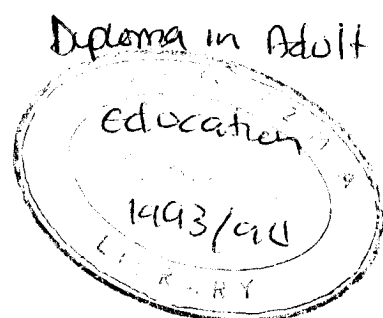


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THE UNIVERSITY OF ZAMBIA



DEPARTMENT FOR CENTRE FOR CONTINUING EDUCATION

THE EFFECTIVENESS OF THE EDUCATIONAL CAMPAIGN ON THE
GROWING OF FOOD LEGUMES IN MUMBWA

A RESEARCH REPORT SUBMITTED IN

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DEDICATION

To my beloved daughter Geneva Akamananyambo Wamundila and her mother Ruthie Wamundila.

ACKNOWLEDGEMENTS

I would like to thank all the farmers interviewed at Nsempe and Mukulaikwa food legume projects, and not forgetting the Extension Officer in Charge of Mukulaikwa Farm Training Centre Mr. Mwambwa who provided transport for me. I also thank the District Agricultural Officer of Mumbwa and his Assistant for their cooperation in mobilising the Extension Officers and the Steering Committee of food legume projects in Mumbwa.

The greatest thankful remarks go to Ms. Emmy Mbozi who has been my advisor.

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CHAPTER 1.1

INTRODUCTION

The overall agriculture in Zambia is dominated by small-scale farmers who constitute over 90% of the farming population. Crop production is the main agricultural output even though livestock, wildlife, fisheries and forestry are also important. Zambia's agro-ecology permits a wide variety of farming systems and crops. In spite of this, little was done in the past to diversify subsidies and other unproductivity policies contributed to the worsening of agricultural productivity. Maize production was over emphasized at the expenses of productivity and sustainability of the farming systems. Extension activities didn't adequately cater for all growers especially for the female farmers. Lack of an integrated approach to crop development to research results not fully being used by the farmers.

Therefore during the past decade the key indicators of social development such as health nutrition, education and others have worsened in Zambia causing hardship for the majority people. As at both the household and national level. Traditional starchy foods cannot practically provide sufficient calories and protein. High protein foods are not available at affordable prices and sufficient quantities to the majority of the population throughout the year.

The above conditions have made Zambia to be one of the recipient countries of the Third World in getting assistance in terms of funds, food and in the field of health. Most of the outrageous help comes from the United Nations specialized agencies like Food and Agricultural Organisation. due to the massive assistance from this specialized agency, the interest and initiative of establishing

itself in Zambia so that it provides various and necessary skills and knowledge through the training of rural small scale farmers in crop agriculture, marketing, processing and storage especially in food legumes. In addition, food and Agricultural Organisation ensures adequate food, creates employment and generates income through farming processing and distribution sectors and contributes to overall national development. Therefore, Food and Agricultural Organisation promises developments that provides long term solutions to the fundamental problems of poverty and hunger.

This Food and Agricultural Organisation has a project of food legumes that is running in Mumbwa at Makulaikwa Farm Institute and Snempe where the small-scale farmers learn more about sustainable agriculture and practical skills. The Organisation also encourages an integrated approach, with environmental, social and economic considerations, for example, in Mumbwa it has formulated a development project where particular combinations of crops can improve agricultural productivity, provide a source of fuel wood for local villagers, improve soil fertility and reduce the impact of erosion.

The Food and Agricultural Organisation in Mumbwa conducts the mobile training courses held in the villages and demonstration plopts as part of the food legume project strategy to reach more small-scale farmers. The project also work with Government Agencies, N.G.O.s and the interested co-operatives and the private sectors. Moreover gender sensitive personnel are involved in developing the projects extension activities ensuring that equal attention is paid to the needs of female and male farmers. The project activities are directed by a steering committee whose membership corners from

various relevant Government Agencies, N.G.O.s interested private sector and gender and development group co-operative with other groups involved in similar work are also designed to enhance the efficiency of the work.

1.2 STATEMENT OF THE PROBLEM

It is common knowlege that, in the past Zambia's main staple food has been maize. Therefore, the production of maize was over emphasized at the expenses of other crops like the legumes despite ago-ecology of Zambia which permits a wide variety of arming systems and crops. Nonetheless, little was done in the past to diversify. As aresult, Zambia found herself facing a critical shortage of food supply and food security at both the household and national level. This resulted Zambia, especially amongst the small-scale farmers into poverty, hunger and malnutrition. the above conditions forced Zambia to be one of the receiptent countries in getting assistance from the food and Agricultural Organisation. this led to the establishment of Food and Agricultural Organisation in Zambia, so that, it provides required skills and know-ledge in production of the food legumes so as to prevent hunger and malnutrition among the peasantry. Currently this Food Organisation is running a lot of food legume projects across the country. Some of these food legume projects are in Mumbwa where the small-scale farmers learn how to go about the food legume production.

