

# SHAMBA SHAPE UP SERIES 10

KNOWLEDGE, ATTITUDE AND PRACTICES SURVEY REPORT



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# Contents

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<b>EXECUTIVE SUMMARY</b> .....	3
<b>INTRODUCTION</b> .....	5
<b>Research Methodology</b> .....	6
<b>Sample profile by gender and age</b> .....	6
<b>Sample profile by county</b> .....	7
<b>Sample profile by ‘main source of farming income’</b> .....	7
<b>SECTION 1: TELEVISION VIEWING</b> .....	8
<b>1.3 Sources of agricultural information</b> .....	10
<b>1.3 Other farming TV programmes watched</b> .....	11
<b>SECTION 2: CHANGES IN KNOWLEDGE, ATTITUDES AND PRACTICES ATTRIBUTABLE TO SSU 10</b> .....	12
<b>2.1 Knowledge gained from watching SSU</b> .....	12
<b>2.2 Changes in attitudes and practices attributable to SSU 10</b> .....	13
<b>2.3 Anticipated results of changes farmers have made</b> .....	13
<b>SECTION 3: PLANTING</b> .....	14
<b>3.1 Seeds used when planting maize or sweet potatoes</b> .....	14
<b>3.2 Fertilizer used when planting</b> .....	14
<b>SECTION 4 ANIMAL FEEDS</b> .....	15
<b>4.1 Milk production</b> .....	15
<b>4.2 Importance of proteins and supplements</b> .....	15
<b>4.3 Cow feed</b> .....	16
<b>4.4 Bringing a cow into heat</b> .....	17
<b>SECTION 5: FALL ARMY WORM (FAW)</b> .....	18
<b>5.1 Loss of crops due to Fall Army Worms</b> .....	18
<b>5.2 Spotting Fall Army Worms</b> .....	19
<b>5.3 Removing Fall Army Worms</b> .....	19
<b>SECTION 6: CONSERVATION AGRICULTURE</b> .....	20
<b>6.1 Soil conservation practices</b> .....	20
<b>6.2 Awareness of the usefulness of crop rotation</b> .....	20
<b>6.3 Single furrow planting</b> .....	21
<b>6.5 Adoption of soil conservation practices</b> .....	22
<b>SECTION 7: INSURANCE</b> .....	22
<b>7.1 Current insurance products</b> .....	22
<b>7.2 Insurance purchase</b> .....	23
<b>7.3 Reason for non-purchase of insurance</b> .....	23
<b>SECTION 8: ORANGE FLESHED SWEET POTATO MANAGEMENT</b> .....	24

<b>8.1 Awareness of sweet potato flesh colours</b> .....	24
<b>8.2 Benefits of orange flesh sweet potatoes</b> .....	24
<b>8.3 Source of orange fleshed sweet potato vines</b> .....	25
<b>8.4 Uses of orange fleshed sweet potato harvest</b> .....	26
SECTION 9: HARVEST AND POST HARVEST MANAGEMENT OF CEREALS AND PULSES .....	26
<b>9.1 Cereals and pulses spoilt in last season</b> .....	26
<b>9.3 Maize post-harvest handling</b> .....	28
SECTION 10: WEATHER.....	30
<b>10.1 Weather effects on farm</b> .....	30
SECTION 11: MODERN COOKING SOLUTIONS .....	31
<b>11.1 Main cooking method</b> .....	31
<b>11.2 Cheap cooking methods for heavy foods</b> .....	32
<b>11.3 Electric pressure cooker</b> .....	33
<b>11.5 Important features for cooking appliance</b> .....	34
SECTION 12: AVOCADO MANAGEMENT .....	35
<b>12.1 Source of Avocado seedlings</b> .....	35
<b>12.2. Avocado pruning</b> .....	36
<b>12.3 Avocado growth</b> .....	36
<b>12.4. Avocado harvest</b> .....	37
SECTION 13: MANAGEMENT AND PROMOTION OF COMMERCIAL TREES.....	37
<b>13.1 Commercial trees grown</b> .....	37
<b>13.2 Tree seedlings source</b> .....	38
<b>13. 3. Reasons for planting trees</b> .....	38
SECTION 14: SOURCING OF MEAT .....	39
<b>14.1 Meat sourcing</b> .....	39
CONCLUSIONS.....	52

# EXECUTIVE SUMMARY

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*Shamba Shape Up* (SSU) series 10 was broadcast nationally on Kenya's leading television channel, Citizen TV, between February 2020 and September 2020. The series was filmed in a variety of key agricultural locations and covered a range of topics, from seeds to animal feed and husbandry to insurance, weather and cooking methods. **SSU aims to raise knowledge of good farming and nutrition practices, promote positive attitudes to change and ultimately change the ways in which farmers improve their production of crops and livestock; their consumption of nutritious foods and adoption of modern cooking practices.**

SSU has been running continuously since 2010 and is Kenya's leading agricultural television series. **According to GeoPoll's Audience Measurement Survey it is estimated that SSU 10 reached around two million viewers each week for each of the 25 weeks it was on-air on Saturday (English) and around 2.2 million viewers on Sunday afternoons (Swahili). When asked, many viewers say they watch SSU with other people bringing the estimate of total viewers for Kenya alone to a minimum of 6.8 Million weekly viewers** (see Annex 1). Moreover, this carried a further benefit, as it is known that co-viewing has greater impact on knowledge gain and influencing practice. Further, SSU has become destination viewing for farmers and non-farmers alike, with impressive secondary audiences through information sharing and 'word of mouth'. Pre and post broadcast studies have been conducted for each series and the evidence is compelling in demonstrating SSU's impact in providing audiences with information they need to improve their farming practices.

