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ASSESSMENT OF VEGETABLE PRODUCTION PRACTICES IN QWAQWA WITHIN THABO MOFUTSANYANA DISTRICT

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ABSTRACT

In this study, the information such as biographical information of the vegetable farmers, information about the vegetable gardens or farms, the current vegetable farming practices, irrigation practices on the vegetable soil and the farmers' physical and financial records were assessed. The assessment was conducted through interviews and questionnaires. Seventy three point three percent of the farmers' respondents farm on communal land whereas 33.3% of the respondents are farming on land size of two to four hectares. A model was developed to reflect the process vegetable farmers must follow when acquiring communal land from the Chief for vegetable production. Sixty six point seven percent plough the garden soil to the depth of 30cm. Of the twenty-eight respondents, 85.7% are planting in seedbeds while the rest are planting on ordinary rows without seedbeds. The findings of this study will guide vegetables farmers towards best practices on vegetable production.

Keywords: Vegetable, Irrigation, Practices, Soils and Assessments

1. INTRODUCTION

The study was undertaken within QwaQwa and Clarens districts. In QwaQwa, the villages of Phuthaditjhaba, Makwane, Namahadi and Hasethunya were included. From the villages, a total of thirty vegetable farmers were randomly selected to participate in the survey study and Clarence participated in the study.

Before 1994, agricultural research and development efforts in South Africa focused mainly on commercial farmers, neglecting small scale farmers to a large extent. Consequently, the challenge now lies in redirecting research and development efforts, as well as lending a helping hand to bring this new clientele into the fold. The range of areas or farmers requiring attention includes vegetable gardens in urban and peri-urban areas, small farmers, community farmers and reserve settlement areas (Saunderson, 1995: 165-165)

In 1997 vegetables contributed only 6% to the economy of the Free State province (Venter, du Toit & Bunyasi, 1997: 14). Vegetable production is influenced by a large number of factors including soil, climate, markets and availability of water.

2. LITERATURE REVIEW

The draft Integrated Development Plan (2002-2003) proposes that more attention should be paid to poverty eradication programmes, which involve the development of food gardens. However, research must be initiated, mostly in previously disadvantaged areas, to investigate

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the causes of low vegetable production. Marsh,(1998: 4-14); Ojeifo, (1989:6) and Davidson, (1990:169-172) state that the promotion of gardening as a nutrition or community development strategy is controversial, since it is generally believed that disappointing results of gardening projects stem from failure to understand the existing gardening system in context of changing household objectives. If the improvement of vegetable gardens could be based upon the characteristics and objectives of the traditional gardens, many problems can be avoided because home gardening contributes to household food security and nutrition by providing direct food sources that can be harvested, prepared and served to family members on daily basis.

3. MATERIALS AND METHODS

The questionnaire was used as a survey instrument in this study and it was divided into the following headings; (a) Biographical information, consisting of the districts were the research was done, the province, the age of every farmer, for how long the farmer has been on farm or land, farming experience expressed in years and the highest academic qualification achieved per individual farmer. (b) Information about the farm and farming practices. This part of the questionnaire includes the following: size of land, allocation of land or farm, beneficiaries, group farming and responsibility of farmer with regard to vegetable garden. (c) Irrigating the vegetable soil, questions such as irrigation methods, effects of irrigation on soil structure, irrigation frequency, moisturizing of soil during transplanting of seedlings and mulching and its effects. (d) Farmers were asked about their physical and financial records.

4. BIOGRAPHICAL INFORMATION

4.1. Districts

Thirty questionnaires were completed by the farmers, most of whom were located in the Makwane (26.7%) and Hasethunya (23.3%). Figure 1: illustrates the distributions of farmers as per district or village