The Mumbwa food legume project started in January, 1993 by the food and Agricultural Organisation through

The National Food and Nutrition Commission which invited the different personalities from the Ministries of Agriculture and Health. Some of them came from the N.G.O.s, Co-operatives and in Mumbwa. After this workshop the extension staff formed a steering committee which mobilised the small-scale farmers from the different areas so that they can learn seed growing, utilisation and storage. This is done through practicals at the demonstration plots and observations.

The food legume crops are mbambara, groundnuts, bean, cowpea, chick pea greengram, lentil and soya bean. These food legume crops are rich in proteins and they possess nitrogen fixation ability. They also enrich the soil and reduce the use of chemical fertilizer, help improve the household food security and provide opportunities for diversification. This project aims at improving agriculture productivity and sustainability of the small-scale farmers, farming systems and fight malnutrition in the district by increasing production and utilisation of the food legume crops.

The purpose of this study was to investigate whether the educational campaign which was carried out to enlighten the target group was effective. The effectiveness of this educational campaign would be determined by:

- (a). The membership of small-scale farmers to the food legume project.
- (b). How regularly they attend the mobile training courses.
- (c). The number of small-scale farmers who implement the recommendations and instructions made during the educational campaigns.
- (d). The number of bags for seed to be produced.

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1.3 RELEVANCE OF THE STUDY

* The study would determine the impact of educational campaign executed by the extension officers on the growing of food legumes to the small scale farmers in Mukulaikwa and Nsempe. Some of the involved extension officers are farmers themselves, extension staff, Cooperatives, Government Agencies, N.G.O.s and the interested private sectors. The effectiveness of the educational campaigns would be determined by the efficiency of the food legume projects in Mukulaikwa and Snempe.

1.4 OBJECTIVES

To determine:-

- (a). The number of bags for seed which were produced by an individual farmers in comparison to area cultivated.
- (b). The number of farmers joining the food legume project every year Is it increasing or decreasing.
- (c). Whether the farmers are following the laid down procedures in growing the food legumes.

1.5 DEFINITION OF TERMS

- 1. N.G.O. : Non-Governmental Organisation.
- 2. INNOVATION: The growing of the food legumes
- 3. F.A.O.: Food and Agricultural Organisation
- 4. MARKETING: Concerned with storage, transport and selling of output.
- 5. Extension Service: Aim to transfer knowledge to the producer.
- 6. PEASANT: A small-scale farmer.
- 7. PRODUCTION: Refers to the physical tasks involved in cultivating crops.

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8. RESEARCH: Aims to discover new facts about agriculture.
9. DEMONSTRATION: A small area set aside for result-demonstrations by extension staff.
10. EXTENSION WORKER: Men and women employed by and extension agency. In this research the term includes technical and professional staff.
11. COMMUNITY DEVELOPMENT: A social process by which people, through group action, become competent to control their living conditions.
12. CHANGE AGENT: An individual who seeks to influence the behaviour of his clients in a direction recommended by an employer.

1.5 **ASSUMPTION OF THE STUDY**

The assumption of the study was that, there were some factors affecting the impact of the educational campaign which in turn also posed problems in the extension service. Due to this problem the adoption rate of the innovation could be limited.

1.6 **LIMITATION OF THE STUDY**

Despite a good number of food legume projects executed by F.A.O. across the country, the study had been confined in Mukulaikwa and Nsempe due to:-

- Limited time allocated as the researcher was only given one week of carrying out the research. One week could not enable the researcher to have gone round the country .
- Limited financial support given to the researcher all the food projects in Mumbwa.
- Poor means of transport which could delay the researcher to have gone round the country in one week.

CHAPTER 2

LITERATURE REVIEW

In most developing countries like Zambia, subsistence agriculture dominates the economy. For national progress to occur, change in agriculture is essential. This change can only succeed if there are effective educational campaigns on agricultural innovation. Substantial change is needed if diets are to be improved, if a surplus is to enter a phase of self-sustained growth. Change is needed not only to increase production, but to liberate households from poverty the drudgery of manual labour, illhealth, malnutrition and early death. This can be enhanced by the inclusion of women who have been marginalised in the activities of extension service and to avoid apartheid gender women should be looked at as people who have an important role in agriculture. Daniel, B and James S. (1984) argue that, their involvement in Agriculture varies between culture, but in most cases there are a few major agricultural operations in which women do not participate. To be truly effective, an agricultural extension service must deal with the activities handled by women This is not often done, because of sociological constraints and inadequate focus by extension on women's agricultural activities.