**In this latest survey, nine in ten of the farmers who took part in the survey said that SSU was the TV programme they trusted the most to provide agricultural and farming information.** Almost all viewers (96%) said they had learnt something new from the series. The most recalled topics from SSU 10 were harvesting and storage (62%), potato/sweet potato farming (40%) and modern cooking appliances (38%).

Behaviour change in respect of farming practices is notoriously difficult to effect, but almost all the farmers who viewed this latest series (93%) claimed to have made a change which they attributed to the programme. **As a result of the changes they made, almost two-thirds (63%) reported better yields and incomes.** Television is now the most trusted and important source of agricultural information for farmers replacing the more traditional sources of newspapers and agro-dealers almost certainly because of the power of the medium through strong visual images featuring real and relatable farmers and their families and the reputation that the series has built up over time.

Maize remains the most important source of income for the farmers in the surveys, although many reported significant crop losses. **Viewers knowledge about the value of good practice with regards to soil conservation and crop rotation was greater than that of non-viewers.** The uptake of crop and livestock insurance was very low (around one in ten) and no different for viewers and non-viewers. However, the evidence suggests an interest in and appetite for more information on insurance in future series.

**SSU is an important and trusted source of information and watching it prompts change. The specific practices improved as a result of watching SSU 10 were:**

- Use of improved/certified variety of seeds for crop planting
- Benefits of proteins and supplements for cattle and better feeding practices
- Use of scientific practices for reducing grain losses
- Better awareness of detecting and dealing with fall army worm
- Improved conservation practices
- Improved practices with respect of the sourcing of seeds, vines and trees
- Evidence of moving from traditional planting times to using weather forecasts
- Slight up-tick in taking out insurance policies for crops and livestock
- More positive attitudes towards using modern cooking method

# INTRODUCTION

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*Shamba Shape Up* (SSU) is East Africa’s longest running agricultural television series. The series adopts an edutainment format and is based on ‘make-overs’ filmed on smallholder farms across key agricultural locations. The aim of the series is to illustrate new methods and solutions and to give farmers advice to help them increase production and turn their farms into viable businesses. The series is broadcast on national television stations in Kenya, Tanzania and Uganda; and on DSTV and a number of free to air digital channels.

The latest series of SSU, and the subject of this report, adapted its long-running format to incorporate its traditional SSU farmer-focused content with that of *Shamba Chef* (SC) so as to combine content around best farming practices (crop and livestock production) with the consumption of nutritious foods and the use of clean, modern cooking practices. During each of the 25 episodes the presenters and subject matter experts visited a family farm to demonstrate practical solutions to solve the farmers problems and improve production practices and adaptations to the home. In Kenya, the series was aired weekly between February 2020 and September 2020 on Citizen Television in both English and Kiswahili and attracted weekly audiences of around two million viewers to its Saturday English language broadcasts and around 2.2 million viewers to its Sunday Swahili broadcasts. Calculations made to account for co-viewing, gives a total weekly reach of at least 6.8 million adults aged 16+ in Kenya alone.

Pre and post broadcast knowledge, attitudes and practices (KAP) surveys were conducted to evaluate the impact of the series on small-holder farmers in Kenya. This report details the findings of the series 10 KAP surveys conducted between 4<sup>th</sup> and 8<sup>th</sup> February 2020 and 24<sup>th</sup> September to 20<sup>th</sup> October. The primary objectives of the pre- series and post-series broadcast studies are to measure the *effectiveness* of SSU’s content in increasing knowledge and changing the attitudes and behaviours of small-scale farmers. In series 10 SSU covered 14 main topics over 25 episodes, with some topics – such as animal feed, dairy hygiene and breeding receiving considerable coverage (10 features) and others, such as the production and consumption of meat receiving less coverage (2 features).

Partners	Topic
Coopers	Animal Feed and Hygiene
International Centre of Insect Physiology and Ecology (ICIPE)	Fall army worm control
Participatory Approaches for Integrated Development (PAFID)	Conservation Agriculture (Minimum Tillage, Crop Rotation, Crop Cover)
Lloyds Foundation/Mercy Corps	Crop and Livestock Insurance
International Potato Centre (CIP)	Orange Fleshed Sweet Potato Management, Nutrition, Value Addition
World Food Programme (WFP)	Harvest and Post-Harvest Management of Cereals and Pulses
Modern Energy Cooking Services (MECS), UK Aid	Modern Cooking Solutions, Focus: Electric Pressure Cooker
CGIAR Big Data Platform	Let it Rain Campaign
Retail Trade Association of Kenya (Retrak) Kenya Markets Trust	Awareness around production and consumption of Meats- Farm to Fork
Plant & Food Research	Avocado management
GATSBY Foundation	Management and promotion of commercial trees
M-KOPA	Promotion of solar powered fridge and farmer phone
Mercy Corps	Locust awareness, COVID-19 Q&A

