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POULTRY FARMING: LESSENING POVERTY IN RURAL AREAS

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ABSTRACT

The main aim of this study was to try and establish if chicken farming could be utilised for alleviation of rural unemployment and poverty. The study examined the skills and knowledge through education that would be required for successful chicken farming. The population for the study were all experts in poultry industry. This population included established and emerging chicken farmers, government officials who are involved in chicken farming projects in rural areas, veterinarians specialising in poultry, and any other individuals with expert knowledge in chicken farming. The sample comprised of six individuals that included two large commercials farmers, one small holder farmer, two officials from the DTI and one wholesale meat supplier. A semi-structured, open-ended interview questionnaire was designed and used for interviewing purposes. Interviews permit triangulation of information obtained from other sources and thus increase the integrity of study findings. The findings of the study suggested that: Chicken farming could be used for alleviation of rural unemployment and poverty; Success of such projects depended on farmers receiving technical and financial support. hands-on training was considered the best form of training.

Keywords: Poultry farming, unemployment, rural extension.

1. INTRODUCTION

Rural people are disproportionately burdened by the effects of unemployment and poverty. Poverty limits the ability of the rural community to invest in the development of their own communities. World leaders, through the United Nations, have made poverty alleviation a top priority, as evidenced by its designation as the first of the Millennium Development Goals (United Nations (a), 2010:1). Agriculture-related activities are known to provide approximately 70% of employment in the rural areas of developing countries (The World Bank, 2013). Poverty is nonetheless still mostly concentrated in rural areas and this will in all probability remain the case for a few more decades to come (United Nations Water Assessment Programme, 2014:62).

Sustainable poultry farming requires knowledge, but these are relatively uncomplicated skills that can be taught to rural individuals who possess little or no formal education. The majority of rural individuals have some knowledge of rearing poultry on an extensive scale because it is common practice for most rural people to keep a few poultry running around in their backyard. The intention is to get rural farmers rearing poultry on a semi-intensive scale so that they are able to earn some money and also supplement their dietary requirements, ultimately elevating their living standards.

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2. LITERATURE STUDY

2.1. Poverty in South Africa

The occurrence of poverty in rural South Africa is high. Training, education and job creation are required as a means of elevating the living standards of rural individuals. Unemployment is high in South Africa and government, trade unionists, business and industry all agree that job creation is of paramount importance for the country (Craven, 2010:1; Ramaphosa, 2012:2; Vavi, 2012:1).

Aside from its importance as a source of food and a substantial contributor to the national Gross Domestic Product (GDP), the poultry industry contributes to job creation both in the formal and informal sectors. More than 80% of its establishment consists of Small-, Medium- and Micro-scale Enterprises (SMMEs).

2.2. The socio-economic importance of family poultry farming

It is possible to eradicate malnutrition in rural areas by encouraging rural people to keep a few egg-laying hens for their households. A dozen hens kept under cover in a battery of cages are capable of producing 11 eggs a day. A family can easily manage such a unit. This would supplement the necessary dietary requirements of the family and at the same time the extra eggs can be sold to provide desperately needed additional income (Gueye, 2009:115). Rural poultry is defined as a flock of not more than 100 birds, maybe of improved or unimproved breed and reared in either extensive or intensive farming systems (Sonaiya & Swan, 2004:1).

2.3. Sustainability of poultry farming

The FAO (1995:1) defines sustainable development as "the management and conservation of the natural resource base and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations". Intensive poultry farming has done extensively well in South Africa. The poultry industry is currently the largest segment of agriculture. The level of consumption of poultry meat in South Africa suggests that this industry is viable. According to Erasmus (2011:1), 60% of all protein consumed in South Africa in 2011 was from poultry.

Sustainability of poultry farming in South Africa is affected by volatility in profitability, which is inherent in the broiler industry. Biological factors, such as poultry diseases, and lengthened turnaround times in the production chain, coupled with rises in the costs of feed, fuel, electricity and labour, directly impact production costs. In the event that such increases in production costs happen together with a downswing in the economy and reduced demand for product, profit margins become severely depressed. The broiler industry has had to deal with such a situation over the past four years (SAPA, 2011 / 2012:1).

