79%) of the beneficiaries indicated that they experienced mortality of the layers while 21% indicated that they never experienced any mortality of layers.

Those that experienced mortality identified various reasons for the mortality of their layers as indicated in figure 6.

Figure 6: Reasons for the mortality of layers



Close to half (49%) of the beneficiaries of starter up packs indicated the mortality of layers was as a result of diseases. According to Batty (1980:132) there is a definite relationship between the environment in which birds are reared and managed and the danger of diseases. For him diseases in a flock are far likely to occur when the housing and premises are kept clean and standard hygienic practises are observed. The prevention of outbreak of diseases is the key to minimising losses. Austic et al (1990:229) indicate that the best fed, housed and genetically ideal poultry will not grow or lay eggs up to their full potential if diseased or infested with parasites. Cleanliness is one of the most important preventative measures that can be applied in the control of poultry diseases. Diseases when uncontrolled can impact negatively on production efficiency.

According to a report in Department of Agriculture (2004:1) when layers are healthy they eat less food and produce more meat and eggs. They are less trouble to look after and less money is spent on medical cost.

Close to 13% of the beneficiaries of starter up packs indicated that losses of their layers were attributed to egg binding. According to Batty (1980:141) it sometimes happens that a bird is unable to pass a particularly large egg without assistance. Some layers were constantly strained when trying to lay eggs which eventually broke inside. Banks (1979:164) indicates that the inability of a hen to produce an egg when it is making an obvious attempts to lay, with frequent visit to the nest and signs of distress suggest an abnormally large egg or a contraction of the oviduct. As indicated in the literature review in countries such as Botswana prolapse of the uterus was also identified as one of the conditions that affected egg production. (Badubi: 2006)

About 23% acknowledged that insufficient feed accounted for their loss.
Poultry mortality can be reduced at households whereby beneficiaries know how correctly to feed and manage their poultry.

Nearly 11% of the beneficiaries indicated that layers were injured by sharp ends of the cage. Some of the pecking occurred on injured layers which were not taken out of the cage. According to Bell (2002:99) beak trimming minimizes beak inflicted injuries so that stocks which are predisposed to feather pecking and cannibalism actually survive and perform as well as stocks which have little pecking tendency.

Nearly 5% of the beneficiaries had losses as a result of the layers pecking one another. Banks (1979:164) indicates that after much strain and succeeding in laying a large egg the oviduct is sometimes forced out and protrudes through the cloaca which becomes a focal point for other layers to start pecking. Twinch (1985: 55) indicates that constant strain from attempts to remove the obstruction may result in reddish

tissue seen protruding from the vent which can result in a nasty case of cannibalism within the layers. Some of the mortalities which occurred as a result of pecking might have been avoided if the layers were beak trimmed prior distribution.

It can be concluded from the findings that beneficiaries were able to detect the problems on egg binding but were unable to assist the layers to lay eggs without much strain.

On the question with regard experience in poultry production projects; the majority of the beneficiaries (79%) indicated that they never participated in any poultry projects before. About 5% indicated that they participated in poultry projects before.

On the question with regard to beneficiaries' future choices on four types of household projects, table 20, shows that close to 58% of the beneficiaries still consider egg production as their future mostly preferred household production projects. This is contrary to Browne (1986) who indicates that institutional failure is considered a loss of confidence in the rural areas i.e. government projects that fail because of an inadequate attention to institutional capacity quickly cause rural farmers to loose confidence in government agricultural strategies.

This is also contrary to Paul (1983:82) who argued that as long as incomes do not cross threshold beneficiaries cannot and will not demand the services of certain types of programmes.

Milk, fish and vegetable production are the least preferred with the percentages 88.2%, 89.6% and 66.0% respectively.

Table 20: Beneficiaries future choices of projects.

Project	mostly preferred%	preferred%	slightly preferred%	least preferred%	Total %
Milk production	6.3	2.1	3.5	88.2	100
Egg Production	57.6	2.8	.7	38.9	100
Fish production	2.1	3.5	4.9	89.6	100
Vegetable production	23.6	8.3	2.1	66.0	100

On the question with regard to whether livelihoods were improved after the implementation of starter up packs; more than three quarter (78%) indicated that the livelihoods were improved to a limited extent, 20% indicated that livelihoods were improved to an average extent while only 2% indicated that livelihoods were improved to a great extent.

The fact that more than three quarter of the beneficiaries stated that their livelihoods were to a limited extent improved implies that not much was done in terms of capacitating food insecure households to change or improve their status of food insecurity. With limited improvement of livelihoods, the whole exercise or implementation of egg production projects for the majority of beneficiaries became more of handouts or the same as food parcels scheme rather than to actively participate in reduction of food insecurity through households' production.

On the question concerning the contribution of home based egg production projects on access to adequate food, data analysis (table 21) indicates that slightly over a quarter (26 %) of the beneficiaries regarded egg production projects not at all helpful with regard to access to adequate food, slightly over half (52%) regarded egg production projects with regard to access to adequate food as somewhat helpful while

less than a quarter (22%) considered egg production projects with regard to access to adequate food as moderately helpful. None of the beneficiaries considered the egg production helpful and very helpful.

Table 21: Projects' contribution on access to adequate food

Variable	n	%
Not at all helpful	38	26.4
Somewhat helpful	75	52.1
Moderate helpful	31	21.5
Helpful	0	0
Very helpful	0	0
Total =	**144**	**100**

On the question concerning the success rate of beneficiaries with regard to effective and efficient management of the projects data analysis (table 22) indicates that nearly 8% of the beneficiaries rated their success as poor, slightly over three quarter of the beneficiaries i.e. 79% rated their success as fair, nearly 8% were uncertain with their success, while about 6% rated their success as good.

Table 22: Beneficiaries' success rate on effective and efficient running of egg production projects

Variable	n	%
Poor	11	7.6
Fair	114	79.2
Uncertain	11	7.6
Good	8	5.6
Total =	**144**	**100**

To test as to whether there is a significant relationship between skills such as technical, marketing, financial, management, administration as well as support from the extension officers and government expectations Pearson correlation was used. The value of statements in each skill, support from extension officers and that of government expectation were calculated to get the totals scores. From the scores, two skills such as technical and marketing as well as the support from the extension officers attributed much to variations with regard to the extent to which government expectations were met.

Regression analysis was also done with skills and support from the officers as predictors, and dependent variable as government expectations. From the findings 55.7% of the variations in government expectation can be explained to various skills such as technical, marketing, financial, management, administration as well as support from the extension officers.

Table 23: Results of Correlations and Regression analysis.

CORRELATIONS				**Regression Analysis.**		
Skills/	**R**	**p- value**	**100 R^2**	**B coefficient**	**SE**	**p**
Technical	.622	< .0001	38.7	.382	.072	.000
Marketing	.544	< .0001	29.6	.177	.076	.022
Financial	.430	< .0001	18.4	.087	.156	.576
Management	.370	< .0001	13.8	.112	.097	.247
Administration	.370	< .0001	13.7	.089	.132	.501
Support from officers	.513	< .0001	26.3	.371	.074	.000

***100 R^2 = Coefficient of the determination. = Pearson correlation coefficient**

Annova (table 24) was used to test if there is a relationship between levels of education categorised into three groups and the extent to which government expectation were met.

There is no significant difference between skills such technical, financial, management, administration and the level of education with regard to the extent to which government expectation were met. However in skill such as marketing, households in education category 10 – 12 have the highest mean i.e. the higher the level of education the more chances are for the beneficiaries to understand and apply marketing skills.

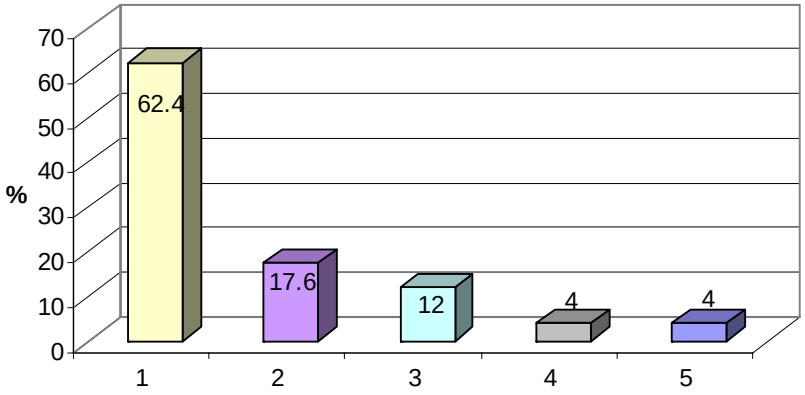
Table 24: Relationship between levels of education and government expectations met.

Skill	**None – grade 3(N=67)**		**Grade 4 – 9(N=45)**		**Grade 10 -12(N=32)**	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Technical	23.42	(2.965)	23.71	(2.936)	24.34	(3.023)
Market	13.57	(2.981)	13.60	(2.864)	15.25	(2.540)
Finance	5.66	(1.399)	5.89	(1.301)	6.19	(1.148)
Management	15.58	(2.075)	15.96	(1.846)	15.94	(1.865)
Administration	11.31	(1.635)	11.44	(1.374)	11.63	(1.185)
Government expectations	12.04	(3.174)	11.31	(2.953)	12.13	(2.393)

Despite the constraints experienced, beneficiaries acknowledged that mistakes (figure 7) were committed during the implementation of home based egg production projects. Beneficiaries of starter up packs identified the mistakes that they committed which impacted negatively on production as: i. Failure to purchase feed throughout the cycle

(62.) ii. Failure to manage the income accrued from sales of both eggs and cull hens (18%) iii. Putting layers in mud houses with little openings which are too hot as result of the fire that they make for cooking (12%) iv. Putting layers in zinc houses with a door as the only opening (4%) and v. overfilling of feeding troughs during the first three months (4%).