Research is required by the production team and its partners to assess ‘what has been successful’ and ‘what has been less successful’ in terms of raising awareness about specific topics and issues, having a positive impact on attitudes and even changing behaviours and practices. Changing farming practices and behaviours is a particularly challenging objective in the short-term as behaviours tend to change over longer periods of time and often ‘proof of success of new practices’ have to be demonstrated. The evidence suggests that the more coverage a topic receives on SSU the greater its impact in terms of building knowledge and improving practices, which in turn, lead to better yields and increased incomes. SSU is now in its tenth year and it continues to attract considerable audiences, many of whom they say they watch the series together. A measure of the success of the series is that it is becoming increasingly difficult in the research process to find small-scale farmers in the appropriate geographic locations who have not seen at least some of the series for viewer/ non-viewer comparisons.

## Research Methodology

The Knowledge, Attitude and Practice (KAP) surveys for *Shamba Shape Up* Series 10 were conducted by GeoPoll, a third-party research agency based in Nairobi. The study took the form of a classic pre-broadcast and post-broadcast design to facilitate comparisons and attribute changes to the viewing of SSU 10 where possible. The pre-broadcast survey took place in February 2020, utilising GeoPoll’s bespoke SMS data collection method. The sample of farmers was drawn from GeoPoll’s database of some 30,000 farmers. No quotas or sampling controls were used for ‘previous series viewers’/ ‘previous series non-viewers’ and the resultant pre-broadcast sample was made up of 82% who had been exposed to SSU in the 12 months prior to February 2020 and 18% who had not been exposed. The post-broadcast survey, conducted between 24<sup>th</sup> September and 20<sup>th</sup> October 2020 imposed quotas of 50% series 10 viewers and 50% series 10 non-viewers to ensure that the achieved sample sizes are sufficient for analysis and comparative purposes.

When reading the report it is important to note that pre and post broadcast differences are becoming more challenging to detect over time as *Shamba Shape Up* has been broadcast for ten years and appeals to large audiences, many of whom co-view and share the information they have learnt from the programmes through word of mouth, social media and messaging sites.

### Sample profile by gender and age

The pre and post broadcast samples were controlled for gender to ensure a 50/50 male/female distribution. No controls were applied for age and the distribution fell out naturally from those who responded to the two surveys. The resulting age distribution was roughly a third in each of the three age brackets, with the pre-broadcast survey slightly skewed towards 25-34 year olds and the post broadcast survey slightly skewed towards those aged 35 and over.

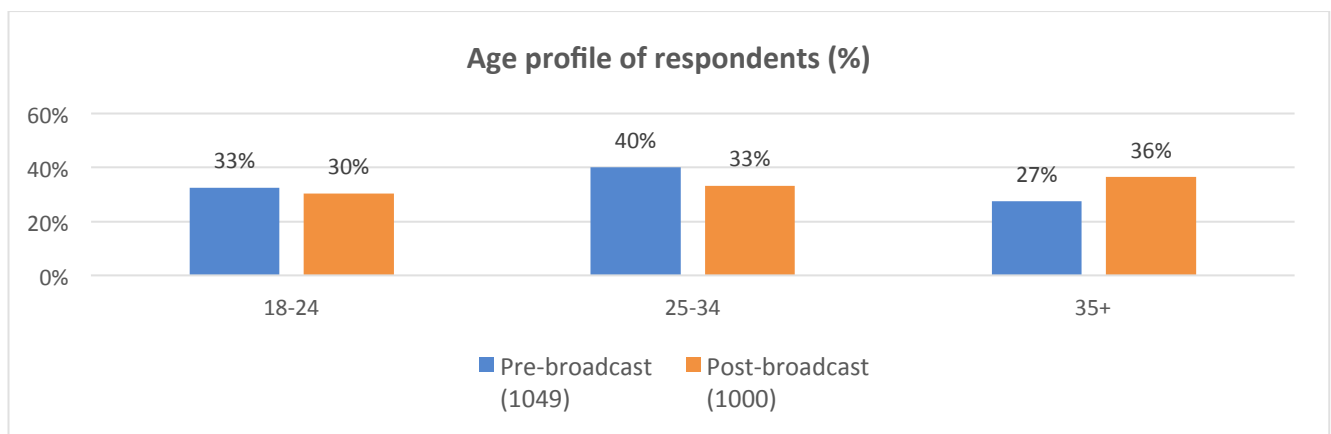


Figure 1: Age of Respondents

## Sample profile by county

No controls for county location were applied to the two samples and the resultant samples yielded relatively few variations between counties, with the exception of Uasin Gishu and Nyeri where there were significantly more respondents in the pre-broadcast sample than in the post-broadcast sample.

