

## YOUTH ACCESS TO AND USE OF RESOURCES IN VEGETABLE FARMING IN KAKAMEGA TOWN, KENYA

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### Abstract

*This paper investigates the level of access to and use of farming resources by youth engaging in vegetable production in Kakamega Town, Kenya. Primary data was collected using questionnaires and interviews from youth vegetable farmers and key resource persons. Results reveal that youth obtained land through negotiation, inheriting, borrowing, hiring and buying. Water used for vegetable irrigation was obtained from water kiosks, piped borne water, streams, recycled waste water and boreholes. Financial assets and farming inputs were accessed from personal savings, parents, siblings, friends, neighbours and local authorities. Parents, siblings, children, neighbours, friends, relatives and hired workers provided farm labour. Agricultural information was sought from agricultural offices, agricultural shows, research institutes, family members and neighbours. The use of farm resources were influenced by the means of acquiring the resource, distance from the sources, ability to pay, the scale of production, family headship and various stakeholders and institutions. This paper proposes that access to farming resources by youth should be enhanced by the Ministry of Agriculture in collaboration with other key actors.*

**Key Words:** *Farming resources, Kakamega Town, Vegetable farming, Youth*

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### Introduction

Recent urban studies and development policies have paid more attention to youth affairs, especially in developing nations (Sommers, 2010; UN-Habitat, 2013). This has been enhanced by the rapid rate of urbanization against stagnated economic growth in sub-Saharan Africa (UN-Habitat, 2013). Floro and Swain (2010) reveal that most individuals earning low pay and those that experience food shortage eke their livelihood in the informal sector. Urban

scholars and pro-poor authorities have identified urban agriculture (UA) as one of the informal activity (Lebailly and Muteba, 2011) that is adopted by low income urban dwellers to achieve sustainable livelihoods (Lemma and Rao, 2013; Mbiba, 2000). These poor urban dwellers engage in farming mainly for food supply, to save on food expenditure and to supplement their income (Simiyu, 2012).

Access to and ability to control over the use of farming resources greatly

influences the extent to which urban farmers would participate in agricultural activities (Nwaogwugwu, *et al.*, 2010; Simiyu, 2012). Kimaro *et al.* (2015) added that youth participation in agriculture greatly depends on the level of access to and control over the use of farming resources. In his study based in Kakamega Town, Wegulo (2013) notes that access to land, water, credit, and socio-technical support influenced positively the sustainability of UA in Kakamega Town in Kenya. However, as some studies have revealed, most of the youth in developing countries like Kenya have limited access to the farming resources (Auta *et al.*, 2010; Filmer and Fox, 2014).

According to literature available, urban farmers obtain land for farming through direct negotiation between the potential farmer and landlord or a third party, buying, inheriting from parents or relatives, hiring from landlords, borrowing from neighbours, squatting, and co-owning with the spouse in cities found in Africa. (Kiguli *et al.*, 2003; Namwata *et al.*, 2015; Foeken and Owour, 2000; Simiyu, 2012). Njeru and Gichimu (2014) observed that since land in many African nations is communally owned, the decision on use of the land is mainly reserved for the elderly people leaving the youth as passive elements.

Generally, urban farmers use water from pipes, streams, wells, boreholes, rain and sewage to irrigate crops (Foeken, 2006; Namwata *et al.*, 2015; Obuobie *et al.*, 2003; Obuobie *et al.*, 2006; Simiyu, 2012). However, despite the access to water, very few farmers irrigated their crops since most of them were practicing rain-fed agriculture in towns like Eldoret in Kenya (Simiyu, 2012).

Financial capital is also an important asset in acquiring other farming resources required for farming. Simiyu (2012) reports that farming financial resources are obtained from personal savings, off-farm economic activities and the returns from urban agriculture in Eldoret Municipality. However Njeru and Gichimu (2014) note that credit institutions normally perceive young people as unreliable clients as compared to the elderly farmers forcing the youth to secure finances from informal sources.

In the context of access to and use of farming inputs, urban farmers obtained these resources from formal and informal sources (Burleigh and Black, 2001). Urban crop farmers in Nakuru and Eldoret Municipalities in Kenya obtained organic fertilizers (such as manure, crop residues, urban waste and wood ash) from their own farms, friends' or neighbours' while others bought chemical fertilizers from agro-veterinary shops (Foeken, 2006; Simiyu, 2012).