2.4. Why poultry farming?

Erasmus (2011:11) and SAPA (2012:10) indicate several reasons why poultry farming would be considered a swift way of attempting to alleviate rural poverty:

- It is a type of farming of which most rural people will have some knowledge.

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- A considerably short time is required from the time of inception of project to the time when a farmer is able to sell some produce. Broilers can be sold for meat after six weeks if they are reared under optimal conditions.
- A relatively small amount of capital is required for starting out compared with the rearing of cattle, for instance. As few as 50 poultry can significantly change the livelihood of a poor rural dweller.
- No hired labour is required for such an endeavour. Family labour is usually sufficient.
- According to Erasmus (2011:11), 1.7 kg of grain-based feed is required to produce 1 kg of poultry since poultry do not eat a lot of food. In contrast, 5.5 kg of feed is required to produce 1 kg of beef.
- Poultry production continues to show a growing trend locally and internationally, outperforming other protein sources, such as beef and pork.

2.5. Particular problems confronting rural poultry farmers

The market share occupied by poultry imports could be viewed as a stumbling block, particularly for emerging farmers who are attempting to enter the market in an environment where local producer prices are higher than those for overseas producers. The DAFF (2012:29) discussed a broader set of barriers to participation by the emerging sector in South Africa and these include:

- The transaction costs for emerging farmers are much higher than those of their large, developed counterparts in the commercial sector.
- Day-old chicks are not readily available because large producers are given preference.
- Long distances between suppliers and farms could result in higher fatalities if vehicles are not adequately equipped for that purpose.
- The lack of abattoirs to market and/or sell dressed poultry in formal markets is a concern.
- The lack of barcoding facilities and proper freezing facilities for storage of dressed poultry birds is a problem. Most retail companies look for barcoded products for traceability of product.

Other constraints that affect the industry include ow-priced imports, exchange rate fluctuations, high chick costs, inadequate sanitary standards, higher input costs (especially feed prices), lack of finance (as small-scale farmers do not meet the requirements for loans set by the commercial banks), lack of marketing skills and technical skills, lack of mentorship, significant growth in quantities of poultry imports into South Africa

3. RESEARCH QUESTION AND OBJECTIVE

Could poultry farming and knowledge of poultry farming alleviate poverty in rural areas?
The objective was to investigate the possibility of building the capacity of rural individuals to progress beyond poverty by taking up poultry farming. If rural people were trained and given financial support by the government and/or non-governmental organisations (NGOs), would they be able to be self-reliant, improve their communities and build a better future for themselves and succeeding generations?

3.1. Research method

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The nature of the research question and problem statement suggests a case study. Yin (2009:98) suggested five components of effective case study research design, namely research questions, propositions or purpose of study, unit analysis, logic that links data to purpose of study, and the criteria for interpreting findings. These components were used and formed important tools in the research design of the case study presented.

The most appropriate questions to ask were questions such as 'how', 'what' and 'where'. Participants were asked questions such as how rural poultry farmers could be trained to run successful poultry farming projects, where the rural people would obtain funding to start their projects, and the challenges they would face during operation. The second component of a case study is to define clearly the purpose for study. The purpose for this study was to try and establish whether poultry farming could be utilised as a tool for creating employment and alleviating rural poverty.

The third component of the case study research is the unit of analysis. The unit of analysis is the area of focus that a case study analyses. An appropriate unit of analysis occurs when primary research is precisely defined. The fourth segment of a case study research design is to link data to the purpose of study. This link is established following the data collection phase, as themes emerge. The final component of a case study design is the criteria for interpreting findings.

Primary data were collected through in-depth face-to-face interviews, observations and data provided by some of the interviewees. The research commenced with an analysis of academic literature and multimedia articles on poultry farming. The second part of the research involved in-depth face-to-face interviewing of experts in the poultry industry chosen through purposive sampling (Zikmund, 2009:382).

3.2. Research population and sample

The target population or the total populace of individuals possessing at least a common characteristic from which inferences would be made (Cooper & Schindler, 2010:179) were individuals who were linked to the poultry farming industry.