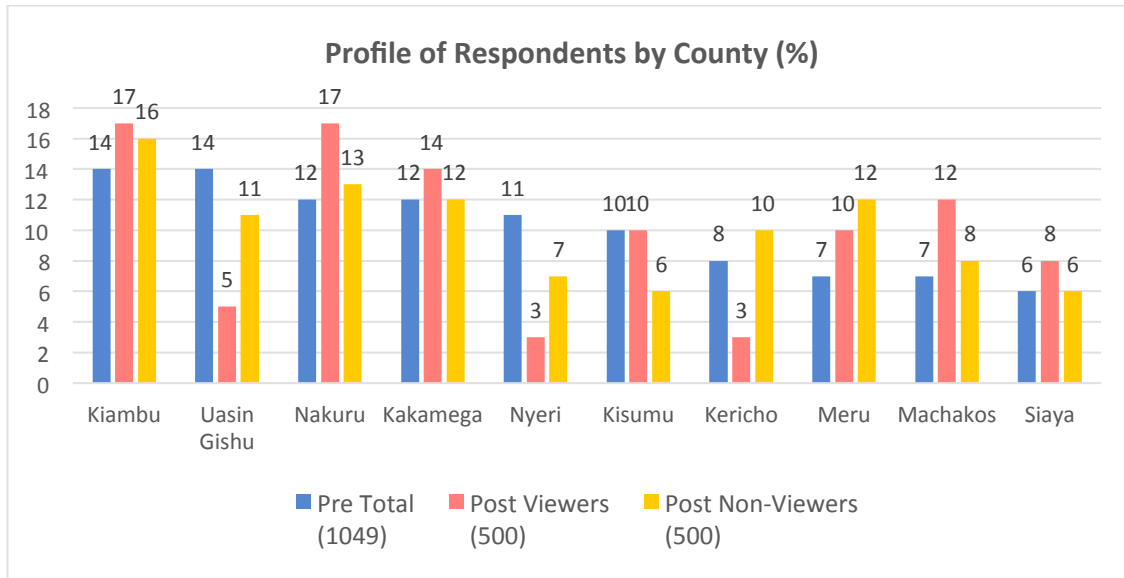


Figure 2: Demographics - County

## Sample profile by 'main source of farming income'

The profile of the two samples in terms of the 'main sources of income from farming activities' was very similar.

- Maize farming was the main source of income for just over a third of pre and post broadcast respondents
- For just over 20%, the main source of income came from chickens
- However, the post-broadcast sample contained fewer farmers whose main source of income came from dairy cows (13% or 130) compared with the pre-broadcast sample (20% or 200).
- Very few farmers in either sample claimed to generate most of their income from potatoes, tomatoes, beans or fruit trees.

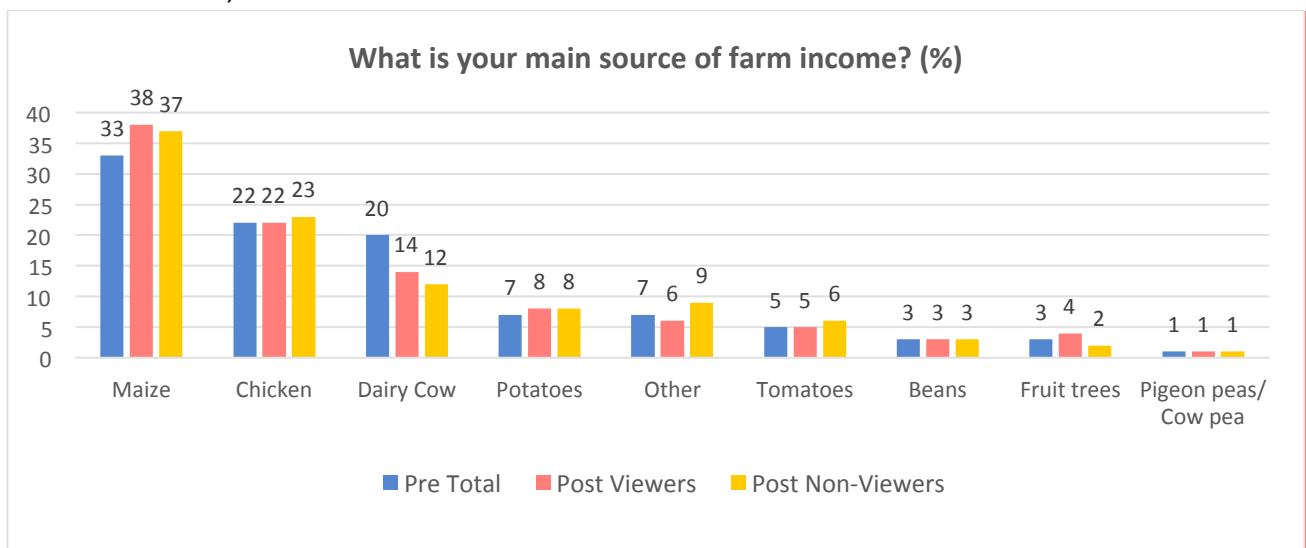


Figure 3: Main source of farm income



# MAIN FINDINGS

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## SECTION 1: TELEVISION VIEWING

### 1.1 Audiences to *Shamba Shape Up 10*

GeoPolls's regular Audience Measurement Survey (AMS), used by the broadcasting industry in Kenya, shows that SSU 10 attracted audiences of just under 2 million viewers each week to its Saturday afternoon English broadcasts and around 2.2 million viewers to its Sunday afternoon broadcasts in Swahili (see Table 1). The Audience Measurement survey is conducted daily among a representative sample of adults aged 16+ across Kenya and uses GeoPoll's SMS survey technology. The survey is based on individuals, regardless of with whom and where they view television. To be included in the audience for SSU 10 a respondent must claim to have watched Citizen TV on the days and during the times that SSU 10 was broadcast. The week by week viewing figures are detailed in the tables below.