Figure 7. Mistakes committed by beneficiaries of starter up packs.



1. Failure to purchase feed throughout the cycle.
2. Failure to manage the income accrued from sales of both eggs and cull hens.
3. Putting layers in mud houses with little openings which are too hot as a result of the fire that they make for cooking.
4. Putting layers in zinc houses with a door as the only opening.
5. Overfilling of feeding troughs during the first months three.

Of the mistakes mentioned 62.4% are on inability to purchase feed throughout the cycle. This in itself affected the adequate amount of feed intake for the layers to lay well. According to Twinch (1985:51) no layer will lay well if it is not fed adequately. In egg production, feeding and better management plays a very important role and can

improve production. Unavailability and insufficient feed for the layers impact negatively on egg production.

Nearly 18% of the beneficiaries of the starter up packs indicated that they failed to manage the income accrued from both the selling of eggs and cull hens properly. Improper management of the amount accrued from sales limited the households to manage projects efficiently. The absence of records indicates the absence of detection on the decrease or increase on production which is crucial for budgeting for the sustainability of the projects. Household egg production projects can provide a reasonable living for the households who can combine a good level of production with economical running costs.

Twelve percent of the beneficiaries of starter up packs indicated that they put layers in mud houses with little openings which are too hot as a result of the heat from the fire which they make for households cooking. According to Bell (2002:130) hot weather can cause depressed feed consumption and even high mortality in caged birds. Low feed intake as result of hot temperatures impact negatively on performance of layers.

Four percent of the beneficiaries indicated that they put layers in zinc houses which are too cold during cold days and too hot during hot days.
Providing an optimum laying environment for the layers starts with a good house. It must be capable of protecting the layers from very hot or very cold temperatures since their performance is affected when subjected to temperatures above and below the optimum.

Four percent of the beneficiaries of the starter up packs indicated that they overfilled the feeding troughs during the first months which resulted in wastage. According to Bell (2002:713) feeding troughs should not be more than half full. Feed is usually wasted during feeding when troughs are overfilled.
Some of the mistakes such as inability to manage funds as well as overfilling of troughs might have been avoided through training prior to the supply of layers.

Although half of the beneficiaries considered egg production projects' contribution to adequate food as somewhat helpful with none on helpful and very helpful; close to 58%n of them still consider egg production as their future mostly preferred projects. It can be concluded from the results that depressed prices for both eggs and culled hens, expensive feed, diseases which resulted in mortality and low egg production as well as those slaughtered or used for social functions rendered the whole excise unsustainable let alone the improvement of household livelihoods.

Despite the mistakes that the beneficiaries acknowledged they rated their success with regard to effective and efficient management of the projects as fair.
Some of the facts that resulted in mortality of layers such as egg binding and cage injuries could have been avoided through training prior to and during the implementation of projects.

4.10 Responses from the extension officers

The second questionnaire was administered to the extension officers. They were expected to respond to questions based on the selection criteria, updating the database

of the beneficiaries, distribution of the starter up packs, skills training, monitoring and support of the process, government expectations and general questions on projects.

On the question of awareness of the selection criteria, data analysis indicates that all the extension officers were aware of the selection criteria form. For the beneficiaries to participate in the home based egg production projects they were to fall in one or more of the aspects listed on the selection criteria form. Through observations, extension officers indicated that they were uncertain about the extent to which selection criteria was adhered to.

4.11 Updating the database of the beneficiaries

To measure whether the database was updated a 5 point Likert scale with positive statements that ranged from 1= Strongly Disagree to 5= Strongly Agree was used. Six statements were used for the extension officers to reflect the extent to which they Agree or disagree with the contents of the statements. The mean value of the statements ranged from 1.31 to 4.63.

Data analysis (table 25) indicates that close to 94% of the extension officers agreed that beneficiaries are enlisted according to the villages in which they reside while slightly over half (56%) agreed that a list of the total number of beneficiaries as well as potential beneficiaries is available. Extension officers were uncertain with the statements that only qualifying beneficiaries as outlined in the criteria are on the database and that of whether the database is immediately updated when there is new information with the mean value of 3.44 and 3.00 respectively.

Close to 94% of extension officers disagreed that beneficiaries are enlisted according to categories they fall as outlined in the selection criteria while 81% disagreed that beneficiaries are enlisted according to males and females.

Table : 25 Updating the database of the beneficiaries.

Variable	n	D%	U%	A%	m
Beneficiaries are enlisted according to categories they fall as outlined in the selection criteria.	16	93.8		6.3	1.31
Beneficiaries are enlisted according to the villages in which they reside.	16	6.3		93.8	4.63
Beneficiaries are enlisted according to males and females.	16	81.3		18.8	1.81
A list of the total number of beneficiaries as well as potential beneficiaries is available.	16	8.8	25.0	56.3	3.56
Only qualifying beneficiaries as outlined in the criteria are on the database.	16	25.0	37.5	62.5	3.44
The database is immediately updated when there is new information	16	31.3	43.8	25.1	3.00

From the findings it can be concluded that although the extension officers were aware of the selection criteria; the database of the beneficiaries of starter up packs was not enlisted according to the prescribed aspects highlighted on the form. The database at their disposal was just a list of beneficiaries and potential beneficiaries enlisted according to the villages in which they reside. This reflects that the proportionate

sampling of the beneficiaries in terms of sex as well as the criteria prescribed on the form was not considered i.e. some of the beneficiaries were put at an advantage.

The fact that slightly over half (56%) of the extension officers indicated that a list of the total number of the beneficiaries as well as the potential beneficiaries is available at their wards reflects that the database of close to half of the wards was not available. The uncertainty of the extension officers with regard to the fact that only qualifying beneficiaries as stipulated on the prescribed form are on the database reflects that the decision taken with regard to the inclusion of some of the beneficiaries on the database is questionable i.e. failure to update the database impacted negatively with regard to the decision taken on exclusion of some of the qualifying beneficiaries.

The fact that most of the extension officers are uncertain on whether the database is updated when there is new information or changes with regard to the status of the participants prior to distribution as well as that of only qualifying beneficiaries as outlined in the selection criteria are on the database implies that the status of the participants is heterogeneous. Standardized services for different groups already put some of the participants at an advantage. Supply of starter packs without verifying or proper reading of the participants as well as potential beneficiaries does not give room for the beneficiaries with literally no income to the possibility of special assistance in order to operate or run the household projects on the same level as their counterparts.

Since the beneficiaries were offloaded from the food parcel scheme the necessity of reviewing the list i.e. updating the database was imperative in order to ensure that

only qualifying beneficiaries and the potential beneficiaries fall within the selection criteria.

4.12 Distribution of starter up packs.

To measure the extent to which extension officers distributed starter up packs a 5 point Likert scale was used with positive statements that ranged from 1= Strongly Disagree to 5= Strongly Agree. Six statements were used for the extension officers to reflect the extent to which they Agree or disagree with the contents of the statements. The mean value ranged from 1.31 to 4.56.

Data analysis (table 26) indicates that more than three quarters of the extension officers agreed with two statements. They agreed that a high percentage of potential beneficiaries is still outstanding and that all the beneficiaries were supplied with equal number of the starter packs with the percentages 81% and 87.6% respectively.
They disagreed with four statements. All the extension officers disagreed that an egg cooperative is fully operational in each village. More than three quarters (81%) disagreed with the statements that they distributed packs to 25 households in each village and that of the quantity of the starter packs distributed per household is sufficient to sustain the projects. Close to 63% of the extension officers also disagreed that the total number of starter packs outlined in the policy for the financial year 2003-2004 were distributed.

Table 26: Distribution of starter packs

Variable	n	DA%	U%	A%	m
Distributed packs to 25 households in each village.	16	81.3	6.3	12.5	1.69
The total number of starter packs outlined in the policy for the financial year 2003-2004 were distributed.	16	62.6	25	12.6	2.38
A high percentage of potential beneficiaries is still outstanding.	16	12.6	6.3	81.3	4.19
An egg cooperative is fully operational in each village.	16	100			1.13
The quantity of the starter packs distributed per household is sufficient to sustain the projects.	16	81.3	12.5	6.3	1.63
All the beneficiaries were supplied with an equal number of starter up packs.	16	12.5	87.6		4.56

One of government expectations was for the extension officers to distribute the starter up packs to twenty five households in order to strengthen the local egg producers and eventually form cooperatives.

From the findings the distribution of starter up packs to twenty five households in each village in order to eventually form cooperatives as well as the total number of distributions for the financial year 2003-2004 was not met hence a high percentage of potential beneficiaries is still outstanding.

Although close to 88% of extension officers indicated that all the beneficiaries were supplied with equal number of starter up packs as outlined in the policy; about 81% indicated that the quantity of starter up packs is not sufficient to sustain the projects.

The fact that more than three quarters of the extension officers indicated that the quantity supplied is not sufficient to sustain the projects is questionable taking into account that the culture of home based egg production projects was embarked by the department of Agriculture as an intervention strategy and not to create dependency in any form. Failure to supply the beneficiaries with adequate starter up packs automatically impacted negatively on the sustainability of the projects.