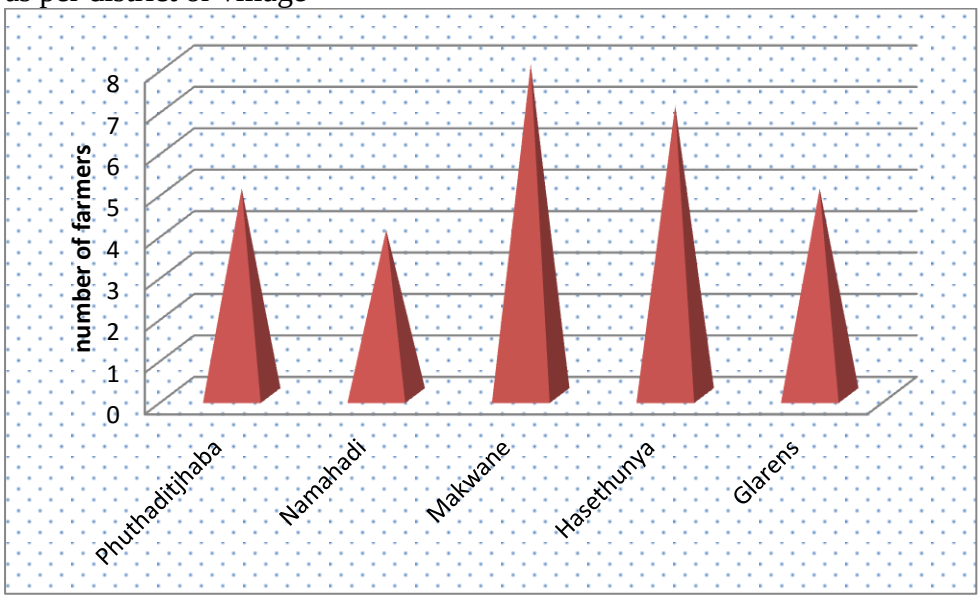

Figure 1: Geographical distributions of farmers as per village or area

4.2 Distribution according to age of farmers or respondents

The age of individual farmers were investigated and this information is presented in figure 5.2 below in the form of its distribution across certain age groups. The average age is 53.0 years, with the standard deviation of 16.4 and one respondent did not know his age.

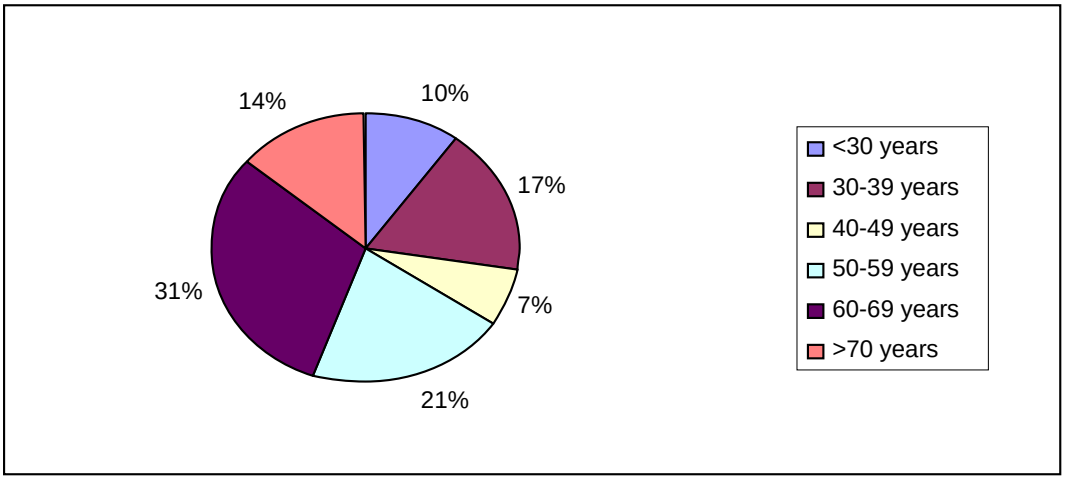

Figure 2: Age distribution of vegetable farmers

The highest number of respondents (31%) was in the 60-69 years groups followed by 21% in the 50-59 years group. It is postulated that youth are still not interested in vegetable production.

4.3 Occupation of farming land in terms of years

Farmers were asked to state the number of years they had been occupying their current farming land. The average duration of land occupation was 15.4 years with standard deviation of 10.8 years. Of the respondents, one third (33.3%) had been occupying land for less than six years, 23.3% had been occupying it for a period of 19-24 years and one farmer has been occupying it for a period of 7-12 years whereas 16.7% has been occupying land for more than 25 years.