In the KAP surveys, commissioned by Mediae, conducted by GeoPoll and based on a different and independent sample from the AMS sample, those farmers who claim to view the programmes are asked if they watch the programmes alone or with others.

**In an attempt to combine these two sources of data and arrive at an estimate of the total weekly reach of the programme the following assumptions have been made:**

1. An estimate of the amount of audience overlap between the Saturday and Sunday broadcasts – of 18% (i.e. 82% only watch one language)
2. An average of each viewer watching with one other, based on the estimates derived from the SSU 10 KAP study: 11% alone; 75% with 2-4 others; 12% with 5 to 8 others and 1% with 9+ others

**Working with the Kenya Bureau of Statistics to translate the weekly audience averages into weekly audience reach figures the following calculations have been made:**

1. 82% of 2million + 2.2 million = 3.4 million average weekly audience
2. Multiply the average weekly audience by 2 (a conservative estimate) to account for co-viewing, gives a **total weekly reach of at least 6.8 million adults aged 16+ in Kenya**

Table 1: Week-to-week Viewership Shamba Shape Up Series 10

Citizen TV Viewership 22nd February - 20th September 2020 Saturday 1:30PM - 2:00PM (SSU English)		Citizen TV Viewership 22nd February - 20th September 2020 Sunday 1:30PM - 2:00PM (SSU Kiswahili)	
Date	Average Audience	Date	Average Audience
19-Sep-20	2,063,000	20-Sep-20	2,247,000
12-Sep-20	1,769,000	13-Sep-20	1,894,000
05-Sep-20	1,912,000	06-Sep-20	2,606,000
29-Aug-20	1,828,000	30-Aug-20	2,438,000
22-Aug-20	1,769,000	23-Aug-20	1,746,000
15-Aug-20	1,838,000	16-Aug-20	1,136,000
08-Aug-20	1,465,000	09-Aug-20	2,522,000
01-Aug-20	2,003,000	02-Aug-20	1,994,000
25-Jul-20	1,344,000	26-Jul-20	2,114,000
18-Jul-20	1,268,000	19-Jul-20	2,280,000
11-Jul-20	1,774,000	12-Jul-20	1,916,000
04-Jul-20	1,693,000	05-Jul-20	2,170,000
27-Jun-20	1,757,000	28-Jun-20	2,226,000
20-Jun-20	2,306,000	21-Jun-20	1,982,000
13-Jun-20	3,058,000	14-Jun-20	2,536,000
06-Jun-20	2,595,000	07-Jun-20	2,298,000
30-May-20	1,786,000	31-May-20	2,540,000
23-May-20	2,384,000	24-May-20	2,409,000
16-May-20	1,641,000	17-May-20	2,793,000
09-May-20	1,856,000	10-May-20	1,721,000
02-May-20	2,472,000	03-May-20	2,144,000
25-Apr-20	2,113,000	26-Apr-20	2,680,000
18-Apr-20	2,296,000	19-Apr-20	1,954,000
11-Apr-20	2,768,000	12-Apr-20	2,691,000
04-Apr-20	1,246,000	05-Apr-20	1,978,000
28-Mar-20	1,720,000	29-Mar-20	2,808,000
21-Mar-20	2,846,000	22-Mar-20	2,826,000
14-Mar-20	1,584,000	15-Mar-20	1,623,000
07-Mar-20	1,610,000	08-Mar-20	2,968,000
29-Feb-20	2,357,000	01-Mar-20	1,866,000
22-Feb-20	2,541,000	23-Feb-20	1,680,000
<b>Weekly average*</b>	<b>1,991,000</b>	<b>Weekly average</b>	<b>2,227,000</b>

\* Calculations made to account for co-viewing, gives a total weekly reach of at least 6.8 million adults aged 16+.

## 1.2 Viewing among Survey Respondents

To be included in the surveys respondents had to have either in-home access to a working television or access to a neighbour's television set. The vast majority of series 10 viewers (89%) reported having in-home access to television with a lower, but still large proportion (73%) of non-viewers having in-home access. Not having a television at home may be one reason why non-viewers fall into that category.