The F.A.O. integrated crop Management/Food Legume project ZAM/92/003 states that, the food legume programme aims to improve the productivity and sustainability of the farming systems of the small-scale farmers in each agroecological Zones of Zambia. This is to be done through emphasis on increased production, on farm storage, house utilisation and when possible the export of food legume crops (i.e. beans, cowpea, ground nuts, soya bean and others). The food legume project activities include development of crop production packages, seed multiplication and distribution, farmers training and health education to fight malnutrition. The project is designed to reach female farmers to work with the co-operatives, N.G.O.s, Private

sector and to assist in institutional building.

Therefore, "a great deal of the responsibility for bringing about this change rests on the shoulders of extension workers, representatives of N.G.O.s, private sector or Co-operatives; the men and women at the frontline of the struggle for progressive change in agriculture. Nevertheless, an extension worker helps farmers increase their productivity of their farms and improve their living standards as he is an adviser, technician and middleman operating between agricultural research institutions and the farm families. He is also a change agent helping farmers to identify their problems and find their own solutions and he works for the creation of Community harmony essential for the group projects.

Adams, M.E. (1982) defines an extension officer as a teacher in the non-formal rather than the formal sense and he understands the principles and practice of non-formal adult education which is essential for agricultural extension workers. The principles are easily stated but more difficult to apply in practice. Therefore teaching should be done through discussion, practical demonstrations and participation, not by lecturing in a classroom. It is well known that teachers tend to teach in the same way as they were taught; the same probably applies to extension workers. If they are trained entirely through lectures, they will try to lecture to farmers later on. The best way to ensure that extension workers understand the principles of non-formal education, and have that confidence to put them into practice, is to train them using those principles. This makes the extension officers to have authority standing behind him. Therefore he needs high ideals to overcome the resistance offered by farmers and their families. They may block him, come and go as they please, and even close the door in his face.

This is because the ordinary villager speaks only his own language, follows traditional dietary patterns and has his own medical practitioner. This knowledge of the world is to the immediate region around his village. Such ideals as he may have concerning the new nationalism have come to him through communication channels controlled by the elite. Even with the best of intentions, the elite have difficulty in establishing good contacts with the villagers because there is a gulf between the two groups.

For the extension worker to overcome this obstacle, he should have the task of influencing and convincing the local leaders of the group and influential members of the necessity of changing their practices. Therefore the early attention should be given to studying the leadership of the group, its basis of authority and attitudes towards change. The leadership of sub-groups or cliques within the group, may also require attention. Once a close relationship has been established with the leaders, the extension workers should draw their attention to the possible benefits, for them and the group, of co-operating in an extension programme. If the support of the leadership is obtained at early stage, leaders will view the programme as their own rather than something being imposed from outside or agitated for by some faction within.

Conrad, M.A. and Aurther, N.H. (1964), relates the speeches given by the village development officer in Northern India which were accepted at face value. The peasants would promise to support an officer at the time of his speech, but after he left, they would analyse and dissect what he has said from all points of view particularly in terms of his supposed hidden motives. The peasants would react more on a basis of either personal relationship to the individual than the merits of his programme. /10.

The language symbol, and appeal of speeches formulated by the elite often had little meaning to the villagers.

The academic background of the extension worker and time allocation for his work is one of the major problem. James and Eve (1983) recognised that a frequent criticism is that village extension workers are not capable enough to deliver professional services to farmers and that this is a serious weakness in the system (lack of communication skills). The author further identified that extension agents generally spend too much time in their offices and not enough time in the field. Henceforth the attempt to carry out educational campaigns on the growing of food legumes meet with apathy and sometimes hostility from farmers.

Moreover it is essential for the extension workers to have a strong commitment to succeed in his work because much of the time he is expected to work in supervised in a profession demanding a great deal of patience and persistence. The job itself, being associated with agriculture and exile in the countryside, often carries little public esteem. In many countries, the strongly motivated extension worker is in a difficult position pulled in one direction by loyalty to the broad mass of under privileged farmers and at the same time representative of a class which obstructs any radical attempt to improve living standards of the rural poor.

Van, A.W. and Hawkins, S. (1988) specify, widespread illiteracy can be a major obstacle for agricultural extension (e.g. cooperatives and rural credit programmes) and can result in the exploitation of the illiterate by the educated. It would be too much to expect agricultural extension workers to organise literacy classes, but they can help in a joint programme by providing material and orientating courses towards a programme for agricultural improvement. However, in such a situation, one way of making
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a practical or theoretical lesson more lively and understandable is to create audio visual material about the topic being taught (e.g. grafting citrus, constructing a copradier, pest control) with colour-slide sequences and taped commentary, flip charts, flannel graphs or glove puppets. Where possible representative samples of material should be collected for display. The object is not to produce a definite set of teaching aids which can be used over and over again. The materials should reflect the present interests of the small-scale farmers and help them to appreciate fully the practical relevance of the lessons.