It has been reported that urban farmers received agricultural information from extension officers, agricultural officers, neighbours, relatives, annual agricultural shows, demonstration farms, friends, mass media, agricultural-related publications and schools in Nakuru and Eldoret Municipalities in Kenya (Foeken, 2006; Simiyu, 2012).

The main sources of urban farm labour as reported by scholars include; spouses, parents, siblings, relatives, neighbours, friends and hired labourers which varied depending on the economic status of the household (Foeken and Owour, 2000). As elaborated by Simiyu (2012) the decision to farm was mainly an idea of the women in urban farming

households due to the deplorable economic situations of their spouses.

From the above background, there is insufficient information concerning the level of access to and use of farming resources in urban areas in Kenya. This paper investigates the level of access to and use of farming assets by the youth involved in vegetable production in Kakamega Town, Kenya. It proceeds by indicating the study area, the research methods, results and discussions, conclusions and recommendations.

### ***Study Area and Research Methods***

This paper is based on a field study that was carried out in Kakamega Town. Kakamega Town is located in western Kenya, on latitude 0° 17' N and longitude 34° 45' E and it covers 49 km<sup>2</sup>. Agriculture is a common livelihood activity in Kakamega Town, which is facilitated by a mean annual rainfall of about 2000 mm. Moreover, land in Kakamega area is mainly owned by the

government, private individuals or the community. A sample size of 159 households was obtained from 372 vegetable producing households using the Yamane's formula at a 6 % (0.06) level of precision. Simple random sampling was used in selecting the vegetable farming households. The key informants were selected purposively due to the nature of their jobs. Structured questionnaires were administered to 159 young vegetable farmers while 16 young farmers, one agricultural officer and one estate elder were interviewed between April and June, 2014. Quantitative data was obtained from analysis of the structured questionnaires while qualitative information was derived from the interviews that were conducted. The collected data was analyzed in form of mean and standard deviation and presented in form of frequencies, percentages and tables. The names used in this study are pseudonyms to maintain anonymity of the respondents.