This study made use of non-probability purposive sampling. Purposive sampling occurs where the selection of the sample of individuals to be interviewed is based on the researcher's "judgement about some appropriate characteristic required of the sample members" (Zikmund, 2009:54). In this case, the sample members were selected based on their expertise in the poultry industry as evidenced either by being a successful poultry farm or by virtue of the positions they hold in relation to the industry. Such positions included employment in organisations such as Southern African Poultry Association (SAPA), Department of Trade and Industry (DTI) and Department of Agriculture, Fisheries and Forestry (DAFF).

For data analysis, the data were transcribed verbatim and analysed using qualitative content analysis. Inductive reasoning was used by the researcher where themes and categories emerged from the data. Qualitative content analysis did not, however, rule out deductive reasoning (Patton, 2002:39).

Credibility of the study was insured by adopting a well-recognised research method, that is, in-depth interviews where interviewees were given the opportunity to explain, qualify and expand on their answers to the questions asked. Interviewees were encouraged to speak

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freely, and they were also given the option of remaining anonymous or withdrawing from the study at any time (Shenton, 2004:67).

4. FINDINGS

The purpose is to present the findings stemming from analysis of the information obtained from the interviews. The study unfolds along the lines of the questions that were posed to the respondents and these interviews served as the tool for collecting data.

- Topic 1 examines how an individual, where relevant, became involved in poultry farming and attempts to establish where the funding for starting the project came from.
- Topic 2 examines how poultry farming can be used to alleviate rural poverty and assesses whether there are any merits in focusing on rural people.

4.1. Topic 1: Motivation for becoming involved in poultry farming

Six individuals were interviewed for the purpose of this study. Respondent 'A' is a commercial farmer situated in the Limpopo Province. His farm produces free range eggs and poultry, and his business has grown to such an extent that his produce is currently sold locally and in neighbouring African countries. At the time of the interview, Respondent 'A' had 32 employees and he trained interns from colleges and universities. Respondent 'A' also offered free training for emerging farmers. Respondent 'B' is an even larger commercial farmer who primarily produces eggs. Respondent 'B' had approximately 400 employees at the time of the interview. He runs a high-technology farm where a large number of poultry houses are computerised. Respondent 'C' is a meat wholesaler. Although respondent 'C' is not directly involved in poultry farming, she has extensive knowledge of the meat market in South Africa and was able to provide great insight into supply and demand in the meat market. Respondent 'D' and 'E' are employees of the Department of Trade and Industry (DTI). The respondents are involved in the "Incentive Scheme" projects that assist rural individuals who venture into poultry farming. Respondent 'F' is a small-scale farmer based in the North West Province. He runs a small family business that was started primarily to augment family income.

All the respondents who were interviewed, including those from the DTI, who spoke on behalf of hundreds of emerging farmers, confirmed that they had started poultry farming for business purposes. However, respondent 'F' declared that he donated 10% of his profits to charity. In some instances, poultry farming was started to augment an existing income but for the DTI farmers, poultry farming would be the only source of income. Some farmers were motivated to start poultry farming because they had previous experience in the industry, having been brought up in families where their parents were also poultry farmers. Others had received training or simply had a passion for the business. The former was the case for the majority of rural farmers sponsored by the DTI, as narrated by the two DTI officials. The DTI saw rearing poultry as a means of creating employment for rural people and generating an income that could assist with improvement of their food and nutrition, and the payment of their children's school fees. The more established farmers - respondents 'A' and 'B' - viewed poultry farming as a diversification of their existing farming businesses, having been involved previously in cattle farming. Respondent 'B' viewed poultry farming as "tackling a different challenge".

Apart from the farmers who are sponsored by the DTI, the farming projects were started as family businesses, with as little as ZAR300 in some instances (for example by respondent 'A'

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20 years ago) but had grown to the point where they were supplying poultry products nationwide. Respondent 'A' exports produce not only to neighbouring countries like Zimbabwe, Zambia and Mozambique, but as far afield as Tanzania. He stated, however, that "penetrating the European markets was extremely difficult" because "the European Union (EU) can dump products in Africa but Africa cannot dump products in the EU".