Adams, M.E. (1982) et al, argues that where rural living standards are depressed and traditional values predominate, it may be impracticable to teach new methods and techniques of production until a desire for change has been voiced by the people. In this situation the extension agent must assume the additional role of change agent to awaken in the people a desire for change. He must be a catalyst, helping the small-scale farmers to identify and analyse their own problems. He can do this by establishing a trusting relationship with them, placing himself in their shoes as it were, and trying to see the problems through their eyes. Using his technical knowledge, he must review alternative courses of action with them an attempt to guide them to an appropriate solution. Very often this will take the form of training local opinion leaders as change agents, organising the farmers for group action and promoting the idea of self-help.

There are several well-known schemes for explaining the adoption process. A popular one involved awareness, interest, evaluation, trial and adoption and another; knowledge, persuasion, decision and confirmation. These four stages have been elaborated by Adams, M.E. as:-

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- (a). Knowledge - its when the individual learns of the existence of of the innovation and gains some understanding of its function.
- (b). Persuasion - its when the individual forms a favourable opinion of the innovation.
- (c). Division - its when the individual engages in activities which lead to a choice between adoption and rejection.
- (d). Confirmation - its when the individual makes a final decision to accept or abandon the innovation.

Generally, it is well known that some people are more innovative than others and therefore, adopts have been sub-divided into categories on the basis of the relative time they take to adopt innovations. Innovations are the following categories; early adopters, early majority, late majority and laggards. Innovativeness generally can be related to other personal characteristics like background, social status, affiliations and attitudes. The investigation has provided data on the adoption of the growing of food legumes in Mumbwa. The information that relates to the number and characteristics of adopters has been sought as well as the nature of adoption. Some other relevant information that have been collected relates to the factors that either enhance or impede adoption.

CHAPTER 3

METHODOLOGY

The research had been confined in Mukulaikwa and Nsempe where the small-scale farmers were trained in the growing of food legumes by F.A.O.

(a). POPULATION

The population of Mukulaikwa is approximately 3,000, and of Nsempe is 2,000.

(b). SAMPLE

Out of the total population of Mukulaikwa, the researcher had administered questionnaires to 20 farmers at random, and eight to farmers of Nsempe.

The researcher had carried three sets of questionnaires i.e. for the small-scale farmers, extension staff and administrators.

3.1 DATA COLLECTION

- I. To obtain the information required, three sets of questionnaires had been prepared, one for small scale farmers, the other for the extension staff, and the third one was for the administrators.
- II. The questionnaires have been administered by the researcher.
- III. The District Agricultural Officer and the subject matter specialist of Mumbwa District have been contacted for data on, total number of Extension officers from N.G.O.s, Agricultural Department, Co-operative etc.
- IV. The questionnaires have been collected by the researcher upon completion.

V. THE INSTRUMENT

The principal instruments used in data collection have been three sets of open ended questionnaires. Each questionnaire had been answered independently by individual correspondent and got collected by the researcher upon completion.

CHAPTER 4

FINDINGS

Data analysis has been done by using tables, frequencies and percentages, in some cases tables have been combined according to categories, while in certain circumstances where the respondents differ vehemently, separate tables have been shown. At the base of every table salient points have been highlighted.

MESSAGES GIVEN TO FARMERS

Characteristics of these crops are:-

- they are rich in proteins
- they possess biological nitrogen fixation ability
- they enrich the soil and reduce the need for use of chemical fertilizers
- some are adapted to harsh and marginal agro-ecological conditions.
- they fit into varying cropping patterns
- their protein is complementary to that of cereals.
- they are profitable cash crops
- they constitute an important source of nutrition (grains and leaves) and income.
- they help improve the household food security
- they provide opportunities for crop diversification in Zambia.

Farmers are only given advantages of the food legumes and not the following

- how to grow the food legumes
- storage of the food legumes
- usage of the food legumes
- marketing of the food legumes

FINDINGS ON SMALL SCALE FARMERS

Table 1.0: Sex of the Small-Scale Farmers

SEX	FREQUENCY	PERCENTAGE
Female	26	92.8%
Male	2	7.2%
TOTAL	28	100.0

According to the data provided in table 1.0, it has been found that 92.8% of the small-scale farmers at both Mukulaikwa and Nsempe food legume projects were females and 7.2% were males.