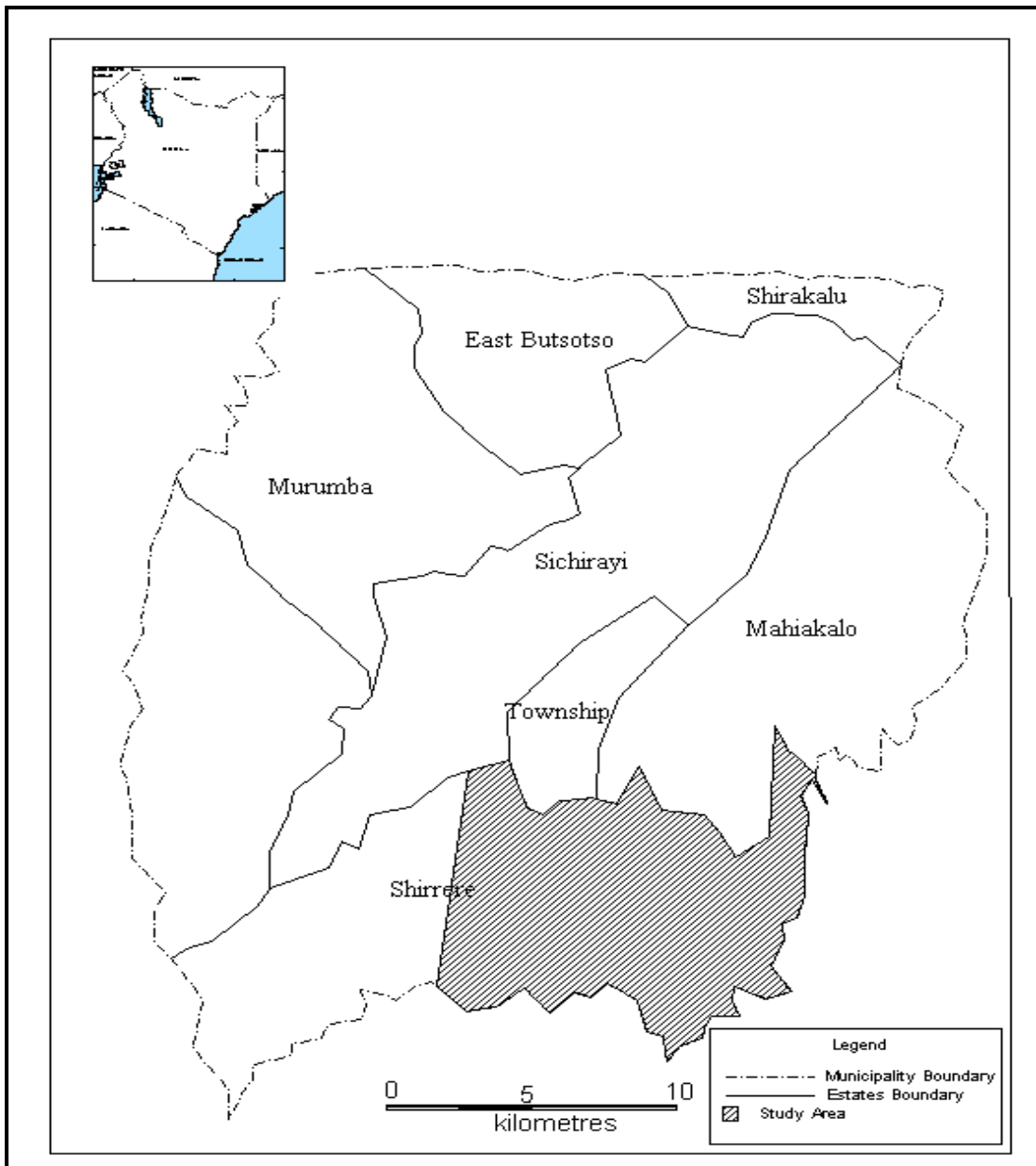


Fig. 1: Kakamega, Showing study area

## Results and Discussion

### *Access to Vegetable Plots*

Since ownership of land has a direct bearing on the land tenure security, farmers who own land have the power to make decisions on how the land is used (Simiyu, 2012). From Table 1, 46.54% (n = 74) of the respondents out of 159 that

were surveyed said that they had negotiated for land with the Town Council of Kakamega or the land lord/ladies, while others said they had borrowed from landlords/friends, hired from neighbours/landlords, inherited from parents/relatives and some had bought it.

Table 1: How vegetable plots were acquired

How plot was acquired	Frequency (N = 159)	Percentage (%)
Negotiation with town council	74	46.54
Borrowed from landlords/friends	36	22.64
Hired from neighbours/landlords	23	14.47
Inherited from parents/relatives	17	10.69
Bought	9	5.66
Total	159	100

These findings concur with the work of Simiyu in Eldoret (Kenya), Kiguli and others in Kampala (Uganda) and Obuobie and others and Quansah in Accra (Ghana) where urban farmers acquire land through negotiation with city authorities, hiring, borrowing, inheritance from parents and/or spouse as well as buying (Kiguli *et al.*, 2003; Obuobie *et al.*, 2003; Quansah, 2012; Simiyu, 2012). Through field observations, it was noted that most of the vegetable plots were found at the backyard while others were at the front yard of the house. Some landlords within Kakamega town did not ask for land rates directly from the tenants as Bonareri revealed in the subsequent revelation: “...The landlord has allowed us to cultivate on the plot near the house. He said that because we pay the house rent we could cultivate vegetables, maize, and anything we would like within the plot” (Interview, 13 June 2014). This implies that the ability to secure a house with a kitchen garden and ability to pay house rent assured the tenants control over the use of the land and the type of crops that were to be grown. The above finding is similar to that of Asiama (2005) in Freetown (Sierra Leone) where urban farmers rarely pay rent for land use and are allowed to cultivate any type of crop they want.