4.4 Experience

The experience of farmers with regard to farming and non- farming activities was determined via questionnaire. The respondents were grouped into five year categories according to their experience. With regard to farming experience , most (34.5%) worked as farm workers, 17.2% had poultry management experience, 10.3 % had cooking and sales experience, 6.9% had gardening experience, 6.9% worked as electricians and welders, one person have driving experience, one person has mechanical experience and one respondents has no experience at all. Generally speaking, thus, 58.6% of the respondents had some form of experience related to agriculture. It was clear from the year grouping that the largest portion of respondents (36.7%) had less than five years experience, while 30% had between five and nine years experience. One third of respondents had ten and more years of experience, and these were farmers aged between 53-60 years. The average period experience was 9.4 years.

4.5 Educational qualification of farmers

The highest academic qualification of each individual respondent was determine via a questionnaire and this information is represented in figure 4.5. Only twenty five farmers responded to this question. Most (48.0%) of the twenty five respondents had reached an educational level between grade one to seven, 36.0% had reached a level between grade eight and twelve. 4.0% had completed either a diploma or a degree and the remaining respondents (12.0%) had never attended school at all. Although some respondents had no formal school training, they were able to read and write.

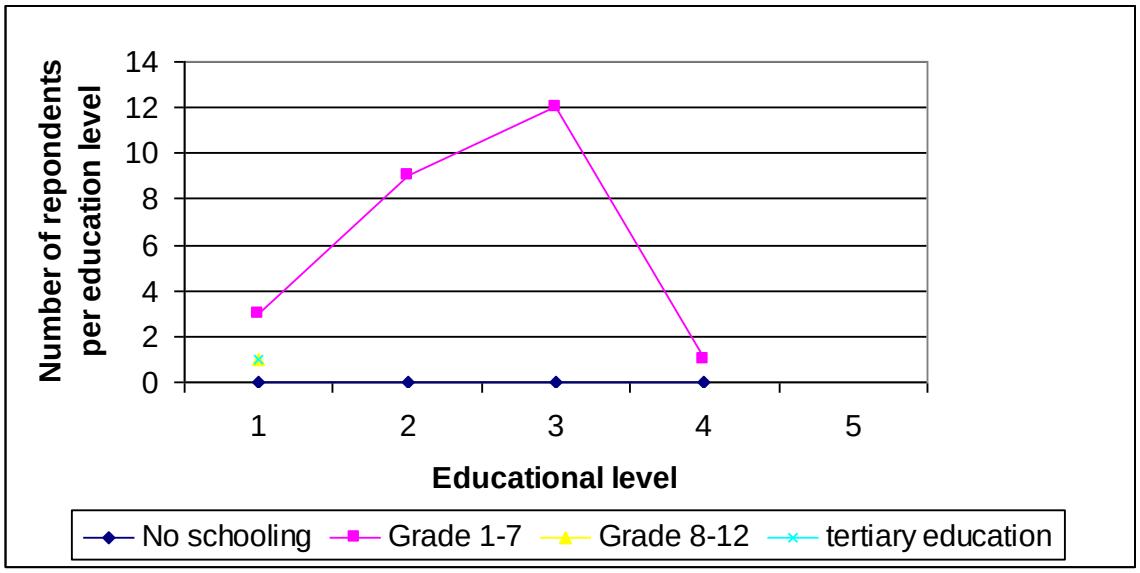

Figure 3: Educational levels of participating farmers or respondents

4.6 Size of farming land

The respondents were asked whether they knew the size of the land they farm on. One third of the respondents did not know the size of their land, 20% of the respondents were farming on land of less than one hectare and 33.3% were farming on land size of between two and four hectares whereas 13.3% of the respondents were farming on an area of more than five hectares. The average size of the farm or land was three hectares with regard to twenty farmers only, since ten farmers did not specify the size of their respective farms or gardens. This indicates a need for training, if farmers do not even know the size of their respective farms, it will be difficult for them to plan their cropping system.