Number of small-scale Farmers

The age range of the small-scale farmers at Nsempe and Mukulaikwa were as follows:-

6 small-scale farmers were in the range of 20-25 years of age.

4 small-scale farmers were in the range of 26-30 years of age.

10 small-scale farmers were in the range of 31-35 years of age.

5 small-scale farmers were in the range of 36-40 years of age.

3 small-scale farmers were in the range of 41-45 years of age.

Table 2.0: Number of Small-scale Farmers Joining and Withdrawing every Year.

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CAMP	1993 MEMBERSHIP	1994 MEMBERSHIP	THOSE WHO JOINED	THOSE WHO WITHDREW	RATE OF INCREASE	RATE DECRE
Mukulaikwa	15	20	5	0	33.33%	
NSEMPE	5	8	3	5	80%	
TOTAL	20	28	8	5	93.33%	

As per data given in table 2.0, it has been found that the rate of increase of farmers at Mukulaikwa is at 33.33%, and the rate of increase as Nsempe at 60%, while the rate of decrease at Mukulikwa is at % and the rate of decrease at Nsempe is at %.

Number of bags for Groundnuts and Soya Beans Produced by Members.

All the farmers at both camps were allowed to cultivate half a lima each and they produced eighty bags for groundnuts and soya beans between themselves. Some farmers produced more bags than others. The number of bags produced by all the 28 farmers ranged from two bags to five bags making the total of 80 bags.

The Projections for the Harvest of 1994/95 Farming Season in Comparison with the Harvest for the 1993/94 Farming Season.

The farmers interviewed by the researcher feel that there will be very little difference in the number of bags harvested during the last farming season and the number of bags to be harvested this farming season.

The study was carried out during the preparations of the fields in readiness for 1994/95 planting season. Therefore the researcher only observed one innovation of the preparing the fields for plantings.

The researcher didn't observe the rest of the innovation, because the study was not carried out during the course of crops being managed by the farmers.

Findings from Extension Officers.

AGE RANGE	FREQUENCY	PERCENTAGE
(i). 20-25 years	1	12.5%
(ii). 26-30	2	25%
(iii). 31-35	4	50%
(iv). 36-40	1	12.5%
TOTAL	8	100.0%

N = 8

As per data given in table 1.0, it has been found that 50% of the extension Officers were in the range of 31-35 years of age, 25% of the Extension Officers were in the range of 26-30 years of age, while 12.5% were in the range of 36-40 years of age.

Table 2.0: Sex

SEX	FREQUENCY	PERCENTAGE
(i). Male	4	50%
(ii). Female	4	50%
TOTAL	8	100%

n = 8

According to the data provided in table 2.0, it has been found that 50% of the Extension Officers at Mukulaikwa and Nsempe were females while 50% were males.

Table 3.0: Are you Sepecially Trained in Food Legumes

RESPONDENTS	FREQUENCY	PERCENTAGE
(i). Yes	Nil	
(ii). No	4	100%
TOTAL	4	100%

N = 4

As per data shown in table 3.0, it has been found that, 100% of the Extension Officers at both Nsempe and Mukulaikwa are not specially trained in food legumes crops.

Findings from Administrators

Table 1.0: Sex

SEX	FREQUENCY	PERCENTAGE
Male	2	50%
Female	2	50%
TOTAL	4	100%

n = 4

Table 2.0: Age in Years

AGE RANGE	FREQUENCY	PERCENTAGES
(i). 21 - 30	1	25%
(ii). 31-40	2	50%
(iii). 41-50	4	100%
TOTAL	4	100%

n = 4

According to the data provided in table 2.0, it has been found 80% of the Administrators age were in the range of 31-40 years of age, 25% were in the range of 21-30 years of age and another 25% were in the range of 41-50 years of age.

Problems faced by Administrators in Running Food Legume Projects in Mumbwa

According to the responses from the Administrators in food legume projects 60% of the problems they faced are attributed to poor funding from the donors and the Government so as to buy the required farm implements that could support all the small-scale farmers in food legume projects. The Administrators have no adequate transport so that they cover all the food legume projects in Mumbwa at least twice in a week.

SUMMARY OF THE FINDINGS

Data collected has been critically analysed by using tables, frequencies and percentages from the responses respondents gave as above, by describing the findings i.e. interpreting them. The objectives of the research have/21.

been conducted to determine the effectiveness of the food legume projects at Mukulaikwa and Nsempe in Mumbwa.