4.13 Skills training

On the question of training of beneficiaries, more than three quarters (88%) of the extension officers indicated that beneficiaries of starter up packs were trained whereas 12% indicated that no training was done.

For those beneficiaries who received training it was done by four different service providers (table 27) such as technical staff (31.3%); extension officers (31.3%); ARC and extension officers (12.5%) Tompi Seleka and extension officers (12.5%)

From the results most of the training was done by both the technical staff and extension officers.

Table 27: Institutions that provided training for beneficiaries.

Variable	multiple response	%
No training	2	12.5
Technical staff	5	31.3
Extension officers	5	31.3
ARC and Extension officers	2	12.5
Tompi Seleka and extension officers	2	12.5
	16	100

One of government expectations was for the extension officers to ensure that beneficiaries are trained. The extent to which attempts were made with regard to addressing training needs of the beneficiaries of starter up packs was measured by using a 5 point Likert scale with 1= No Attempts, 2= Limited Attempts, 3= Some attempts, 4= Many attempts and 5= Fully Addressed. The mean value ranged from 2.06 to 3.06.

Data analysis (table 28) indicates that nearly 18% of the extension officers made no attempts in addressing the training needs of the beneficiaries of the starter packs in all the skills. Amongst the five skills, marketing is the one with the highest percentage whereby more than a quarter (31%) of the extension officers indicated that no attempts were made on addressing the training needs of the beneficiaries of the starter packs. Nearly 19% of the extension officers indicated that no attempts were made to address training needs of the beneficiaries of starter up packs in financial skills. About 13% of the extension officers indicated that no attempts were made to address training needs of the beneficiaries of starter up packs in skills such as technical, administration and management.

Table 28: Training needs of the beneficiaries of starter up packs.

Variable	n	NA%	LA%	SA%	MA%	FA%	m
technical skills	16	12.5	6.3	50.0	25	6.3	3.06
financial management skills	16	18.8	43.8	25.0	6.3	6.3	2.38
marketing skills	16	31.3	37.5	25	6.3		2.06
administration skills	16	12.5	31.3	43.8	12.5		2.56
management skills	16	12.5	43.8	43.8			2.31
Average =		**17.5**	**32.5**	**37.5**	**10.0**	**2.5**	

More than a quarter of the extension officers (33%) indicated that limited attempts were made on addressing the training needs of beneficiaries in all the skills. Of the five skills 6% of the extension officers indicated that technical skills were to a limited extent addressed. Almost close to half of the extension officers (44%) indicated that trainings needs of the beneficiaries of the starter up packs were to a limited extent addressed in skills such as management and financial. More than a quarter of the extension officers (38%) indicated that training needs of the beneficiaries of the starter up packs on marketing skills were to a limited extent addressed. More than a quarter (31%) of the extension officers indicated that training needs of the beneficiaries of the starter up packs on administration skills were to a limited extent addressed.

Nearly 38% of the extension officers indicated that some attempts were made in training of beneficiaries in all the skills. Half of the extension officers (50%) indicated some attempts were made with regard to addressing training needs on technical skills of the beneficiaries of starter up packs. A quarter (25%) of extension officers indicated that some attempts were made to address the training needs on both

marketing and financial skills of the beneficiaries of starter up packs. About 44% of extension officers indicated that some attempts were made to address the training needs on both administration and management skills of the beneficiaries of starter up packs.

About 10% of extension officers indicated that many attempts were made to address the training needs of the beneficiaries of starter up packs in four the skills.
Of the five skills, a quarter of the extension officers indicated that many attempts were made to address the training needs on technical skills of the beneficiaries of starter up packs. Six percent of extension officers indicated that many attempts were made to address the training needs on both marketing and financial skills of the beneficiaries of starter up packs. Close to thirteen percent of extension officers indicated that many attempts were made to address the training needs on administration skills of the beneficiaries of starter up packs. None of the extension officers indicated that many attempts were made to address the training needs of beneficiaries on management skills.

About 3% of extension officers indicated that the training needs of the beneficiaries of starter up packs on both technical and financial management skills were fully addressed. Of the five skills, 6% of the extension officers indicated that training needs on both technical and financial skills of the beneficiaries of starter up packs was fully addressed. None of the extension officers indicated that the training needs of the beneficiaries on three skills namely marketing, administration and management were fully addressed.

A mean value on technical and administration skills reflects that the extension officers were not certain with the extent to which training needs of the beneficiaries were attempted. The other skills such as financial, marketing and management have a mean value of less than 2.4. It can be concluded from the findings that not much was done in terms of addressing the necessary training needs of the beneficiaries of the starter up packs in order to equip them to produce, consume and sell the products.

To measure the extent to which skills acquired by beneficiaries of starter up packs are enabling them to run the household projects as well as the impact that they had on the effective and efficient implementation, a 5 point Likert scale with positive statements that ranged from 1= Limited Extent to 5= Very Great Extent was used. Two statements were used for the extension officers to indicate the extent to which the acquired skills impacted and enabled the beneficiaries of starter up packs to run and implement the household egg production projects.

From the data analysis (table 29) a mean of 2.56 reflects that the skills acquired by the beneficiaries of the starter up packs had to an average extent impacted positively on the effective and efficient implementation of the projects.
Slightly over half of the extension officers (56%) indicated that the skills acquired by the beneficiaries of starter up packs had to a limited extent enabled them to run household projects on their own.

Table 29: Skills acquired by beneficiaries of starter up packs

Variable.	n	LE%	AE%	GE%	m
Skills acquired had positive impact on the effective and efficient implementation of the projects.	16	43.8	50.0	6.3	2.56
Skills acquired enabled the beneficiaries of the starter up pack to run projects on their own.	16	56.3	43.8		2.19

From the findings it can be deduced that with only half of the extension officers indicating that skills acquired had to an average extent impacted positively on the effective and efficient implementation of the projects as well as slightly over half indicating that the skills acquired enabled the beneficiaries of the starter up packs to a limited extent to run the household egg production projects on their own in itself implies that an acknowledgement is made that not much was done in terms of the necessary preparations such as skills training prior to distributions of starter up packs and implementation of projects.

The extension officers responses with regard to the ability of beneficiaries on assembling of cages , unblocking the nipples, putting the feeding troughs correctly etc. was measured using a 5 point Likert scale with positive statements that ranged from 1= Strongly Disagree to 5= Strongly Agree. Three statements were used for the extension officers to reflect the extent to which they Agree or Disagree with the contents of the statements. The mean value range from 3.31 to 3.63.Data analysis (table 30) indicates that close to 69% extension officers agreed with the statement that

beneficiaries assembled cages, nipples and put feeding troughs correctly in cages on their own. However they were uncertain with statements on demonstrations on assembling of a cage, nipples, feeding troughs in each village and that of beneficiaries fastened sharp ends of the cage and unblocked nipples with mean values of 3.31 and 3.44 respectively.

Table 30: Demonstrations and competence of beneficiaries on using inputs

Variable	n	DA%	U%	A%	m
Demonstrated the assembling of a cage, unblocking of nipples and putting of feeding troughs correctly in the cage.	16	12.5	37.5	50	3.31
Beneficiaries assembled cages, nipples, and put feeding troughs correctly in cages on their own.	16	12.5	18.8	68.8	3.63
Beneficiaries fastened sharp ends of the cage and unblocked nipples.	16	8.8	25	56.3	3.44

The findings revealed that extension officers were uncertain on whether demonstrations of assembling cages, unblocking the nipples and putting feeding troughs correctly in cages were made in each village as well as whether beneficiaries were able to fasten sharp ends of the cages and unblock nipples on their own. However, extension officers agreed that beneficiaries were able to assemble cages, nipples and put feeding troughs correctly in cages irrespective of the uncertainty on demonstrations in each village.

4.14 Government expectations.

The extension officers responses with regard to the extent to which government expectations were met was measured using 5 point Likert scale with positive statements that ranged from 1= Limited Extent to 5= Very Great Extent. Five statements were used for the extension officers to indicate the extent to which beneficiaries of starter up packs met government expectations. The mean value range from 1.38 to 2.44.

Data analysis (table 31) indicates that all government expectations were to a limited extent met. Close to 69% of the extension officers indicated that beneficiaries had to a limited extent produced, consumed and sold the surplus. Three quarters (75%) indicated that beneficiaries had to a limited extent bought sufficient feed for layers. More than three quarter (81%) indicated that beneficiaries had to a limited extent purchased second batch of layers on their own. Fifty six percent indicated that beneficiaries had to a limited extent access to markets for selling. The majority (93%) indicated that a high percentage of beneficiaries had to a limited extent met government expectations.

Table 31: Meeting government expectations

Variable.	n	LE%	AE%	GE%	m
Produced, consumed and sold the surplus.	16	68.8	12.5	18.8	2.31
Bought sufficient feed for the layers.	16	75	18.8	6.3	1.81
Purchased second batch of layers on their own.	16	81.3	18.8		1.50
Had access to markets for selling.	16	56.3	18.8	25	2.44
A high percentage of beneficiaries met government expectations.	16	93.3	6.3		1.38

The findings reveal that beneficiaries of starter up packs had to limited extent met government expectations. The limited extent to which beneficiaries had access to markets for selling, purchased sufficient feed and second batch of layers on their own impacted negatively on production, consumption and selling of surplus hence a high percentage had to a limited extent met government expectations. Failure to purchase sufficient feed as well as the second batch of layers on their own is an indication that the projects were not sustained i.e. beneficiaries temporarily improved their food insecurity status.