4.7 Allocation of land

The chief allocated land to 73.3% of the farmer respondents; implying that most of the farmers are farming on the communal land. The government had allocated land to 10% of the farmers or respondents, 13.3% had received land from the municipality and 3.3 % had purchased their farm land. The details of the land allocators as per respondents are illustrated in figure 4: below

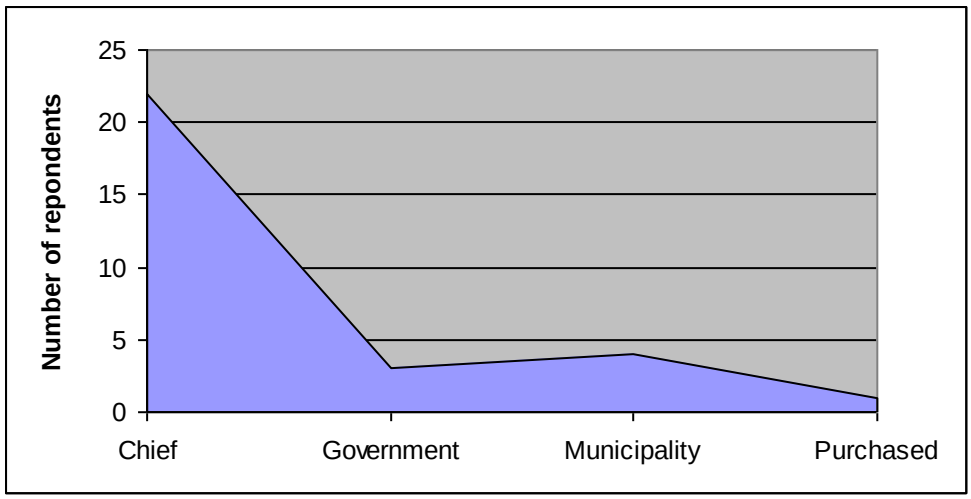

Figure 4: Allocators of land to the vegetable farmers

4.8 Beneficiaries

Beneficiaries can be defined as people who benefit directly from farming activities. These individuals can be identified on the basis on comments received from respondents. The farmers were asked about the number of people in their respective projects. In all the vegetables visited farmers were farming in groups of about 11-15 people. Meaning that, increased successes in garden farming will therefore improve the lives of many people.

4.9 Responsibilities of individual farmer in a group

All the responsibilities assigned to the individual farmer in a group have been investigated according to the specific tasks. Of the nineteen respondents, five were tasked with maintaining infrastructure and fence within the project, four were responsible for selling vegetables and managing the soils in the gardens, three are working as secretaries, three were additional members, one was working as guardian in a group and one was a treasurer while another one was holding a chairmanship position in the project. Project chairmanship appointments in projects are not based on academic qualifications, as emerged during interviews with the beneficiaries. This could have had a negative impact on the success of the projects. The ideal would be for farmers to elect literate management committees. Eleven people did not respond.

4.10 Project managers

Moreover the responsibilities of individual farmers discussed earlier the various ways in which the groups were formed to work on different projects as well as their work procedures were examined. Of the 30 respondents, 53.9% were ordinary members and 46.1% were project managers. Individual vegetable gardens were divided into plots, many of them shared by the beneficiaries. Individuals were responsible for their own plots with regard to production. In few cases groups of farmers who worked together shared the resulting profit.

5. SEEDBEDS

Of the twenty-eight respondents, 85.7% are planting in seedbeds while the rest are planting on ordinary rows without seedbeds. Farmers hardly ever turned the seedbeds in which they

were planting vegetables. They kept on using the same seedbeds without making any changes. Of the twenty-one respondents, 33.3% has been cultivating the same seedbeds since the establishment of their respective projects About 9.5% of the respondents had been working on the seedbeds for a period less than five years, 33.3% for a period between six and ten years, 14.3% between eleven and twenty years and 9.6% for a period longer than twenty one years. It was noted that some of the above mentioned farmers had not been turning their seedbeds for many years and that could result in compaction of their farm or garden soils.

6. SOIL TURNING EQUIPMENT

The soil turning equipment of the farmers was investigated, as well as the reasons for its utilization. The following questions were asked to clarify the opinion of farmers in this regard: Why the soils need turning? Which ploughing depth is recommended? Most respondents (82.8%) are using forks, spades and rakes to till and prepare their soil, while the rest are turning their soil with tractor propelled equipments like a mouldboard plough, disc harrow and chisel plough. Twenty nine respondents (37.1%) tilled their soil as part of loosening it, 27.6% till or plough it to destroy weeds, 6.9% used the above equipment for breaking clods of their soil, 13.8% believes that using machines to plough saves time and labour, and 20.9% of respondents use manual tillage because they thought it was cheaper. A large portion (36.7%) of respondents turn the soil to bury weeds, 6.7% to retain moisture, 13.8% to ease infiltration of the soil and one respondent to mix fertilizer with the soil. Of the respondents 10.3% are turning their soil to mix manure with soil while 6.9% are turning their soil to prepare it for planting and to kill pests. The infiltration rate measurement indicated that the seed beds covered by vegetative plants were relatively resistant to water runoff and sediment formation, unless the soil in beds becomes completely saturated. Disc harrowing could reduce bulk density and improve total porosity (Phiri, Amesquit Rav & Sigh, 2001:131-143).