Although vegetable production requires little space for cultivation, the size of the plot has a direct bearing on the

quantity of vegetable produced. The mean size of the vegetable plots was 24.76 square metres ( $M^2$ ) with a standard deviation of 3.55 square metres ( $M^2$ ). Out of the 159 households surveyed, two thirds of the respondents ( $n = 106$ ) said that the land was inadequate whereas a third ( $n = 49$ ) said it was adequate. Some respondents through interviews said that the current farm for vegetable production was inadequate because the plots were also used to cultivate other crops like maize, bananas, and sugarcane. Abuga while commenting on the adequacy of his plot for vegetable production he said: “...the current vegetable plot is too small. I plan to obtain more land to expand my production” (Interview, 14 June 2014). Similarly, urban farmers in Nakuru (Kenya), Kampala (Uganda) and Dodoma Municipality in (Tanzania) were seeking for more land to expand their acreage of production (Foeken, 2006; Kiguli *et al.*, 2003; Namwata *et al.*, 2015).

#### **Access to Water**

For sustainable production of vegetables, irrigation is important during the dry season. Of concern is not the availability of water within the town, but the ability to secure the water and use it for irrigation. Out of the 159 respondents 127 (79.87%) said that they were irrigating their vegetable farms during dry seasons while the remaining 32 respondents (20.13%) revealed that they did not irrigate their vegetable farms at

all. This finding differs slightly with those of Foeken and Owour (2000) who found out that about fifty percent (50%) of the farmers were irrigating their crops in Nakuru Municipality. Some of the reasons for not irrigating vegetables were established through interviews that were conducted in the study area. Onkoba while commenting on irrigation of vegetables said:

*I do not irrigate vegetables frequently throughout the year because there is plenty of rain water in this area. But during the dry spell I do irrigate in the morning or evening depending on the temperatures during the day.* (Interview, 12 June 2014).

From the quotations, some of the farmers irrigated their vegetables mainly during the dry season (between the month of November and February). Specifically, the gardens were mainly irrigated early in the morning or in the evening (See, Obuobie *et al.*, 2006; Simiyu, 2012). However, others did not irrigate their vegetable as indicated in an interview

with Mideva who revealed that “....*I grow vegetables mainly during the rainy season. During the dry season, vegetable production is limited by inadequate water for irrigation.*” (Interview, 14 June 2014). From the above interview, irrigation of vegetables was hindered by shortage of water for irrigation. Similarly, according to Namwata *et al.* (2015) and Obuobie *et al.* (2006) urban farmers in Dodoma Municipality (Tanzania) and Accra (Ghana) are facing water shortage.

Table 2 shows that 82 young vegetable farmers obtained water for irrigation from water kiosks, 54 young farmers use pipe-borne water, 31 of them recycled waste water, 23 obtained it from rivers or streams and only 4 of them got water from boreholes. Based on the sources of water, it could be construed that those farmers who used water from kiosks and pipe borne water had to incur more financial costs compared to those who obtained water from the other sources.

Table 2: Sources of water for irrigation

Sources of water for irrigation	Frequency *	Percent (%)
Water kiosks	82	61.63
Piped water	54	33.96
Recycled waste water	31	19.50
River/Streams	23	14.47
Borehole	4	2.52

\* Multiple responses

Through field observation, young people used piped water since the water taps were located a walking distance from the vegetable farms or in some instance in their houses. This is also supported by the comments of Jelagat who said that “..*I do irrigate vegetables during the dry season and I get water from water tap that is located within the*

*house* ” (Interview, 12 June 2014). Furthermore, it was established through interviews that water for irrigation was obtained from different sources as Bonareri noted: “..*The main source of water is the water kiosk which is about 200m away from my farm. I also use waste water from the kitchen to irrigate vegetables*” (Interview, 13 June 2014).

Therefore, it could be concluded that the distance from the water sources as well as the ability to pay for the water bills enabled farmers to obtain water for irrigation. Furthermore, the young farmers used water buckets or ten (10) litre jerricans to carry water during irrigation of vegetables from the main water source to the farm which is similar to other towns in Africa like Accra in Ghana (Obuobie *et al.*, 2006).

### **Access to Finance and Farm Inputs**

Financial assets are critical in the acquisition of farm inputs, buying or hiring land and catering for transport services for youth seeking extension services. With regard to sources finances, Table 3 shows that more than two thirds of the respondents (67.92%) obtained finances from personal savings while others secured financial capital from parents, friends, spouses, neighbours, other farming activities, and financial institutions.