4.15 Monitoring and support

The extension officers responses with regard to monitoring and support were measured using a 5 point Likert scale with positive statements that ranged from 1= Limited Extent to 5= Very Great Extent. Eight statements were used for the extension officers to indicate the extent to which monitoring of the process as well as support of

the beneficiaries was done. The mean value ranged between 1.50 and 3.38 with two statements less than 2.4 and six statements greater than 2.4 but less than 3.4.

Data analysis (table 32) indicates that monitoring and support was to a limited extent done as reflected in two statements. Close to 88% of the extension officers indicated that a monitoring tool at their disposal enabled them to a limited extent to determine the extent to which individual households are able to apply skills acquired on aspects related to technical, financial, management, administration and marketing. Close to 44% indicated that they reviewed strategies to a limited extent when necessary.

An indication was also made that monitoring and evaluation was to an average extent done with mean values of greater than 2.4 and less than 3.4 as reflected in six statements: had individual contacts with the beneficiaries of starter up packs; organized meetings for beneficiaries on layers: guided the beneficiaries of starter up packs with management of the projects; immediate feedback on concerns and problems identified by the beneficiaries of starter up packs; identified problems which hampered implementation process and reported them for immediate attention and continuous evaluation of the process at wards for effective and efficient management of the process.

Table 32: Monitoring and support

Variable.	n	LE%	AE%	GE%	m
Had individual contacts with all the beneficiaries.	16	31.3	18.8	50	3.38
A/an monitoring tool/instrument enables the officer to determine the extent to which individual households are able to apply skills acquired on aspects related to technical, financial, management, administration and markerting.	16	87.5	6.3	6.3	1.50
Organized meetings for beneficiaries on layers.	16	31.3	25	43.8	3.13
Guided the beneficiaries with management of the projects.	16	25	25	50	3.25
Immediate feedback on concerns and problems identified by the beneficiaries	16	37.5	25	37.5	2.94
Identified problems which hampered the Implementation process and reported them for immediate attention.	16	31.3	31.3	37.6	3.13
Continuous evaluation of the process at wards for effective and efficient management of the process.	16	37.5	43.8	18.8	2.63
Reviewed strategies where necessary.	16	50.0	43.8	6.3	2.31

Knipe et al (2002:149) argues that monitoring the projects helps to ensure that it is on schedule and is progressing according to plan.

From the findings it can be deduced that the fact that the majority of extension officers indicated that the tool at their disposal enabled them to a limited extent to determine the extent to which individual beneficiaries are able to apply skills acquired on aspects related to technical, financial, management, administration and marketing in itself impact negatively on the extent to which extension officers are able to detect any limitations on the implementation of the projects.

It is a rather worthwhile exercise to take more time at the preparatory stage or on planning prior to implementation of projects. An impromptu implementation of projects as a result of the alarming level of food insecurity prevailing at the area of study is also a worthwhile exercise, only if there are adequate resources i.e. both human and physical with appropriate tools to measure against the set government expectations or prescribed standards in order to achieve the objectives.

“Implementation is the most active phase of the process.” (Selener 1997: 85) Ongoing monitoring and feedback during implementation phase will enable all participants to determine whether the original expectations and the original implemented strategies continue to be valid.

Extension officers did however on an average extent had contacts with the beneficiaries and organized meetings whereby guidance on management of the projects was done. They also had on an average extent continuous evaluation of projects at wards level and identified problems which hampered process and reported them for immediate attention. However, very little was done in terms of reviewing of

strategies implemented on projects. Failure and or minimal review of strategies when necessary, impact negatively on the extent to which intended objectives are met.

Monitoring responds to the fact that development takes place under uncertainty. No matter how well planned and apparently rational, household projects are implemented at Makhuduthamaga District as a means to alleviate poverty under unforeseen circumstances, hence the need to review or revisit some strategies when the need arises. Revisitation or review of strategies is imperative to ensure that the level of performance is achieved as anticipated whereby both the extension officers and the beneficiaries output is consistent and predictable.

Evaluation is necessary to determine the impact of actions and to assess whether the overall objectives of the project have been fulfilled. Through a continuous evaluation of the projects at wards participants will have a way to assess the degree to which change has been accomplished, the effect the process has had on the well being of households, the extent to which participants have developed knowledge about the projects and the degree to which the process has contributed to the households improvement on their status of food security.

4.16 General information on projects.

With regard to whether egg production projects improved the livelihoods of the beneficiaries; the results reflect that close to 69% of the extension officers indicated that the livelihood of the beneficiaries was to a limited extent improved; a quarter (25%) of the extension officers indicated that livelihoods of beneficiaries were improved to an average extent whereas only very few (6%) indicated that it was improved to a great extent.

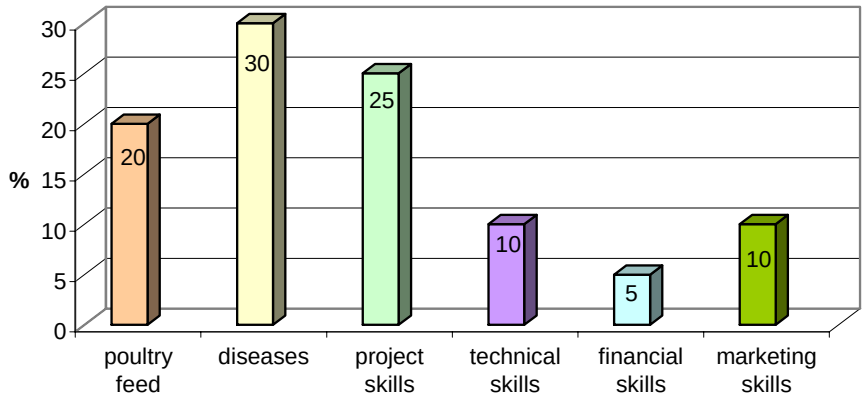
From the results much was not attained in terms of an improvement with regard to the livelihood of the beneficiaries. It can be concluded from the results that the capabilities of the households were to a limited extent enhanced or maintained through the implementation of household egg production projects for them to be able to cope with and recover from or cushion the shocks of food insecurity.

With regard to management of the process, the majority of the extension officers i.e. (about 88%) indicated that they fairly managed the process successfully while 12% indicated that their success on management of the process was very good.

With regard to whether problems were encountered during the process, close to 88% of the extension officers indicated that they did encounter problems during the process. Slightly over half of them (56%) indicated that they need additional training in order to cope with the problems that they encounter on their daily activities when managing the projects.

The extension officers identified six types (figure 8) of trainings needs that will help them to cope with the problems that they encounter during the process. The identified training needs are: poultry feed (20%); diseases (30%) project management skills (25%); technical skills (10%) financial skills (5%) and marketing skills (10%)

Figure 8. Training needs of extension officers



From the findings it can be concluded that the extension officers were identified and not brought on board in terms of being equipped with some of the essential skills prior to implementation of household egg production projects. The identification of the gaps which need to be closed prior to implementation of the household projects highlighted the plight they were faced with on management of the process. Some of the skills identified are the very skills that they were supposed to equip the beneficiaries of starter up packs with.

According to Paul (1983:100) selection and training are processes available to programme managers to match their staff to tasks.

The very mammoth task of ensuring that food insecure households are able to produce, consume and sell the surplus with the starter up packs supplied was not effectively and efficiently carried out since the human resource assigned with that task had wide gaps in terms of training which needed to be closed up prior to implementation in order to meet the requirements and challenges on households egg production projects.

With regard to the extent of success of the implementation of home based egg production projects at Makhuduthamaga sub-district, slightly over half of the extension officers (56%) indicated that the implementation of the home based egg production projects were to a limited extent successful while 44% indicated that they were to an average extent successful.

With regard to whether the home based egg production projects are considered a lasting solution to food security; three quarters (75%) of the extension officers indicated that they did not consider the home based egg production projects as a lasting solution to food security.

The fact that the majority of extension officers highlighted that home based egg production projects is not a lasting solution to food security at the area of study; raises crucial questions which remain unanswered such as whether inputs from the extension officers were invited; and if so, whether were they taken into account at plenary state or whether the inputs were informative enough to warrant decisions taken for the implementation of projects.

It can be concluded that proper reading of the environment or circumstances on which the projects were to be implemented was not done.

With regard to contacts that the extension officers had with individual beneficiaries of the starter up packs; data analysis (table 33) reveal that about 13% indicated that they never had any contact with the beneficiaries of starter up packs, more than a quarter (38%) indicated that they had contact with beneficiaries once per month, 12% indicated that they had it twice, 6% had it thrice, 19% indicated that they only

sampled and never had contact with all of them, 6% had it once per quarter whereas 6% had contacts four times per month.

According to Bessei (1990:56) irregular coverage of extension services was the main reason for failure of egg production projects. From the findings Makhuduthamaga district is no exception with regard to irregular coverage of extension services. When the total number of none contacts, sampled beneficiaries and that of once per quarter are added up together makes 43, 8%; i.e. close to 44% of the extension officers acknowledged that there was inadequate coverage of extension services on home based projects.

Table 33. Frequency of contacts.

Variable	**multiple response**	**%**
None	2	12.5
Once	5	31.2
Twice	2	12.5
Thrice	1	6.3
Other i. (contact with sampled beneficiaries)	4	25
ii. once a quarter	1	6.3
iii four times a month	1	6.3
	Total = 16	**100**

With regard to beneficiaries' interest on egg production projects responses reveal that 19% of the extension officers indicated that beneficiaries of starter up packs had no

interest in running egg production projects, a quarter of the extension officers (25%) indicated that beneficiaries of starter up packs are somewhat interested in running egg production projects, half of the extension officers (50%) indicated that beneficiaries of starter up packs are moderately interested in running egg production projects while 6% of the extension officers indicated that the beneficiaries of starter up packs are very interested in running the egg production projects.