7. PLOUGHING DEPTH

Most respondents (66.7%) are ploughing the soil to the depth of 30cm, 18.5% to the depth of 25cm, 3.7% to the level of 35cm and 11.1% to the level of 60cm.

8. IRRIGATION PRACTICES

The farmers were asked regarding the irrigation methods they utilized for their crops, the effects of irrigation on soil structure and irrigation frequency in their gardens or fields. Of the twenty six respondents 23.0% were irrigating with sprinklers, 23.0% were utilizing buckets, 11.5% are using watering cans and 15.4% were irrigating with hosepipe, four people did not specify the method they were using for irrigation.

8.1 Irrigation frequency

Majority of the respondents (41.4%) irrigated once a day. Thirty four percent of the respondents irrigated twice a day and 24.1% did not irrigate their vegetables. Vegetables cannot grow well if they are not irrigated since water and nutrients in the soil form a colloidal solution (Phiri et al., 2001:131-143). Of the thirty respondents the majority (66.7%) believed that summer crops need more frequent watering than winter crops. Most of the thirty respondents (63.3%) are irrigating seedbeds before transplantation. Sixteen people of the

twenty-nine respondents were of the idea that clay soil can be watered less often than sandy soil.

9. MULCHING

Project participants were asked to give their interpretation of "mulching". Of the twenty-nine respondents 65.5% had a good understanding of mulching whereas 34.5% were not familiar with the term. After explaining the respondents were asked about the effects of mulching on vegetables. Twenty-five people responded to this question. The effects were not known by 8.0% of respondents, 4.0% responded that it regulates soil temperature, 16.0% said that it protects plants against sun heat. Four percent believed that it prevents soil erosion, 12.0% believes that it improve fertility of soil while 56.0% of the respondents responded that it reduces moisture loss. Gicheru, Gachene & Biamah., (1998:5-9) state that mulching conserves soil water and leads to better crop performance than conventional tillage and tied ridging.

10. FUTURE PLANS FOR THE FARM OR PROJECT

The respondents were asked about the future of their respective projects. A large portion (45.0%) of the twenty respondents indicated that they want to produce more vegetables in the near future, 30.0% wanted to create a bigger market, 15.0% were planning to become commercial farmers in the near future and one responded indicated that he wanted to create employment opportunities. An old farmer wanted to be pensioned off.

11. TRAINING NEEDS

The training needs of the farmer were obtained, the institution which offered training to the respondents, were also considered and the value of training received. Most of the respondents (63.3%) indicated that they still need training whereas the rest already received training. Most of the latter (84.2%) received training from the Department of Agriculture, 10.5% from Boskop and 5.3% from Agriqwa. Of the seventeen respondents, (35.3%) valued the training received worthwhile, 5.9% valued it weak, 17.7% rated it very good, 23.5% said it has increased their production, 17.7% were of the opinion that it has developed their skills. A small portion of the respondents (5.2%), believe they does not need training because they received a lot of training in the past years.

12. RECORD KEEPING AND ECONOMICS

Most (68.0%) of the twenty five respondents were unaware of the meaning of record keeping, 8.0% explained it as the amount of everything in the farm or project, 16.0% believe it as physical and financial records and the rest believe it as a gain or loss in the project. Of the thirty respondents 26.9% keep financial records in their projects while 16.7% keep physical records. Four respondents produce for own consumption, two were unaware of the total amount they sold per season and one sold all his or her products within each season. Of the twenty six respondents 61.5% knew how to determine profit, 7.7% determine it by using records and 3.9% have no records to determine profit while 26.9% were unable to calculate it. Of the twenty nine respondents most (93.1%) borrowed money for their inputs. Most of the respondents (66.7%) store seeds from the previous years, whereas the rest do not. Of those who are storing seeds 60.0% store them in tin and buckets, 20.0% store them inside the original seed packets, 20.0% dried them in the sun.