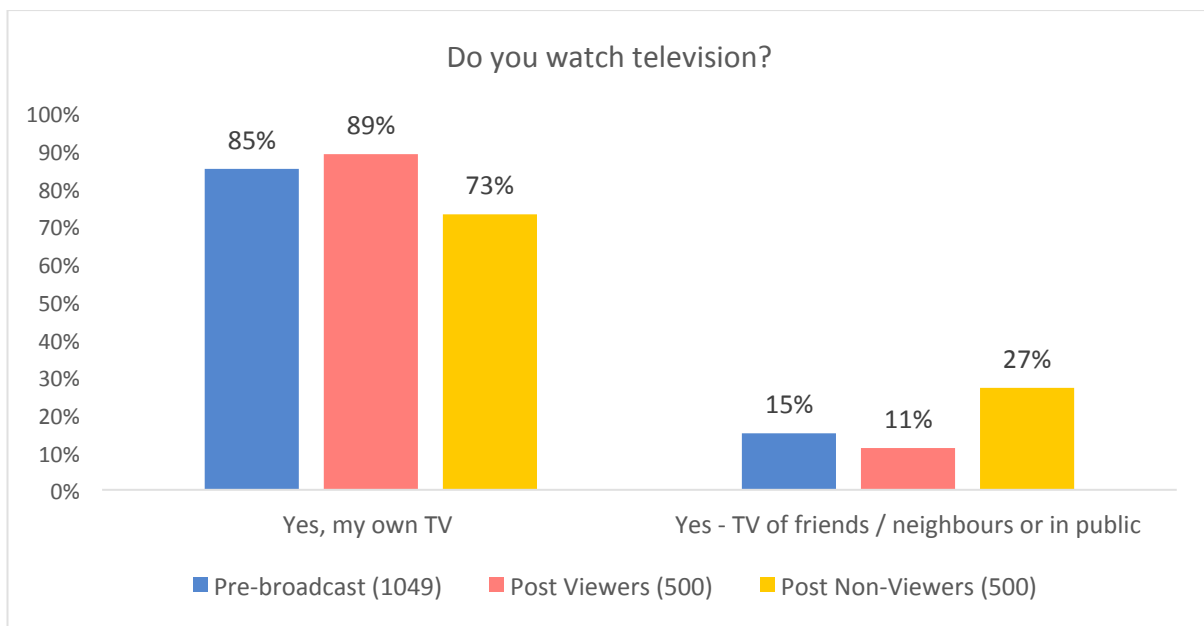


Figure 5: Do you watch television?

*Shamba Shape Up* is viewed by several members of a household and is the kind of television that brings people together. Three quarters (75%) of the pre-broadcast respondents who claimed to watch SSU claim to do so with between two and four other people; only one in ten said they watched alone. It is widely known and evidenced that co-viewing has an impact on the recall and effectiveness of television content and messages.

## 1.3 Sources of agricultural information

The majority (57%) of *Shamba Shape Up* viewers said they found TV to be 'the most useful source of agricultural information', compared with only three in ten non-viewers. Other useful sources are the Internet – just under a quarter of viewers and non-viewers alike find this source important. Radio, as a source of farming information is diminishing in importance, but favoured slightly more by non-viewers of SSU (16%) than viewers (7%). Interestingly, mobile phones have not yet cut through as an important source, but again favoured slightly more by non-viewers (12%) than viewers (5%). Very few respondents get their farming information from the once traditional sources of newspapers, agro-dealers and vets.