Table 34: Beneficiaries interest on projects.

Variable	n	%
Not interested	3	18.8
Somewhat Interested	4	25
Moderately Interested	8	50
Interested	0	0
Very Interested	1	6.3
Total=	**16**	**100**

Despite the constraints experienced during the implementation of home based egg production projects, the extension officers acknowledged that mistakes were committed. Extension officers identified (table 35) mistakes that they committed which impacted negatively on the implementation of projects as: i. inadequate training of beneficiaries (45%), ii. Items of the starter up packs not distributed simultaneously (5%), iii. Supplying extremely poor households with inadequate starter up packs (15%) iv. Supplying uninterested beneficiaries with starter up packs (15%),

v. Unavailable for months attending courses leaving the beneficiaries of starter up packs unattended to (10%) and vi. Beneficiaries not informed in advance with regard to date of supply with starter up packs (10%).

Extension remains a significant means by which farmers receive information. Failure to adequately train beneficiaries is the same as depriving them the important information or a vehicle through which the projects can run up to the expected levels. Enabling the beneficiaries to take control of their development by equipping them with the necessary skills related to projects that are implemented at household level is a starting point for achieving change in their status of food insecurity.

Of the mistakes committed more than a quarter (45%) of the extension officers acknowledged that beneficiaries were inadequately trained to equip them with the necessary skills for the daily running of the home based projects. This implies that the beneficiaries in their wards started at a disadvantage with regard to efficient running of the projects.

Five percent of the extension officers indicated that items of the starter up packs were not distributed simultaneously. Simultaneous supply of items of starter up packs is a precondition for beneficiaries to perform efficiently. Failure to adhere to the precondition limited the beneficiaries to run the projects as expected.

Fifteen percent of the extension officers indicated that supplying extremely poor households with inadequate starter up packs was a mistake that they committed from the onset during distribution. Some of the households were regarded as extremely

poor to an extent that for them to be able to purchase feed after the four bags were finished, let alone the sustaining of projects was inconceivable.

Fifteen percent of the extension officers indicated that uninterested beneficiaries were supplied with starter up packs. Extension officers indicated the acceptance of the starter up packs by some of the beneficiaries was basically out of hunger and the fact that egg production projects were regarded as the easiest in terms of maintenance compared to other projects. The fact that some households are extremely poor does not automatically imply that they are interested in farming.

Ten percent of the extension officers indicated they were unavailable to support beneficiaries of starter up packs for four months attending courses. The support from the extension officers is very crucial taking into account that the majority of the beneficiaries were their first time to run home based projects. The absence of support for four months reflects the great extent to which understaffing undermines the very mammoth task of ensuring that food insecure households participate actively in moving out of poverty.

Ten percent of the extension officers indicated that beneficiaries were not informed in advance with regard to the date of supply with starter up packs. Although beneficiaries were properly consulted; notification in advance on the date of deliveries is important in order for them to make the necessary preparations related to the management of the projects.

Table 35: Mistakes committed by extension officers which impacted negatively on the implementation of egg production projects.

Variable	multiple response	%
Inadequate training of beneficiaries of starter up packs	9	45
Items of the starter up packs not distributed simultaneously.	1	5
Supplying extremely poor households with inadequate starter up packs.	3	15
Supplying uninterested beneficiaries with starter up packs.	3	15
Unavailable for months attending courses leaving the beneficiaries of starter up packs unattended to.	2	10
Beneficiaries not informed in advance with regard to date of supply with starter up packs.	2	10
Total =	**20**	**100**

Although the majority of the extension officers considered their success with regard to management of the home based egg production projects as fair; the majority indicated that problems were encountered during the process. Out of the problems encountered training needs with regard to some skills such as technical, project management, financial, marketing as well as poultry feed and diseases were identified. The fact that from the results less than ten percent of the beneficiaries were considered very interested and none on interested in running of egg production projects as well as the training gaps that the extension officers identified did impact negatively on the extent to which their livelihoods were improved.

The majority of extension officers considered the home based egg production projects not as a lasting solution to food security. This was exacerbated by the mistakes committed during the process, inadequate contacts with individual households as well as the gaps in training to equip them to manage the process efficiently.

CHAPTER FIVE

5.1 INTRODUCTION.

This chapter will deal with the following aspects: summary of the findings of the beneficiaries of the starter up packs and the extension officers, conclusions and the recommendations based on the findings.

5.2 Purpose and objectives of the study.

The aim and the objectives of the study were to determine the sustainability of the home based egg production projects as a strategy to reduce food insecurity.

Specific objectives were:

- describe the beneficiaries of the layers.
- identify the starter packs received by both the extension officers and the beneficiaries
- determine whether the beneficiaries were equipped with the necessary skills required for sustaining the projects.
- determine the extent to which both the beneficiaries of starter up packs and extension officers met government expectations related to layers.
- determine the relationship between the level of education and government expectations.
- determine the relationship between skills training and government expectations.
- identify constraints to egg production as perceived by both extension officers and the beneficiaries of starter up packs.
- determine the extent to which constraints were addressed.
- formulate recommendations for improved egg production

During the implementation of home based egg production projects beneficiaries of starter up packs were expected by the department of Agriculture to do the following:

- proper management of the projects with the help and support of extension officers
- produce, store, consume and selling of surplus as individual households or at anticipated formed cooperatives to be initiated by the department
- use money accrued from the products for the household needs and most important to pay for the layers' feed and for the buying of the next batch of layers in order to sustain the process.
- assemble cages and nipples, unblock nipples and put feeding troughs correctly in the cage with the assistance of the extension officers.

Extension officers were expected by the Department of Agriculture to do the following:

- update the database of the beneficiaries
- distribute starter up packs
- train beneficiaries with the necessary skills such as technical, administrative, management, financial and marketing
- monitor and manage the process as well as giving the necessary support to beneficiaries
- strengthen the producers local organisation i.e. ensuring that in each village a total number of twenty five households receive layers in order to eventually form a cooperative.

- assist the beneficiaries on assembling of cages and nipples, unblocking the nipples when necessary as well as putting feeding troughs correctly in the cage.

5.3 Summary

Household egg production projects remains a low cost, important and effective way to significantly reduce poverty and enhance food security particularly in poor areas and for low income populations. Food availability and poverty alleviation are goals that require full attention and cooperation from all interested parties.

The department of Agriculture had expectations which were to be met by both the extension officers and the beneficiaries. Both were given different questionnaires to respond to.

Findings from the demographic characteristics revealed that the total number of household members is 959 in144 households. The households' density is divided into three categories namely 2-5, 6-7 and 8+. There is no much difference in densities between the categories of households members. Slightly over half of the household members are females.

The level of education of most of the heads of households is low. The majority of the beneficiaries fall within the category of none-grade 9 with the least within category grade 10-12.

The majority of adults fall in the age group 19-29 whereas those of children fall in the age group 7-12.

The majority of the beneficiaries are married and affiliated to Z.C.C church with the least in traditional churches.

Both the extension officers and the beneficiaries concur that the quantity of the starter up packs distributed was not adequate to sustain the household egg production projects.

Training is an important channel for spreading information among beneficiaries. It is a difficult and time-consuming task although it is essential if beneficiaries are to run egg production projects up to the expected standards.

Unfortunately the findings revealed that beneficiaries at the area of study had inadequate or no training prior to the implementation of the home based egg production projects.

Limited attempts were made to meet training needs of the beneficiaries on technical skills. Beneficiaries agreed on most of the aspects on technical skills irrespective of the limited coverage by the extension officers in terms of addressing technical training needs. The majority of beneficiaries were uncertain with regard to whether layers were fed with the appropriate laying mash. Those who failed indicated that they fed layers with mealie meal as a result of being unable to purchase feed throughout the cycle. This is not surprising since one of the government expectations which they were to meet was to be able to purchase feed throughout the cycle which the majority of the beneficiaries failed to meet. Feed was also one of the identified constrains which impacted negatively on egg production.

Beneficiaries were unable to take into account the fact that sufficient and proper feeding of layers plays a very crucial role in management and egg production. Even if

only a few of the officers did manage to address the technical training needs of the beneficiaries, the performance on most of the necessary aspects related to technical skills is acceptable except feed. This is not surprising since in many rural areas Makhuduthamaga being no exception, backyard poultry was and is still practised.

Failure to keep records contributed to the inability beneficiaries to budget for the feed, next batch of layers as well as the amount to be spent for household consumables. Failure to keep the necessary records which enable them to detect whether there is a decrease and or an increase in production handicapped the beneficiaries to run the projects effectively and efficiently. One of the constraints which the extension officers mentioned was the inability of the beneficiaries to purchase feed. The fact that beneficiaries failed to bank money accrued from sales contributed to shortage of cash to purchase feed and household consumables.

Training needs of the beneficiaries were not met as indicated by one third of the extension officers. Due to limited training beneficiaries were unable to apply important marketing aspects such as classification of eggs, pricing, packaging, contracts as well as the supply and demand consistency.