Table 3: Sources of finance for vegetable farming

Sources of finance	Frequency *	Percentage (%)
Personal savings	108	67.92
Parents	74	46.54
Friends	63	39.62
Spouses	48	30.19
Neighbours	30	18.87
Other farming activity	17	10.69
Financial institutions	13	8.18

\*multiple responses

The narratives from Mmboga and Mideva below reveal that the women depended more on their spouses for provision of financial support used in vegetable production. Mmboga indicated that: “...my husband provides some cash to supplement the little I have to buy seeds, agro-chemicals and fertilizer” (Interview, 14 June 2014) while Mideva reported that: “....my spouse helps in provision of finance, seeds and seedlings” (Interview, 14 June 2014). This finding is in line with the work of

Simiyu (2012) who observed that men in Eldoret Municipality acquired the farm land and inputs more than their spouses.

With regard to access to farm inputs and utilization, farm inputs were conceived as vegetable seeds, organic manure, chemical fertilizers as well as agro-chemicals which are accessible to the youth. From Table 4, 107 young farmers were buying farm inputs, 78 respondents were borrowing and 26 youth exchanged farm inputs with other goods.

Table 4: Main source of farm inputs

Main source	Frequency*	Percent (%)
Buying	107	67.30
Borrowing	78	49.06
Exchange with other goods	26	16.35

\*Multiple responses

Generally, the youth obtained farm inputs through social connections and buying. Through the conducted interviews it was reported that some of them were recycling seeds (seedlings), others used organic manure from their farms while others borrowed organic manure from their neighbours and friends. Agro-chemicals were the most commonly bought farm inputs compared to either seeds (seedlings) or organic manure. Onkoba’s revelation is quite illustrative of how the young farmers obtain farm manure by noting that:

*I use farm yard manure. I have chicken that produce the manure. Apart from manure I get from my chicken, I also borrow manure from friends that have grade cattle ...I do not pay anything because they are supposed to dispose it*

*so they do so to us instead* (Interview, 12 June 2014).

Onkoba’s narrative elucidates how young farmers obtain organic manure from their farms while at the same time borrow some from their friends. Foeken and Owour (2000) in Nakuru Municipality and Simiyu (2012) in Eldoret Municipality farmers obtained some of the farm inputs (seedlings) from their neighbours by borrowing.

**Access to Labour**

Cultivating large pieces of land against having limited time, the young farmers require more labour force. From Table 5, 27.69% of the respondents indicated that they obtained labour from parents whereas others from siblings, spouses, relatives, friends, children, and hired labour.

Table 5: Source of labour for vegetable farming

Other sources of labor	Frequency *	Percent
Parents	44	27.67
Siblings	26	16.35
Spouse	17	10.69
Relatives	11	6.92
Friends	8	5.03
Children	6	3.77
Hired labour	2	1.26

\*(does not add to 100% because there were several sources of labour)

Clearly, from Evan’s narrative below, some of the married couples were supported by their spouses during land preparation and weeding of the vegetable garden. Evans observed that “*..my wife supports me particularly during planting and weeding of the vegetables*” (Interview, 14 June 2014). Likewise, Bonareri was also assisted by her husband in vegetable production as she indicated that: “*my spouse helps mainly in weeding of the vegetable plot*” (Interview, 13 June 2014). From the two

accounts above, where both the female and male spouses provided labour during cultivation of vegetables which contradicts the case in Accra Ghana where husbands rarely helped their wives on the farms yet the men got labour assistance from their wives (Armar-Klemesu and Maxwell, 2000).

**Access to Agricultural Information**

Access to agricultural knowledge about new techniques of farming and technologies is important for effective production of vegetables in urban areas.



Out of 159 of the respondents 44 young people sought agricultural information from conventional sources while 115 young farmers did not. Among the 44 respondents that sought agricultural information, 26 of them obtained agricultural information from agricultural

shows, 15 from the Kenya Agricultural Research Institute (KARI), 8 out of the 44 from Ministry of Agriculture office, 3 obtained it from agricultural desk at the chief's office at Shirere and equally the same number from the demonstration farms (Table 6).