The data analysed has reviewed a number of deficiencies in the programme which have contributed to poor performance of the food legume projects in Mumbwa. In Chapter 5, the researcher will try to highlight some salient points and weak points as he discusses the whole research conducted.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In conclusion, it was evident from the findings of the study that it was a taxing task to run the food legume projects materially and financially. In this respect the Food and Agricultural Organisation and the Government should be given a credit for the work done though a lot needed to be done. However, the Food and Agricultural Organisation should work hand in hand with the Ministry of Agriculture which has the experience in providing the extension skills to the small-scale farmers. This is important because the small scale farmer's aspiration is to yield more food legume crops to avoid starvation and fight against malnutrition. Therefore, if the small-scale farmers did not learn new innovations in food legumes and provided with more skills and knowlege in food production, then it would be a mockery and betrayal to the food legume projects in Mumbwa.

The study also revealed that the small-scale farmers were eager to learn more and actively take part in all the activities in food legume projects. All those interviewed indicated that they had no intention of withdrawing their membership, as they like to remain members of the food legume project. As evidenced from the number of members withdrawing their membership in table 2.0 every year and the number of members joining the food legume project. This could be encouraged if the Government and F.A.O.:-

(i). Acquire adequate trained extension officers to work and promote more food legume projects in Mumbwa.

(iii). Fully fund and support all the food legume projects.

Finally, all agricultural activities in food legume projects should be dealt

with accordingly if F.A.O. and the Ministry of Agriculture take time to discuss certain salient issues just to get advice and guidance from each side in funning the food legume projects in the country.

The main objective of the study was to find out the effectiveness of the food legume projects in Mumbwa, particularly at Mukulaikwa and Nsempe.

However, in the light of this main objective other issues had to be probed into to come up with answers to the main objective. These issues were also stated in objective form, so that the sequence of these objectives were as will be stated below.

The first objective was to reveal the number of bags produced by individual farmer in comparison with the land area cultivated.

The data collected revealed that each individual farmer was allowed to cultivate $\frac{1}{2}$ a lima each and from each lima all the individual farmers produced the bags ranging from 2 bags to 5 bags. This means that no farmer harvested more than 5 bags from each $\frac{1}{2}$ a lima cultivated by each individual farmer. This was attributed to the long drought that hit Mumbwa during the last farming season.

The next objective was to obtain information on the number of farmers joining and withdrawing from the food legume projects at Nsempe and Mukulaikwa every year.

The findings indicated that in 1993 alone, 5 small-scale farmers joined Mukulaikwa food legume project and no small-scale farmer withdrew her membership. This is because this food legume project is just near the Mukulaikwa farmer's training centre and the farmers are visited by the extension staff every week. In this way, farmers got a lot of encouragement from the extension staff.

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In 1993, 3 small-scale farmers joined Nsempe food legume project and 5 small-scale farmers withdrew their membership from this project simply because the project was ineffective, as such they didn't see anything beneficial from the project. Those who withdrew claimed that the beneficiaries were the food legume staff who got paid every month. This is caused by lack of close supervision from the extension officers who walk more than 10 kilometers every visit to the project and for that matter this extension officer is a female.

The other objective was to identify whether the small-scale farmers were following the laid down procedures in growing the food legume crops. It was difficult for the researcher to collect most data for this objective because the research was conducted during field preparation for the 1994/95 farming season, so the only innovation observed by the researcher was the preparation of the fields for planting. If the researcher conducted the research during the farming season he could have come up with the laid down procedures followed by the small-scale farmers.

The last objective was to collect data on the number of small-scale farmers who have adopted the growing of the food legume crops.

All in all it was difficult for the researcher to come up with information showing the number of small-scale farmers who have adopted the growing of food legume crops because the research was not conducted during the farming season. If the research was conducted during the growing season the researcher could have come up with the number of the small-scale farmers who are practicing the innovation.

The data collected revealed that it was difficult for the small-scale farmers to give out projections for the 1994/95 farming season due to persistence of drought around Mumbwa and the delay by F.A.O. to supply farm inputs and farm implements in time even though they were promised to receive what was required in good time. The other data collected revealed that the small-scale farmers were only taught the advantages of the food legume crops over other crops at the expense of teaching them how to grow, harvest, market, store and the usage of the food legume crops.

The data collected on the sex of the small-scale farmers revealed that, more than 98% of the farmers were females and less 2% of the small-scale farmers were males. This was because the females are the households who prepare food, store food and look after children in most homes and less 2% of the males who are the members of food legume projects at Nsempe only help women in constructing work where women cannot afford to do the job, or else these males don't benefit anything from the food legume project at Nsempe.

RECOMMENDATIONS

The following recommendations were made by the researcher so that in future the food legume project's efforts in Mumbwa could be fully appreciated by the small-scale farmers and the society as a whole.