Administration in any project is important. For the heads of households to ensure that projects run efficiently proper administration is essential. Although much was not done in terms of addressing the administrative training needs of the beneficiaries, their performance was up to the accepted level. This is not surprising since identification of problems related to production can be easily detected as well as sharing of activities such as cleaning, feeding, egg collection, storage and selling of eggs taking into

account the exposure that they had of rural backyard poultry raising. Meetings on layers were attended because in every village there is a group leader who calls meetings for the beneficiaries to communicate their problems.

On the aspects related to management of egg production projects, beneficiaries were able to keep cages in the house, ensured that cages are slanting slowly so the eggs easily roll forward and kept the layers under shelter away from the sun, rain and cold. However, beneficiaries were unable to order new batch of layers four months before the old ones are a year old and selling of cull hens after the new ones started to lay eggs. Their inability to good timing in terms of selling of culled hens as well as ordering of new batch of layers, disabled them to sustain the egg production projects. Both the extension officers and the beneficiaries mentioned that they fairly managed projects.

Beneficiaries considered the impact of the level of support that they had from the extension officers as limited in terms for effective and efficient running of household projects. The identified problems encountered in daily activities of running the household projects were to a limited extent immediately attended to when reported to the extension officers.

Slightly half of the beneficiaries considered the help that they had as fair.

Close to 50% of the beneficiaries visited by the extension officers as confirmed by extension officers themselves. However these visits were limited to one visit per month. Close to 44% of the extension officers had less than one visit a month due to transport problems.

The implementation of egg production projects contributed to improvement of the livelihoods of the beneficiaries to a limited extent, a fact also pointed out by extension officers.

Beneficiaries prefer egg production as future projects based on low labour requirements and their ability to alleviate hunger/poverty.

Mistakes committed by both the extension officers and the beneficiaries of starter up packs contributed to the limitations on the sustainability of egg production projects.

The department of Agriculture embarked on home based egg production projects to assist and avoid food insecure households who were receiving food parcels to relapse into a condition of distress and once again require food parcels. However, contrary to their anticipation already there are beneficiaries who have relapsed irrespective of the starter up packs at their disposal.

During the survey beneficiaries at Manganeng village were not available at their households. They were all found queuing at the tribal office for food parcels i.e. they reverted back to the food parcel scheme. The question is how many beneficiaries to date have reverted back to food parcel scheme or are receiving both.

Despite the constraints, mistakes committed by both participants, home based egg production is a worthwhile endeavour for the majority of the rural poor who are vulnerable and do not have the necessary mechanism to absorb the shocks of any unforeseen disaster that might impact negatively on their livelihoods.

The findings revealed that the sustainability of the home based egg production projects has been impacted negatively by the following:

- diseases,
- mortality
- inadequate feed
- unavailability feed
- inadequate monitoring and support
- lack of or inadequate skills training of both extension officers and beneficiaries prior to and during implementation of home based egg projects.
- none or inadequate coverage of extension services
- survey not done prior to implementation to check the feasibility with regard to implementation of projects.
- Inconsistent recordings
- Inappropriate housing
- Theft and predation
- inadequate human resources
- inadequate starter up packs
- failure to check and verify important aspects on the contract from the suppliers such as beak trimming, age etc. given to officers when receiving the layers.

Despite the above mentioned factors that impacted negatively on egg production projects there are some successes which emanated from the implementation of the projects. The majority of beneficiaries did temporarily produce, consume, and sell the surplus with the first four bags of laying mash supplied. The majority of households temporarily moved of out of poverty through own employment and income

generation. The fact that they are producing, consuming and selling surplus irrespective of constraints encountered implies that there is room for improvement.

Very few beneficiaries were able to sustain the projects. The sustainability of the projects by few beneficiaries is attributed to enough feed for the layers, group collection of monies whereby they contribute a certain amount each from the profits which is used for purchasing feed and transport.

5.4 Conclusions.

The beneficiaries were described in terms of the categories they fall as outlined in the policy.

For the households to benefit from the starter up packs they were to qualify in one or more of the following criteria as prescribed in the policy:

- households with a monthly income of R200.00 or less
- orphaned children
- households headed by individual infected/affected by HIV/AIDS
- households headed by individual with disability
- child headed households.
- households that are victims of natural disasters.

The majority of the beneficiaries fall within the category of households with monthly income. R200.00 or less. Extremely few of them fall within the category of households headed by individual with HIV/AIDS.

Slightly over a quarter do not fall under the prescribed selection criteria and benefit

more than twice in government initiatives to alleviate poverty whereas some households are not covered at all.

None of the households fall within the category of child headed households and that of households which are victims of disasters. This is not surprising since the majority of extension officers indicated that a list of beneficiaries as well as potential beneficiaries were not classified in terms of the prescribed criteria hence the absence of proportional selection.

It can be concluded that the majority of the beneficiaries met the criteria to receive the starter up packs.

Both the beneficiaries and extension officers considered the quantity of starter up packs inadequate to sustain the projects.

Training of the beneficiaries was inadequate for efficient household egg production. The majority of beneficiaries' training needs were not fully addressed in all the skills. Inadequate or absence of training invariably led to inefficient production.

Although there are some indications that government expectations were not met, the majority of beneficiaries managed to assemble a cage, nipples and put feeding troughs correctly in the cage. The majority extension officers indicated that government expectations were to a limited extent met by a high percentage of beneficiaries. There was no relationship between skills such as financial, management administration and government expectations. However there was a significant relationship between skills such as technical, marketing as well support from the extension officers and the extent to which government expectations were met. This

means that variations in government expectations were mostly attributed to skills such as technical and marketing as well as the support from the extension officers.

The majority of the beneficiaries of the beneficiaries had a low level of education. There was no significant relationship between the following skills: technical, management, financial, administration and government expectations. However there was a significant relationship between marketing and the levels of education. This means that the higher the level of education the more chances are for the beneficiaries to understand and apply the marketing skills.

Although the extension officers were uncertain with regard to the update of the database when there is new information, the results of the responses reflect that the selection of some of the beneficiaries were based on old information since some do receive more than two grants as well as being in other projects such as vegetable projects which automatically disqualify them if their income is over R200.00.

A list of the total number of beneficiaries as well as potential beneficiaries was compiled according to the villages in which they reside. Officers are uncertain with regard to whether the list compiled entails only the qualifying beneficiaries as well as the updating of the database when there is new information.

Beneficiaries are not enlisted according to the categories they fall as outlined in the selection criteria and also not differentiated in terms of females and males.

Extension officers did distribute starter up packs. The distribution was not according to the quota outlined in the policy. A quota prescribed was that of twenty five beneficiaries in each village. The aim of distributing starter up packs to twenty five beneficiaries was to strengthen the local producers ‘organisation in order to eventually form cooperatives.

Officers did monitor and support the beneficiaries but the monitoring tools that they used did not enable them to assess the efficiency of individual households with regard to the running the projects in terms of following or application of the necessary skills for maximum egg production.

Both the extension officers and the beneficiaries were constrained by various factors for them to efficiently implement egg production projects.

Only three constraints were addressed i.e. insufficient transport, inadequate starter pack and one aspect concerning the feed i.e. soft shelled eggs.
Most of the extension officers were later supplied with subsidized vehicles in order to alleviate problems associated with insufficient transport.
The new beneficiaries of starter up packs are now supplied with thirty six layers and eight bags of laying mash. The quality of eggs i.e. soft shelled eggs was improved by mixing the feed with shells of used eggs.

5.5 Recommendations.

These recommendations are made on findings of the study and the researcher's observations and own ideas. They are made to focus on the following: beneficiaries of starter up packs, the department of Agriculture and the extension officers.

To the beneficiaries of starter up packs.

To ensure that layers are well managed for disease control.

Layers should be given sufficient and proper feed for maximum egg production.

To ensure that consistent recording of expenditure on prescribed schedule is done in order to detect if there are problem with egg production in some layers.

To the department of Agriculture.

Ensure that the selected officers who are to implement projects are adequately trained for them to adequately discharge the tasks that are given to them.

Technical skills need to be considered at both farmer and extension levels i.e. training needs be identified and attended to.

Ensure that the resources i.e. both human and physical are adequate to run the projects because good management of the projects alone cannot be a substitute for resources.

Appropriate indicators or monitoring tools based on the set standards are to be discussed with the implementers to enable them to measure the project activities in order to detect deviations or changes which warrant modifications of strategies during the implementation process.

Appropriate teaching materials on layers designed to target beneficiaries should be developed using local languages.

Tested strategies for effective improvements should be selectively implemented i.e. lessons are to be learned from past and continuing implemented projects that are running efficiently in context of the environment.

Recommendations focussing on project implementation on past experiences should be considered in advance to ensure the success and sustainability of projects.

To the extension officers

Constraints limiting production should be investigated and the necessary strategies be formulated and implemented.

Performance on- households egg production projects should be monitored and the necessary support be given when necessary.

A monitoring tool which encompasses the performance indicators as prescribed in the policy is a necessity as it will enable the officers to quickly detect the flaws and remedy them.

Any gap between the planned strategy and implementation should be corrected as a matter of urgency.

When receiving the layers from the suppliers it is very crucial that inspection is made on the layers versus the contract with information on feeding programmes, type of vaccinations, beak trimming, age and strain, date, age etc. of layers at delivery.

Updating of the database prior to implementation of projects is necessary because data which is not updated can impact negatively on any decision making.

Ensure that training prior to and during implementation of projects is done for the beneficiaries to perform up to the expected standards.

Adequate support and coverage of extension services on egg production is crucial in order to communicate and solve problems encountered by beneficiaries with regard to the daily running of the projects.