The farmers who were sponsored by the DTI received grants of up to ZAR350,000 to start projects under the Cooperative Incentive Scheme (CIS), whereby DTI promotes poultry projects initiated by any registered cooperative formed by a minimum of five South African citizens. To qualify for sponsorship under this scheme, the cooperative is required only to draft and submit a comprehensive business plan, and to maintain a business bank account. The DTI refrains from giving cooperatives cash, for fear of misappropriation of funds. Instead, farmers submit quotes and the DTI procures the necessary equipment on their behalf. Generous support is given to the farmers to ensure that their projects are successful. The farmers carry no financial liability since they are not required to repay the grant to DTI should their business fail. The officials at the DTI therefore award grants only to individuals who appear passionate and committed to poultry farming, and they monitor the farmers' progress in an effort to minimise the failure rate.

In some instances, the Department of Agriculture, Forest and Fisheries (DAFF: 2010) provides the cooperatives with "the structure", that is, fowl runs capable of housing up to 5,000 poultry. After the structure is in place, the DTI takes over, providing the farmers with day-old chicks, vaccinations, feed and the support required for the poultry projects to succeed. It was interesting to note that one official from the DTI stated that cooperatives are allowed to solicit additional funding from other sources, such as NGOs, but the other official said they were not allowed to. After seeking clarification on the matter, it emerged that farmers were allowed to seek additional funding from other sources but only after the inception of their businesses.

4.2. Topic 2: The use of poultry farming for poverty alleviation

The respondents all began their poultry projects as business ventures, with flock sizes ranging from 100 birds to as many as 400,000 birds in the case of the larger commercial farmers. Most of the cooperatives sponsored by the DTI are making a profit. They have managed to improve their standard of living substantially. These farmers are not only providing poultry meat and eggs to the rural people but to townships as well, particularly over weekends, during functions and funerals. Employment has been created. Three to four years after the commencement of some projects, DTI inspectors have returned to find that some of the cooperatives have up to 10 employees, aside from family members.

Respondent 'C', who is a meat wholesaler, was of the opinion that rural poultry farming was a viable concept, "provided sufficient help is given to the farmers, especially at the start of their project". Project managers would have to be appointed to educate and assist the farmers on how to run the businesses. This would involve knowledge of the value chain of the project. She added that such assistance would be required for at least a year after the inception of the project, after which the trained individuals could then take over and run the project. If the project succeeds, the individuals could then decide whether to stay together as a cooperative or go their separate ways.

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Respondent 'A' felt that rural people must organise themselves into cooperatives where approximately 20 individuals, each owning 1,000 birds, have a central packing station. Products would be sold under a single brand. This would help with traceability of produce and the final volume of produce would warrant setting up, for example, a slaughter house for the cooperative. A record would be kept of how much had been brought in by individual farmers, and at the end of each month members would be paid accordingly. This would be a cooperative kind of setup, but the packing centre would have a single manager.

Another option suggested by respondent 'A' was for rural people to start with approximately 200 poultry. They would consume some of the eggs themselves and the rest could be sold locally to other villagers.

With rural people in mind, respondent 'A' has developed a fowl run that can easily accommodate 100 poultry. It consists of two half drums for nesting, two heaters and a water system (container). The poultry housing can be stationed in one position for a month, after which it is moved directly opposite its original position. Now richly fertilised by poultry droppings, the 18 square metre patch of land over which the poultry housing previously stood can be used for vegetable cultivation. The fowl run can be moved after every month for six months and then returned to its original site. Solar panels can be installed on the roof of the poultry housing to provide lighting and hot water (from a solar geyser) for the household. The roof of the fowl run is constructed slanting at an angle so that light rain and the dew that forms on the roof overnight can irrigate the vegetable garden behind it. After six months, a family can have six fertile vegetable beds from which any produce that has not been consumed by the family can be sold in the village for some extra money. A farmer with 100 poultry can produce five and a half dozen eggs daily. They can sell four dozen eggs and keep the rest for the family to aid their nutrition. Respondent 'A' estimated that a rural family could earn between ZAR 2,800 and ZAR3,500 monthly from the sale of eggs and vegetables. Very little water and labour would be required to support this rate of production. The family would require half an hour in the morning before dispersing for work (if applicable) and half an hour in the evening before retiring for the day. "This is what rural Africa needs, from Cape to Cairo. It will work like a dream", he added. The fowl run he designed can be made with light-weight aluminium panels so that it can be assembled where required. The assembling of the fowl houses could be a skills development project for rural youth. They can later get employment assembling the fowl houses for the villagers. Workshops can be held in villages to demonstrate to prospective farmers how to assemble the units, install the geysers, connect water systems and have the units fully operational. Such activities can be sponsored by government and NGOs or the World Food Organisation. Respondent 'A' strongly believes that "we must stop giving people fish; we must rather teach them how to fish".