13. RECOMMENDATIONS

Farmers should be trained to measure their vegetable gardens or fields since this will make it easier for them to plan their vegetable production. Recordkeeping is not properly done; farmers should be advised to keep farming records. Farming records are useful for monitoring and identifying profitable and non-profitable farming activities. Such records can also be used for making decisions regarding future activities that will increase profit. Soil management aspects such as mulching and irrigation must be explained to farmers. Proper soil management techniques in vegetable gardens should have a positive impact on soil management on vegetable production. Fertilizer should be applied to the soil on the basis of the recommendations received from soil laboratories after the soil was carefully analyzed. On average, farmers had been occupying land for 15 years. Most of the respondents (73.3%) had been farming on communal land for a period of almost 25 years. Based on the findings there is no process that the vegetables farmers are following when acquiring communal land from the Chiefs (Tribal Authority). The below model in Fig. 5: was developed and recommended for the vegetables farmers to use and follow when acquiring communal land for vegetable planting from the Chiefs.

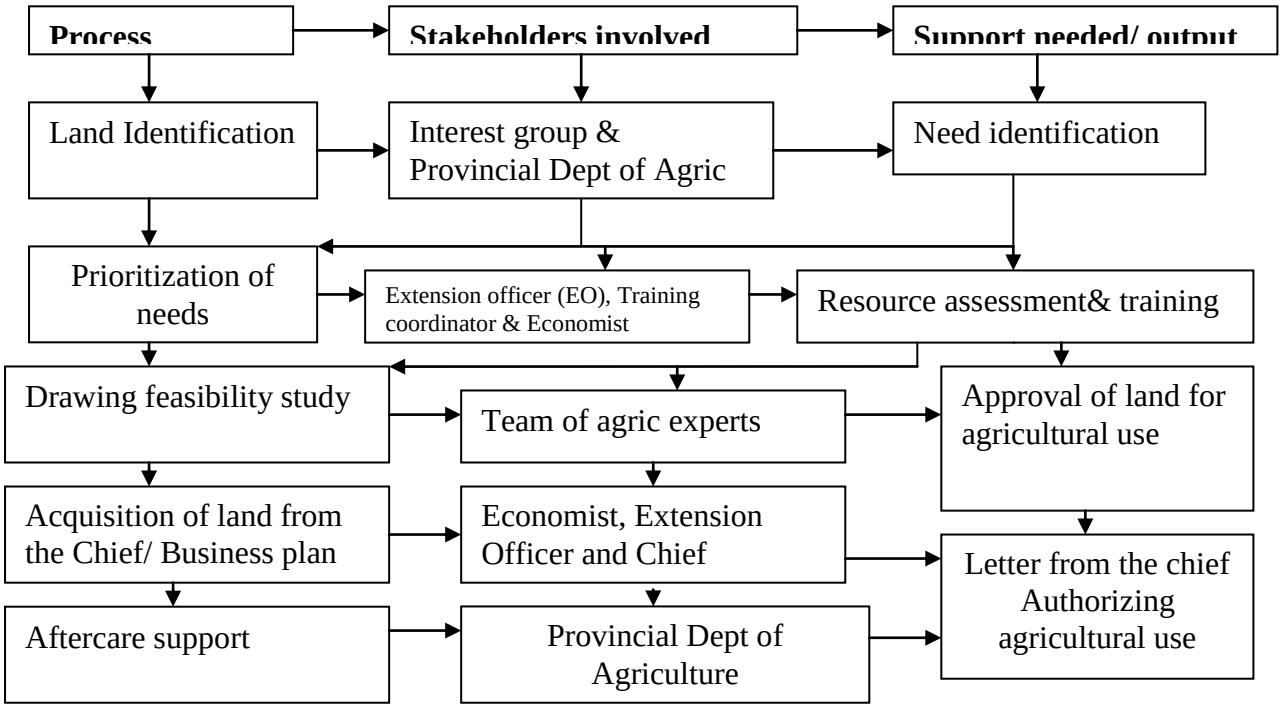

Figure 5: Processes vegetable farmers may follow when acquiring communal land from the chief to plant vegetables

Communal farmers should be advised to buy their own farms. Farmers, who are currently working together in a group, should be advised to farm individually in order to avoid profit-sharing and possible conflict.

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