Survey is crucial for the adequate relevant analysis of beneficiaries and identification of their needs.

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APPENDICES

Appeal

To: participants of home-based egg production projects.

My name is Monyela Daisy, attached to the department of Education in Capricorn District. I am a Masters Degree student at the University of the North doing Agricultural extension. As part of the requirements to complete the degree, I am expected to conduct research in any topic in Agricultural development.

You are therefore requested to take active, faithful and loyal part in this study in order to assist with the contributions to government's administrative and functional strategies on the implementation of projects.

Feel free, as your opinions, feelings and experiences my help at revisiting some of the strategies that are currently implemented in order to benefit both the Department and the community.

The results of the study will be made available in the University of the North library, Department of Agriculture i.e. both Provincial and at Districts.

Thank you for your time and contributions.

Yours in service.

…….

Monyela M.T.D

Questionnaire: Extension Officers

Respondent number:

Section A.

Selection criteria

1. Are you aware of the selection criteria?

2.Yes	
1.No	

2. From your observations indicate the extent to which the selection criteria of the beneficiaries were adhered to: Respond by circling the answer that best fits your response. 5.Very Great Extent = VGE, 4. Great Extent = GE, 3.Average Extent = AE, 2.Some Extent = SE, 1.Limited extent = LE.

5. VGE 4.GE 3.AE 2.SE 1.LE.

Updating of the database

3. To what extent do you agree with the statements concerning the updating of the database below? Respond by circling the answer that best fits your response. 5.Strongly agree = SA, 4.Agree = A, 3.Uncertain = U, 2.Disagree = D, 1.Strongly Disagree = SD.

a. beneficiaries are enlisted according to categories they fall as outlined in the selection criteria	5.SA	4.A	3.U	2.D	1. SD
b. beneficiaries are enlisted according the villages in which they reside	5.SA	4.A	3.U	2.D	1. SD
c. beneficiaries are enlisted according to males and females	5.SA	4.A	3.U	2.D	1. SD
d. a list of the total number of beneficiaries as well as potential beneficiaries is available.	5.SA	4.A	3.U	2.D	1. SD
e. Only qualifying beneficiaries as outlined in the criteria are on the database.	5.SA	4.A	3.U	2.D	1. SD
f. the database is immediately updated when there is new information	5.SA	4.A	3.U	2.D	1. SD

Distribution of starter packs:

4. Indicate the extent to which you agree with the statements below on distribution of starter packs: Respond by circling the answer that best fits your response. 5.Strongly agree = SA, 4.Agree = A, 3.Uncertain = U, 2.Disagree = D, 1.Strongly Disagree = SD

a. distributed packs to 25 households in each village.	5.SA	4.A	3.U	2.D	1. SD
b. the total number of starter packs outlined in the policy for the financial year 2003-2004 were distributed	5.SA	4.A	3.U	2.D	1. SD
c. A high percentage of potential beneficiaries is still outstanding	5.SA	4.A	3.U	2.D	1. SD
d. an egg cooperative is fully operational in each	5.SA	4.A	3.U	2.D	1. SD

village.

e. the quantity of the starter packs distributed per household is sufficient to sustain the projects — 5.SA 4.A 3.U 2.D 1. SD

f. all the beneficiaries were supplied with an equal number of starter up packs. — 5.SA 4.A 3.U 2.D 1. SD

Section B: Skills training

1. Did the beneficiaries receive any training?

2.Yes	
1. No	

If Yes; answer question 2 to 4

2. Who offered the training?
……..

3. Indicate the extent to which training needs on skills below were addressed: Respond by circling the answer that best fits your response. 5. Fully addressed = FA. 4. Many attempts = MA. 3. Some attempts = SA. 2. Limited attempts = LA. 1.No attempts = NA.

a. technical skills — 5.FA 4.MA 3.SA 2.LA 1.NA

b. financial management skills — 5.FA 4.MA 3.SA 2.LA 1.NA

c. marketing skills — 5.FA 4.MA 3.SA 2.LA 1.NA

d. administration skills — 5.FA 4.MA 3.SA 2.LA 1.NA

e. management skills — 5.FA 4.MA 3.SA 2.LA 1.NA

4. Indicate the extent to which you agree with the statement below with regard to skills acquired by the beneficiaries of ASP's. Respond by circling the answer that best fits your response. 5. Very Great Extent = VGE, 4. Great Extent = GE, 3.Average Extent = AE, 2.Some Extent = SE , 1.Limited extent = LE.

a. skills acquired had positive impact on the effective and efficient implementation of the projects — 5. VGE 4.GE 3.AE 2.SE 1.LE.

b. skills acquired enabled the beneficiaries to run. projects on their own — 5. VGE 4.GE 3.AE 2.SE 1.LE

5. To what extent do you agree with the following statements on assembling of cages, nipples, feeding troughs, etc: Respond by circling the answer that best fits your response. 5.Strongly agree = SA, 4.Agree = A, 3.Uncertain = U, 2.Disagree = D, 1.Strongly Disagree = SD.

a. demonstrated the assembling of a cage, nipples, — 5.SA 4.A 3.U 2.D 1. SD

feeding troughs in each village

b. beneficiaries assembled cages, nipples, and put feeding troughs correctly in the cage on their own 5.SA 4.A 3.U 2.D 1. SD

c. beneficiaries fastened sharp ends of the cage and unblocked nipples. 5.SA 4.A 3.U 2.D 1. SD

Section C: Government expectations

1. From the statements below indicate the extent to which beneficiaries met government expectation: Respond by circling the answer that best fits your response. 5.Very Great Extent = VGE, 4. Great Extent = GE, 3.Average Extent = AE, 2.Some Extent = SE, 1.Limited extent = LE.

a. produced, consumed and sold the surplus 5. VGE 4.GE 3.AE 2.SE 1.LE

b. bought sufficient feed for the layers 5. VGE 4.GE 3.AE 2.SE 1.LE

c. purchased second batch of layers on their own 5. VGE 4.GE 3.AE 2.SE 1.LE

d. had access to markets for selling 5. VGE 4.GE 3.AE 2.SE 1.LE.

e. a high percentage of beneficiaries met government expectations 5. VGE 4.GE 3.AE 2.SE 1.LE

Section D Monitoring and support

1. In the statements below indicate the extent to which monitoring of the process as well as support of the beneficiaries was done: Respond by circling the answer that best fits your response. 5.Very Great Extent = VGE, 4. Great Extent = GE, 3.Average Extent = AE, 2.Some Extent = SE, 1.Limited extent = LE.

a. had individual contacts with all the beneficiaries 5. VGE 4.GE 3.AE 2.SE 1.LE

b. a monitoring tool/instrument enabled the officer to determine the extent to which individual households are able to apply skills acquired on aspects related to technical, financial, management, administration and marketing 5. VGE 4.GE 3.AE 2.SE 1.LE

c. organized meetings for beneficiaries on layers 5. VGE 4.GE 3.AE 2.SE 1.LE

d. guided the beneficiaries with management of the projects 5. VGE 4.GE 3.AE 2.SE 1.LE

e. immediate feedback on concerns and problems identified by the beneficiaries 5. VGE 4.GE 3.AE 2.SE 1.LE

f. identified problems which hampered the implementation process and reported them for immediate attention — 5. VGE 4.GE 3.AE 2.SE 1.LE

g. continuous evaluation of the process at wards for effective and efficient management of the process. — 5. VGE 4.GE 3.AE 2.SE 1.LE.

h. revisited strategies where necessary. — 5. VGE 4.GE 3.AE 2.SE 1.LE

Section E General information on implementation of egg production projects

1. Indicate the extent to which Home based egg production projects improved the livelihoods of the beneficiaries? 5.Very Great Extent = VGE, 4. Great Extent = GE, 3.Average Extent = AE, 2.Some Extent = SE, 1.Limited extent = LE.

5. VGE 4.GE 3.AE 2.SE 1.LE.

2. How do you evaluate the success of your work on management of the process?
5. excellent. 4. very good. 3. fair. 4. poor. 1. very poor

3. Did you encounter any problems during the process?

2.Yes	
1.No	

4.. Do you find that you need additional training for you to cope with the problems you encounter during the process?

2.Yes	
1.No	

If yes; answer question 5.

5. What kind of poultry training will help you to cope with the problems you encounter during the process?
……
…….

6. Indicate the extent of success of the implementation of the Home based egg production projects at Makhuduthamaga District. . 5.Very Great Extent = VGE, 4. Great Extent = GE, 3.Average Extent = AE, 2.Some Extent = SE , 1.Limited extent = LE.

5. VGE 4.GE 3.AE 2.SE 1.LE

7. Do you consider the home based egg production projects a lasting solution to food security at Makhuduthamaga?

1.Yes	
2.No	

8. Indicate the frequency of contacts that you had with individual beneficiaries per month
5. once 4. twice 3. thrice 2. none 1. other (specify)…….

9. How do you rate the beneficiaries' interest in running the projects?
5. Very interested 4.interested 3. Moderately interested 2.somewhat interested
1. Not interested.

10. What are the mistakes that you have committed that impacted negatively on the implementation of the project?

……
……. (2)

****Thank you for participating……Thank you for participating****

Home based egg production projects Questionnaire:

Beneficiaries of Agricultural Starter up Packs

Village:……

Respondent / Head of household) number:……..

Section A: Demographic characteristics.

1. Sex of the head of household: Mark with an X in the appropriate box.

1. male	
2. female	

2. Marital status:

1.married	
2.Single	
3.widowed	
4.Divorced	

3: Religion:…….