Respondent 'C' mentioned that the merits of focusing on rural people would be aiding the economy, improving the livelihoods of rural people and reducing crime, because people would be employed. She felt that if rural people had an income where they were situated, this would result in fewer rural people migrating to the cities because the main reason rural people moved to cities was to seek employment. She added that poultry farming could definitely upgrade rural living standards "but farming is a skill that has to be learnt and individuals have to be encouraged to get involved in poultry farming. This could only be done by having success stories in the villages, where individuals could see others prospering through poultry farming". The misconception that farming is for poor rural individuals could only be changed by success stories. "Seeing is believing", she stated. She suggested that the initial flock sizes for rural farmers should be about 100 per family because, in her opinion,

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the amount of time and energy required to tend to 50 poultry was the same as that for 100 poultry. Until the farmers had learned the trade, the flock size should not become so large that they would need to hire extra labour in addition to family members. Extra labour would need to be paid for and the farmers might not be in a position to afford this. Respondents 'B' and 'E' however felt that 100 poultry were not enough, and the reasons were twofold. Firstly, vaccines are expensive, and the smallest package contains 1,000 doses. If one has only 100 poultry, 900 doses would be wasted since once opened the vaccine has to be used within a day. Secondly, the profit margins in poultry farming are low and natural mortality rates are high, particularly if one is attempting to raise day-old chicks. However, if the numbers increase, one can benefit from economies of scale. Respondent 'F', who is a small-scale farmer, said he was doing well with only 100 poultry per six-week cycle because his mortality rate was very low. He cautioned that farmers should not increase their output before they obtained reliable access to markets.

5. CONCLUSIONS OF RESULTANTS FROM THE RESEARCH

The research conclusions are based on the findings resultant of the research presented.

5.1. Topic 1: Motivation for becoming involved in poultry farming

The first motivation for becoming involved in poultry farming was creation of, or augmentation of income.
For five of the respondents ('A', 'B', 'D' 'E' and 'F'), the incentive was creation of, or augmentation of income. The two respondents from DTI ('D' and 'E') additionally viewed poultry farming as a way of creating employment on a large scale in rural areas. Two respondents ('A' and 'B') viewed poultry as diversification of their existing cattle farming businesses. Respondent 'C', who is not a poultry farmer, was asked to give her opinion of what she thought would motivate rural people to become involved in poultry farming. She responded by saying that rural famers could take up poultry farming to improve their diets and standard of living. Although expressed in different ways, all respondents stated that if poultry farming could be implemented in rural areas, it could result in the betterment of rural people's lives.

Sonaiya & Swan (2004:1) stated that rearing of poultry could potentially make a significant contribution to household food security in impoverished rural people's livelihoods. They also put forward that incomes could be enhanced and diversified. Healthy nutritious food could be found in people's backyards. Similar sentiments were shared by the FAO (2002:2) who recognised the potential that poultry farming contributed to poverty alleviation. The findings of Sonaiya & Swan (2004:1) and the FAO (2002:2) are confirmed in this study.

Another motivation for poultry faming was creation of employment.
Although two of the farmers ('A' and 'B') viewed poultry farming as a way of creating an income for themselves, they have grown into large companies, creating employment for other individuals in the process. The DTI officials have set up 'structures' for a number of cooperatives and they have returned to visit these individuals after a period of about three years to find that a single cooperative is employing up to 10 people. These are some of the success stories that have been reported that confirm that poultry farming can be used in rural areas, not only to alleviate poverty in terms of supplementing nutrition, but to create employment as well.