1. In order for the number of limas cultivated to produce the estimated number of bags per lima, extension officers should work effectively in teaching and assisting the small-scale farmers the growing of food legumes. In this way the Government and the funding Agency should support both parties in delivering inputs and implements in time. The extension officers should be supported highly by giving them necessary transport and incentives in form of allowances.
2. The number of small-scale farmers joining every year can only increase if the laggard majority see the benefits of becoming a member to the food legume projects. This could be achieved if the suggestion in number 1 is honoured by the funding institutions and if it is not honoured and observed there will be more farmers withdrawing their membership every year than those joining.
3. Members of the food legume projects should be closely assisted and observed by the extension officers to ensure that they are following the correct laid down procedures in the growing of food legume crops. However, this will lead to high yields.
4. The number of small-scale farmers who have adopted the innovation will depend on the effectiveness of suggestion in number 3. If the suggestion in number 3 is not effectively implemented then the number

4(Cont.)

of the small-scale farmers who have adopted the innovation will be low.

5. Small-scale farmers should be educated on the disadvantages of selling all their produce to the buyers as this would leave them with very little food in reserve and later on starve.
6. Small-scale farmers should be fully educated on the advantages of food legume crops to members of the household, in particular the children.
7. All the parties involved in the food legume projects should be well trained in seed production and storage so that the small-scale farmer will reach a stage where they are able to produce their own seed and be able to store it for the coming farming season instead of waiting for the seeds to be delivered by the sponsors.
8. The majority of the members of food legume projects should be women because they are the ones who store seed and run the affairs of the cooking in every home, but males should also be encouraged to join their spouses so that they produce enough food that can take them a year up to the following harvest season. Therefore, the food legume projects shouldn't be left in the hands of the females only, this would encourage laziness amongst menfolk.
9. The age range of the members of the food legume crops should be between 25-45 because this range is in the range of mothers who should see the importance of food legume crops as these crops prevent malnutrition in children. Therefore, all mothers should be counselled so that they join the food legume projects.

...../26.

10. The majority of the extension officers should be males because extension work is a demanding task which required dedication and personal sacrifice of which this would leave the females very tired when they reach home and would fail to perform domestic duties.

11. Extension workers should retire at the age of 45 because extension work requires a lot of energy and time to perform it.

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Appendix (1)

RESEARCH BUDGET

<u>Description of Items</u>	<u>Amount</u>
1. 2 Duplicating paper at K4,000.00 each ream	K8,000.00
2. Duplicating Ink 2 tubes at K4,000.00 each	K8,000.00
3. Duplicating Stencils 2 boxes at K4,000.00	K8,000.00
4. Transport Money to Mumbwa	K8,000.00
5. Typing at K250.00 per page = 200/3,000 copies	K15,000.00
6. Binding at K1,000.00	K1,000.00
7. 3 nights during data collection	K90,000.00
8. Miscellaneous at K5,000.00	K5,000.00
TOTAL	K143,000.00

RESEARCH TIME-TABLE

DATE	PLACE TO BE VISITED	PURPOSE OF THE VISIT
26/08/94	National Food and Nutrition Commission.	Administering a questionnaire to Food and Legumes Administrators.
29/08/94	Mumbwa District Agricultural Office.	Meeting the Steering Committee for the Food Legume project.
30/08/94	Mumbwa district Agricultural Office.	Administering questionnaires to Administrators and Extension Staff.
31/08/94	Mukulaikwa Farm Institute	Administering a questionnaire to Small-scale farmers.
01/09/94	Mukulaikwa Farm Institute	Administering a questionnaire continuous to those not attended to.
03/09/94	Luampa Basic School via Kaoma.	Working on data analysis starts

QUESTIONNAIRE FOR THE FARMERS

INTRODUCTION TO THE QUESTIONNAIRE

Dear Respondent,

This questionnaire is brought to you to assist the researcher in conducting an investigation on the "Effectiveness of The Educational Campaign on the Growing of Food Legumes in Mukulaikwa." You are kindly requested to answer all the questions. All the information collected is purely for academic purposes and will be strictly confidential.

You are required to mark an "X" against your choice e.g. Do you like swimming?

(i). NO X

(ii). Yes

and to fill in the blank spaces where answers are not provided.

Thank you in advance.