4. Level of education: mark with an X in appropriate column

1.none	
2.Grade 1 - 3	
3.Grade 4 - 6	
4.Grade 7 - 9	
5. Grade 10 -12	
6.Diploma/degree	

5. Age of household members: Mark with an x on the appropriate box.
Adults:

Age	Male	female
60+		
50 – 59		
40 – 49		
30 – 39		
19 – 29		
Total =		

Children:

Age	Male	female
13-18		
7-12		
0-6		
Total=		

6. Total number of household members……..

Section B: Selection criteria and Starter packs

1. Under which criteria did you qualify for the starter up pack? Mark the appropriate box.

Criteria	
1. Households with a monthly expenditure of R200.00 or less	
2. Orphaned children	
3. households headed by individual infected and/or affected by HIV/AIDS	
4. Households headed by people with disabilities	
5.Child headed households	
6. Households that are victims of natural or other disasters.	
7. Other(specify)……	

2. Which of the following starter packs did you receive? Mark with an x on the appropriate box the items you received for starting up the project.

Starter up packs	
18 layers of 20 weeks old	
Nipples	
Feeding trays	
4 bags of laying mash	
Cage	

3. Why did you choose this particular starter pack?
……
……2

4. Indicate the extent to which you agree with the following statements with regard to starter packs:
Respond by circling the answer that best fits your response. 5.Strongly agree = SA, 4.Agree = A, 3.Uncertain = U, 2.Disagree = D, 1.Strongly Disagree = SD.

a. the quantity of the starter pack is enough for the household to sustain the project. 5.SA 4.A 3.U 2.D 1. SD

b. proper consultation was made prior to the supply of starter packs of the project 5.SA 4.A 3.U 2.D 1. SD

Section C. Skills Training

1. To what extent do you agree with the statements below on skills training? Respond by circling the answer that best fits your response. 5.Strongly agree = SA, 4.Agree = A, 3.Uncertain = U, 2.Disagree = D, 1.Strongly Disagree = SD.

1.**Technical training**

a. kept feed for the layers always dry. 5. SA 4.A 3.U 2.D 1. SD

b. feeding troughs had feed at all times 5.SA 4.A 3.U 2.D 1. SD

c. fed layers only with laying mash 5.SA 4.A 3.U 2.D 1. SD

d. bottles had cool fresh water at all times 5.SA 4.A 3.U 2.D 1. SD

e. cleaned floors at least once a week 5.SA 4.A 3.U 2.D 1. SD

f. exposed layers to a maximum of 16hrs 5.SA 4.A 3.U 2.D 1. SD

of light everyday.

2. Marketing

a. Advertised the selling of eggs 5.SA 4.A 3.U 2.D 1. SD

b. Advertised the selling of cull hens. 5.SA 4.A 3.U 2.D 1. SD

c. put eggs of same size together. 5.SA 4.A 3.U 2.D 1. SD

d. priced the eggs according to their sizes. 5.SA 4.A 3.U 2.D 1. SD

e. Packaged eggs for the market. 5.SA 4.A 3.U 2.D 1. SD

f. had a contract with the market 5.SA 4.A 3.U 2.D 1. SD

g. had supply and sale consistency 5.SA 4.A 3.U 2.D 1. SD

2.1 Circle the number that indicates market for your eggs

1.local shop 2.school/crèche 3.town 4.local village 5. never sold
6. other (Specify)……..

2.2. Circle the number that indicates market for your cull hens

1.local shop 2.school/crèche 3.town 4.local village 5. never sold
6. other (Specify)……..

3. Financial management.

a. kept expenditure and income records of the money accrued from sales. 5.SA 4.A 3.U 2.D 1. SD

b. money accrued from sales banked 5.SA 4.A 3.U 2.D 1. SD

c. kept records of feed expenditures 5.SA 4.A 3.U 2.D 1. SD

4. Management of the project

a. kept the cage in the house 5.SA 4.A 3.U 2.D 1. SD

b. kept the cage slanted forward so that the eggs can roll down the slope gently into the tray 5.SA 4.A 3.U 2.D 1. SD

c. ordered new layers four months before the old ones are a year old. 5.SA 4.A 3.U 2.D 1. SD

d. sold cull hens after the second batch started to lay eggs. 5.SA 4.A 3.U 2.D 1. SD

e. kept the layers under shelter away from the sun, rain and cold. 5.SA 4.A 3.U 2.D 1. SD

5. Administration

a. identified problems on production and notified the extension officers.	5.SA 4.A 3.U 2.D 1. SD
b. attended meetings of layers	5.SA 4.A 3.U 2.D 1. SD
c. have a schedule whereby members of the household have a chance to record, feed, clean, provide water, collect eggs, package and sell eggs.	5.SA 4.A 3.U 2.D 1. SD

Section D. Support from extension officer

1. To what extent do you agree with the following statements concerning the support that you received from the extension officers? Respond by circling the answer that best fits your response. 5.Very Great Extent = VGE, 4.Great Extent = GE, 3.Average Extent = AE, 2. Some Extent = SE , 1.Limited extent = LE.

a. training received is adequate to run household projects efficiently.	5. VGE. 4. GE. 3.AE. 2.SE, 1.LE.
b. the level of support from the extension officers impacted positively on the effective and efficient running of the project.	5. VGE. 4. GE. 3.AE. 2.SE, 1.LE.
c. immediate attention to problems on implementation of the projects	5. VGE. 4. GE. 3.AE. 2.SE, 1.LE

2. How do you rate the help that you get from the extension officers.
5. very good 4. good 3. uncertain 2. fair 1. poor

3. Describe the frequency of visits that you had from the officers.
5. very often. 4. often. 3. Seldom 2. Sometimes. 1. none

4. Indicate the extent to which you agree with the statements concerning the information on implementation of the projects below. Respond by circling the answer that best fits your response. 5.Strongly agree = SA, 4.Agree = A, 3.Uncertain = U, 2.Disagree = D, 1.Strongly Disagree = SD.

a. received documents with information on layers.	5.SA 4.A 3.U 2.D 1. SD
b. read and understood the contents	5.SA 4.A 3.U 2.D 1. SD
c. followed the requirements from the documents stipulated for egg production.	5.SA 4.A 3.U 2.D 1. SD

5. Is there a local egg cooperative in your village? If the answer is yes answer question 6-9

1. Yes	
2. No	

6. Are you a member?

1.Yes	
2. No	

If yes; how many are you in number?.....

7. Did you ever have meetings?

1. Yes	
2. No	

8. Do you benefit from the local egg cooperative?

1. Yes	
2. No	

9. If yes; in what way?

.....

Section E. Government expectations:

1. Indicate the extent to which you agree with the statements below with regard to the extent to which government expectation were met. Respond by circling the answer that best fits your response. 5. Strongly agree = SA 4.Agree = A, 3.Uncertain = U, 2. Disagree = D, 1.Strongly Disagree = SD.

a. produced, stored, consumed and sold the surplus. 5.SA 4.A 3.U 2.D 1. SD

b. purchased enough household consumables 5.SA 4.A 3.U 2.D 1. SD

c. purchased feed throughout the egg laying cycle. 5.SA 4.A 3.U 2.D 1. SD

d. purchased new batch of layers 5.SA 4.A 3.U 2.D 1. SD

e. able to assemble a cage, nipples and put feeding troughs correctly in a cage 5.SA 4.A 3.U 2.D 1. SD

Section F. General information on egg production projects and future preferences.

1. Indicate the price of:
   1.1 one egg……
   1.2 culled hen…….
   1.3 one bag of feed……

2. Indicate the total amount accrued from:
   a. sales of eggs…….
   b. cull hens ……

3. Indicate the total amount spent for purchasing
   a. household consumables …….
   b. feed ……
   c. next batch of layers……..

4. Indicate the total number of hens slaughtered for household consumption and/or used for social functions……

5. Did you experience any mortality of layers (excluding the ones that are slaughtered and/or used for social functions?)

1. Yes	
2. No	

If yes; answer question 6.1 and 6.2

6.1 Indicate the number died.....

6.2. Give reasons for mortality
……
……(2)

7. Did you ever participate in any poultry project before the households' projects that are presently implemented?

1. yes	
2. no	

8. Indicate your future preference on projects by means of a cross(x) using the scale of 1 to 4 (with 1= most preferred to 4 = least preferred

	1	2	3	4
a. milk production	[ ]	[ ]	[ ]	[ ]
b. egg production	[ ]	[ ]	[ ]	[ ]
c. fish production	[ ]	[ ]	[ ]	[ ]
d. vegetable production	[ ]	[ ]	[ ]	[ ]

9. To what extent did the egg production project improve your livelihood?
Respond by circling the answer that best fits your response. 5. Very Great Extent = VGE, 4.Great Extent = GE, 3.Average Extent = AE, 2.Some Extent = SE, 1.Limited extent = LE.

5. VGE 4. GE 3.AE 2.SE 1.LE.

10. To what extent do you consider the egg production projects helpful with regard to access to adequate food? Respond by circling the answer that best fits your response.

5. very helpful 4. helpful 3. moderate helpful 2. somewhat helpful 1.not at all helpful

11. How do you rate your success with regard to effective and efficient management of egg production projects

5. very good 4. good 3. uncertain 2. fair 1. poor

12. What are the mistakes that you realised you have committed that affected production?
…….
……. (2)

****Thank you for participating……Thank you for participating****