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This confirms the findings of Kanbur (2005:1) who suggested that targeting poor people where they were situated and focusing on economic activities on which their livelihoods depended would be a winning strategy for creating employment in rural areas. He further stated that it was important to recognise that agriculture, in its various forms, was at the heart of the livelihood of rural people. Hence agriculture was the most likely vehicle for the alleviation of rural unemployment. Respondent 'A' started his business 20 years ago with only ZAR300. He now employs 32 individuals and sells his produce nationally and internationally. One could argue that respondent 'A' is not an uneducated rural farmer, but the success stories reported by respondents 'D' and 'E' from the DTI confirm the above statements made by Kanbur (2005:1).

5.2. Topic 2: The use of poultry farming for poverty alleviation

Poultry farming is a source of income and creates employment.
All projects, for the individuals interviewed, were started for business purposes with flock sizes ranging from 100 poultry up to as many as 400 000 birds for commercial farmers. An average of 70% of the cooperatives sponsored by the DTI and the DoA are not only making a profit but some now employing as many as 10 workers. These farmers are not only providing poultry meat and eggs to the rural people, but they have found alternative markets to supermarkets by selling their produce to townships, catering for functions and funerals.

Respondent 'A' suggested another source of employment for rural people would be the assembly of poultry houses he designed with rural people in mind. He suggested that a number of youths could be trained to assemble the fowl runs. These youths could then be given the task of going from village to village assembling these fowl runs. Kanbur (2005:1), Sonaiya & Swan (2004:1) and the FAO (2002:2) agree that poultry farming can alleviate rural poverty by creation of income, however small.

Poultry farming in rural areas will allow people to improve their diets.
All the respondents agreed with the aforementioned statement. The manure from the poultry can be used to grow vegetables which would be a further nutritional benefit for the people. Better diets translate into better health for the people and better health for the people translates into savings for the government in medical care services. Gueye (2009:115) and Sonaiya & Swan (2004:1) both stated that poultry farming was a definite way of improving the diets of impoverished rural people.

Most of the poor people in South Africa live in rural areas. Although urban population increased from 40% in 2000 and is expected to increase to 57% in 2034, poverty is still, however, mostly concentrated in rural areas and this will in all probability remain the case for a few more decades to come (World Urbanisation Prospects, 2004:3).

All six respondents agreed that many benefits can be derived from introducing poultry farming to rural people.
Such merits would include aiding the economy, improving the livelihoods of rural people by improving their diets, creating employment and reducing crime because people would be employed.

Gueye (2009:115) suggests that it could be possible to eradicate malnutrition in rural areas by encouraging rural people to keep a few egg-laying hens for their households. A dozen hens kept under cover in a battery of cages are capable of producing 11 eggs a day. This would

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supplement the essential dietary requirements of the family. At the same time, the extra eggs could be sold to provide desperately needed additional income.

The potential benefits of rural poultry farming are further emphasised by the Bangladesh example, where only between five and seven chickens are kept per household but still managing to contribute between 20 and 30% of the total animal supply in the country.

There was no agreement amongst the respondents concerning the number of birds that should be reared per cycle.
Three suggestions were made concerning the number of poultry that should be reared per cycle by farmers who are starting out. Respondents 'C' and 'F' suggested starting with as few as 100 birds and expanding as access to markets improved. One hundred poultry would also be easy for a family to manage without requiring extra help. Extra help would need to be remunerated and the family might not be in a position to afford this. This suggestion agrees with what was suggested by authors such as Sonaiya and Swan (2004:1) who defined family poultry such as 100 birds or fewer.

Three respondents felt that the number of birds should be larger (at least a thousand) because vaccinations were sold per thousand doses and the vaccinations had to be used within a day once opened. Vaccinations are expensive and throwing away 900 doses would be a huge waste of money. This concern could be addressed by requesting suppliers to package a smaller number of doses or synchronising vaccinations with neighbouring farmers so that no vaccinations would be wasted. The three respondents mentioned that, in the event of high mortality rates, the farmers who started with only 100 birds would have virtually none left. The other benefit of having large numbers of chicks is economies of scale because the profit margins in poultry farming are very small.

One respondent out of the six felt that both systems were feasible depending on where the farmers were situated. Farmers who are situated in rural areas without a close supply of clean water and no electricity should probably consider rearing small numbers of poultry. Poultry need a constant supply of clean water and warmth in cold weather. If the poultry numbers are large, it may become difficult to supply them with enough clean water and keep them warm in cold weather. Warming up large fowl runs using coal heaters may not be easy and accidents with gas heaters have been reported by two respondents. In locations where there is a good supply of clean water and electricity, larger numbers of poultry could be reared.