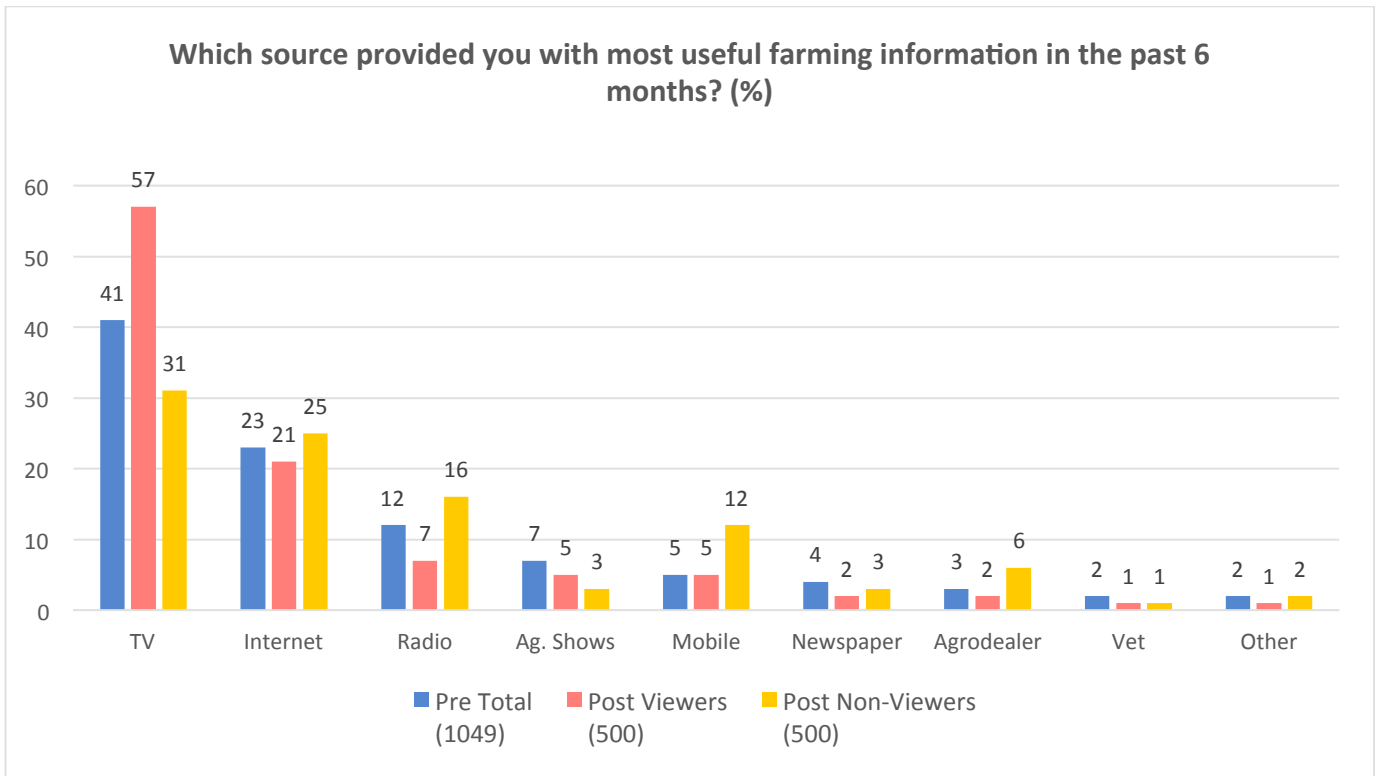


Figure 5: Sources of farming information

### 1.3 Other farming TV programmes watched

There is a considerable degree of overlap between watching SSU and watching other television programmes on farming matters. The most popular shows viewed in addition to SSU are *Kilimo Bashara* (40-50%) and *Seeds of Gold* (around 30%)

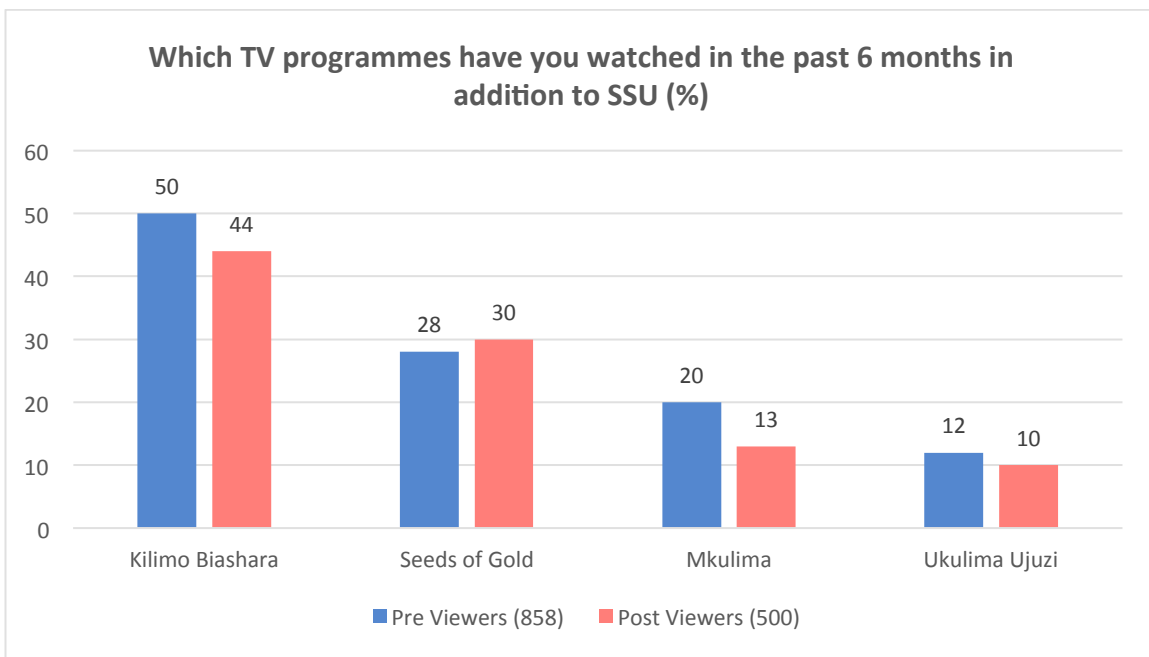


Figure 6: TV programmes watched in past six months

## SECTION 2: CHANGES IN KNOWLEDGE, ATTITUDES AND PRACTICES ATTRIBUTABLE TO SSU 10

### 2.1 Knowledge gained from watching SSU

**Almost all (96%) SSU 10 viewers said they had learnt something new from watching the programmes.** Almost three quarters of viewers remembered seeing content on harvesting and storage (62%), with around four in ten recalling content on sweet potatoes and cooking appliances. Fewer viewers said they could remember anything about avocado farming (28%), insurance (25%) or trees (17%). Levels of recall are closely linked with the farming interests and activities of those sampled and also the amount of coverage devoted to all the different topics.