1. Village
2. Camp
3. Age
4. Sex
5. Married
6. Divorced
7. Widow
8. Single
9. Head of Household
10. With children
11. Who introduced you to the growing of food legumes in your area?
.....
.....
12. How did you join the food legume project
-
-

13. How many are you in your food legumes group?
-
-
14. If you are less than 20 in your group, give reasons why you are few?
-
-
15. As a group, how many times do you meet in a week?
- (i). Once
- (ii). Twice
- (iii). Thrice
- (iv). None-at all
16. What type of food legume crops do you specialise in?
-
-
-
-
-
17. Do you know the (officer) who encouraged you in the food legume activities?
- (i). No
- (ii). Yes
18. If your answer in number 17 is Yes, what is his name?
-
-

19. If you know him/her, how many times does he/she visits you in a fortnight?
- (i). Once
 - (ii). Twice
 - (iii). Three times
 - (iv). None-at all
20. How many bags do you expect to prodce during this farming season?
.....
.....
.....
21. If the number of bags you expect to harvest are very few, what could be the cause?
22. (a) Have you ever attended any training course in food legumes?
- (i). No
 - (ii). Yes
- (b). If your answer is yes, what do you remember from the lessons?
- (i).
 - (ii).
 - (iii).
 - (iv).
23. If your answer is no in number 23 (a) give reasons.....
.....
.....
.....

24. Do you have any demonstration plot in your area?

(i). No

(ii). Yes

25. In your opinion how is it doing?

.....

.....

.....

26. What are the reasons for the state in which the demonstration plot is in?

.....

.....

.....

27. Do you know of any members in your group who have withdrawn?

(i). No

(ii). Yes

28. If yes in number 27, give reasons for the withdrawal.

.....

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.....

29. Of what good is the food legume project to you?

.....

.....

.....

30. What do you intend to do with the produce of this coming season?

.....

.....

.....

31. When do you think you will withdraw your membership?

.....

.....

.....

QUESTIONNAIRE FOR EXTENSION WORKERS

INTRODUCTION TO THE QUESTIONNAIRE

Dear Respondent,

This questionnaire is brought to you to assist the researcher in carrying out a study on the "Effectiveness of the Educational campaign on the Growing of Food Legumes in Mukulaikwa area of Mumbwa."

You are kindly asked to answer all the questions. All the information collected is purely for academic purposes and will be strictly confidential.

You are required to mark an "X" against your choice, where an answer is not provided, you will be required to write for your answer.

Thank you in advance.

1. District
2. Camp
3. Age
4. Sex
5. What is the food legume dealing with in Mukulaikwa?
.....
.....
.....
.....
6. Name the crops practiced in the food legume projects in your working area?
.....
.....
.....
.....

7. Who introduced this innovation?

.....

.....

8. Why was this innovation introduced? Give reasons

.....

.....

.....

.....

9. What part did you play in mobilizing the small-scale farmers?

.....

.....

.....

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10. How was the turn out after mobilizing the small-scale farmers,
Give an exact number

.....

.....

.....

.....

11. Were you satisfied with turn out?

(i). No

(ii). Yes

12. Give reasons for your answer in number 11.

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.....

13. Give the gender distribution of the food legume project members

.....
.....
.....
.....

14. Explain the distribution

.....
.....
.....
.....
.....

15. Do you have any demonstration plot in your area?

(i). No

(ii). Yes

16. If yes in number 15, tabulate what happens at the demonstration plots

.....
.....
.....
.....
.....

QUESTIONNAIRE FOR ADMINISTRATORS

INTRODUCTION TO THE QUESTIONNAIRE

Dear Respondent,

This questionnaire is brought to you to assist the researcher in conducting and investigation on the "Effectiveness of the Educational campaign on the growing of the Food Legumes in Mukulaikwa."

You are kindly requested to answer all the questions. All the information collected is purely for academic purposes and will be strictly confidential. You are required to mark "X" against your choice and you will be required to write for your answer where answers are not provided.

Thank you in advance.

1. Position
2. Age
3. Sex
4. What role do your subject matter specialists play in introducing the growing of food legumes? State the roles
5. What role did you play in mobilizing the small-scale farmers of Mukulaikwa to come for introduction of food legume crops in Mukulaikwa? Give the roles

6. How many small-scale farmers are adopting the innovation?
.....
.....
7. Do members in Mukulaikwa increase?
 - (i). No
 - (ii). Yes
8. If yes in number 7, how many small-scale farmers have joined the food legume project in Mukulaikwa this year?
9. If membership in Mukulaikwa is increasing, give reasons
10. How many bags do you expect to be produced in Mukulaikwa this farming season?
.....
.....
11. Give reasons why you decided to estimate the number of bags to be produced in number 10?
.....
.....
.....
12. If there is a variance between your goal and the actual number of small-scale farmers joining the food legumes project, explain the variance.
.....
.....
.....

13. As an Administrator do you think the food legume project in Mumbwa are succeeding or failing? Give reasons for your answer.

.....
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.....
.....

14. Are you married?

- (i). No
- (ii). Yes.

15. If you are married is your spouse a member of the food legume project?

.....
.....

16. If your spouse is not a member of the food legume project give reasons

.....
.....
.....
.....

17. If your spouse is a member of the food legume project state the reasons

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.....
.....
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