Table 6: Where agricultural information was sought

Where information was sought	Frequency *	Percentage (%)
Agricultural show	26	16.35
KARI	15	9.43
Town Agricultural office	8	5.03
Agricultural desk	3	1.89
Demonstration farms	3	1.89

\* Multiple responses

Generally, agricultural shows were visited more frequently by young farmers compared to other conventional source of agricultural information. It was established through an interview with an Agricultural officer that the diverse agricultural information was divulged to the youth. The Agricultural Officer said the following when asked about provision of agricultural information to the young farmers:

*We have been educating the youth in almost every area of the town through seminars about vegetable production in their respective youth "bunges" in collaboration with United States Agency of International Development (USAID). We are also advising them to carry out the vegetable cultivation and marketing. (Agricultural Officer, 21 June 2014 interview)*

From this interview it was clear that there were intentions to promote access to information through seminars and workshops that were organized in

collaboration with other stakeholders. The role of formal institutions as powerful instruments in determining access to assets were manifested, especially in the role of Agricultural Society of Kenya (ASK) in collaboration with the Ministry of Agriculture and other stakeholders in organizing agricultural show.

Given that a considerable number of youth rarely seek information, the reasons for not doing so may vary depending on geographical location, availability of time and great need for the information in question. About one half of the 159 respondents (79) did not seek agricultural information because of inadequate time, others said it was due to ability to secure the information from other sources such as: parents, mass media, friends, neighbours, whereas another group of youth said they did not require the information while some youth noted lack of knowledge on where to get the information (Table 7).

Table 7: Reasons for not seeking agricultural information

Reasons for not seeking agricultural information	Frequency *	Percentage (%)
Insufficient time	79	49.69
Get information from parents	62	38.99
Get information from mass media	54	33.96
Get information from friends	41	25.79
Get information from neighbours	33	20.75
Do not require	32	20.13
Do not know where to obtain the information	24	15.09

\* Does not add to 100% because there were several reasons for not seeking information

Since parents were providing farming information to their children (youth), some youth believed that there was no need to seek information from the agricultural offices. Some of them noted that they had learnt agriculture at primary and secondary school levels while others were also members of Young Farmers Club during their schooling period (See Simiyu, 2012). Some farmers noted that they did not have enough time to seek information.

### Conclusions

Access to farming resources and ability to control the use of resources is critical for youth engagement in vegetable production. Although the youth were able to secure land for vegetable farming through negotiating with town council, borrowing from the landlords or neighbours, hiring from neighbours, inheriting from parents or relatives and buying, most of them indicated that the land was inadequate. Irrigation of vegetables was mainly done during the dry season in the evening or morning and the main sources of water for irrigation included: rain water, piped water, water kiosks, recycled water from the kitchen, nearby river, and boreholes. However, some of the respondents through interviews noted that they practised rain-

fed vegetable production and therefore vegetable production was seasonal.

With regard to access to financial resources and farm inputs, informal institutions were an important source. Parents, siblings, neighbours, friends, personal savings formed a significant source of financial capital within the young vegetable producing households. Seeds and seedlings, organic manure were sourced mainly through borrowing from neighbours or exchanging with other goods while chemical fertilizers were bought from agro-veterinary shops located within Kakamega Town.

There was evidence of pooling of labour within the family as indicated by parents, spouses, siblings and children assisting the young farmers engaging in vegetable production. Through their assistance, transfer of skills, knowledge and techniques were enhanced therefore promoting intergenerational sustainability of agriculture. Hiring of farm workers was uncommon among the young vegetable farmers which could be attributed to small pieces of vegetable plots as well as inadequate finances to pay the farm workers.

It was evident that agricultural information was sought mainly from their parents, mass media, friends and neighbours. The techno-savvy youth were able to read relevant agricultural

information over the internet while others watched agricultural related programmes like “Shamba Shape Up” on Citizen Television (one of private television station in Kenya) which is aired every Sunday mainly in the afternoon.

### Policy Interventions

Building on the premise that land in urban areas is scarce and on high demand, the youth engaging in agriculture should be encouraged to use public land such as the unused land located within schools, churches, hospitals and along the roads. Moreover, young farmers should be encouraged to harvest rain water for irrigation and be trained on better ways of recycling waste water in order to reduce contamination of vegetable grown within the town. There is a great need to venture into commercial vegetable production by the youth should form groups so that they can secure loans from formal institutions. And from the revelation that some youth do not have time, we recommend that the extension officers should establish demonstration farms in every estate in co-ordination with the local administration so that the students, employees or busy youth are able to access extension services at their doorstep.

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