In cases where the DTI or the DoA provided "the structure", there were no concerns regarding adequate or proper housing for the birds. The housing provided in such instances was designed by experts who knew the exact requirements per given number of birds. In instances where between 100 and 200 birds are to be reared, the fowl run designed by respondent 'A' is recommended, since it was also designed by an expert in poultry farming, with rural people in mind.

The piece of land where the fowl run was previously stationed can be used for growing vegetables. The respondent estimated that a family could earn a minimum income of ZAR2800 from rearing 100 poultry and from the vegetables that can be grown from the fertilised pieces of land. If rural families could generate this level of income per month, this could substantially improve their living standards.

6. RECOMMENDATIONS

A good correlation was thus confirmed between the aforementioned research findings and applicable guidelines found in literature, related to motivation towards, and possible poverty alleviation through poultry farming.

Offer rural farmers sufficient training before the commencement of their projects and offer continued support as projects progress.

The success of projects is hinged on farmers having sufficient knowledge of poultry farming in order for them to be able to deal with problems as they arise. The challenges the farmers would face would be varied in nature. These would include health care, technical and business management of the business, and access to markets. Hands-on training is recommended as the best form of training and such training could be offered by established and experienced farmers in the industry. Since poultry farming projects will be focusing on rural people with education levels that are generally low, observing demonstrations and practising what would have been demonstrated would be the best way to learn. The government (DTI, DoA or DAFF) could assign agricultural officers who travel from one village to another, offering help with day to day problems. Such agricultural officers would be able to offer sound advice to individuals because if they see problems in one area, they may be able to prevent issues such as health disorders before they spread.

The second option could be an arrangement of vertical integration that would be made in the form of a partnership or a business unit being set up in the urban environment. The urban facility would be set up to market poultry cuts to butcheries, hoteliers and individuals whilst live birds may be sold at designated places.

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INFORMATION NEEDS OF COMMUNAL CATTLE FARMERS IN CONSERVATION AND TRANSFRONTIER AREAS: REPUBLIC OF SOUTH AFRICA

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ABSTRACT

The study investigated information needs of communal cattle farmers located on conservation and transfrontier areas in the Northern part of KwaZulu-Natal Province, South Africa. For triangulation of findings, key informant interviews, focus group discussions and 241 structured questionnaires were used. During focus group discussions, key findings showed that cattle management and handling as well as veterinary information are the most needed information by farmers from both study sites. Odds ratio estimates showed that older males (odds ratios 1.906 and 1.488) and literate farmers with tertiary education required more information on cattle management (odds ratio 5.878). Both study areas had common information needs on veterinary matters, conservation of cattle feeds, cattle management and handling as well as stock theft and depredation. This excludes alien invasive species which were reported to be a challenge by dominating communal grazing lands, hence reducing forage on conservation areas. A comprehensive action plan addressing information needs for cattle farmers located in the conservation and transfrontier areas by relevant stakeholders is crucial to minimise substantial economic losses caused by cattle diseases.

Keywords: Information needs, conservation, transfrontier cattle farmers

1. INTRODUCTION

Southern Africa has abundant and diverse wildlife, which are mostly concentrated on protected wildlife areas (Jori et al., 2011). African buffalo and lions are natural reservoirs of pathogens which transmit diseases to livestock and lead to economic losses (Jori et al. 2011; Jori & Etter, 2016). In many African countries, the majority of communal cattle farmers live at the borders of protected areas (Songorwa, 1999).

Livestock production, particularly cattle, is the most important element of rural development in these drier areas with poor arable land. In addition, most of these protected areas are found in remote locations with limited access to adequate health facilities for livestock leading to persistence of preventable diseases. These people occupy territory approximately 2.87 million km^2 in extent, 75% of which is arid or semi-arid (Thornton, 2002). A key constraint to successful integration of wildlife conservation and livestock production systems in southern Africa concerns the abundance of wildlife (Bengis et al., 2004). The separation of livestock from wildlife to create zones free from diseases that constrain livestock production and

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