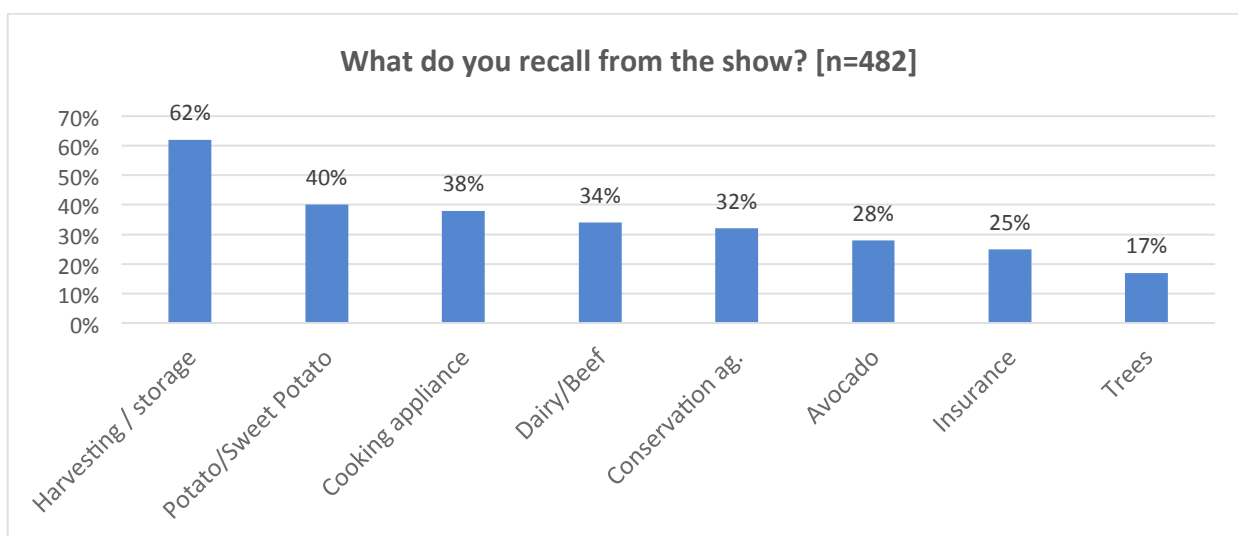


Figure 7: What do you recall from the show?

Topics of **interest for future series** are a good indication of the issues farmers would like to have more knowledge and information about. Suggestions ranged from widely requested topics on pests and disease (48%), livestock (45%) and insurance (43%) through to the less frequently requested topics of trees (26%), cooking (25%) and weather (25%). However, even those topics of lesser overall appeal still attracted levels of interest of around one quarter of farmers.

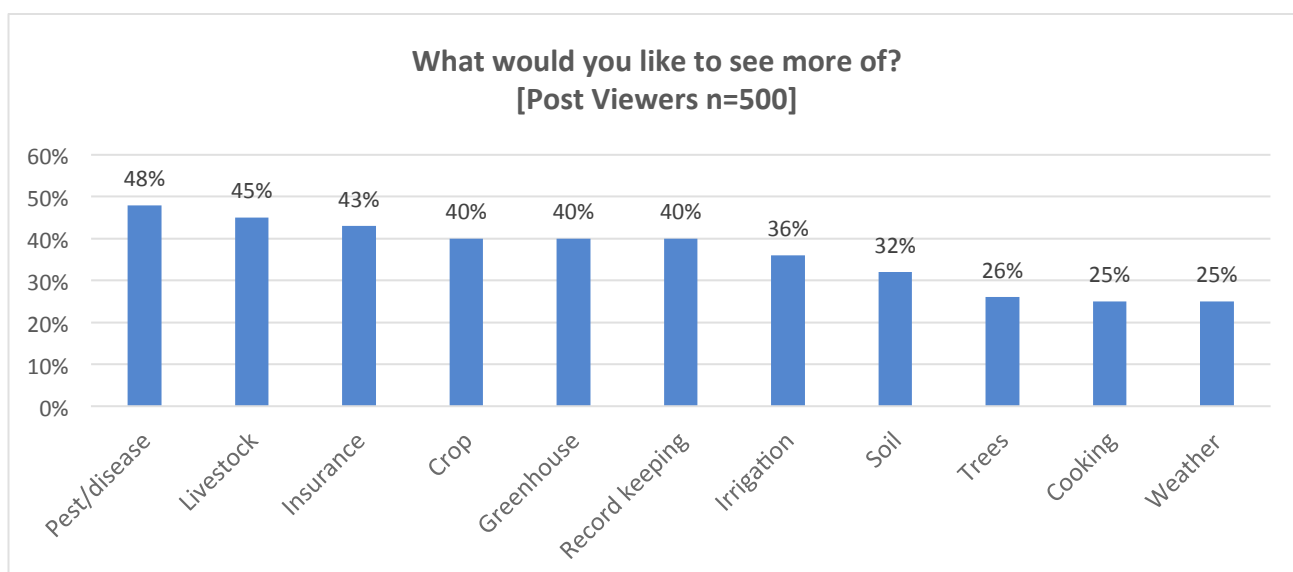


Figure 8: Future programme topics

## 2.2 Changes in attitudes and practices attributable to SSU 10

**Almost all viewers (93%) said they made changes to their farming practices as a result of watching the series.** The power of SSU to change and influence farming practices is well illustrated by the chart below. Deeply entrenched and traditional farming and cooking practices and habits are notoriously difficult to change, yet as many as three quarters (75%) of SSU 10 viewers said they had changed their harvesting and storage practices for maize and beans and over a third said they had changed how they feed their cows (36%) and grow sweet potatoes (35%) as a result of watching the series. Even as many as one quarter said they had changed the way they till their land and changed their cooking appliances. The impact of the series in giving farmers new knowledge and changing their practices is clearly evidenced in this study.

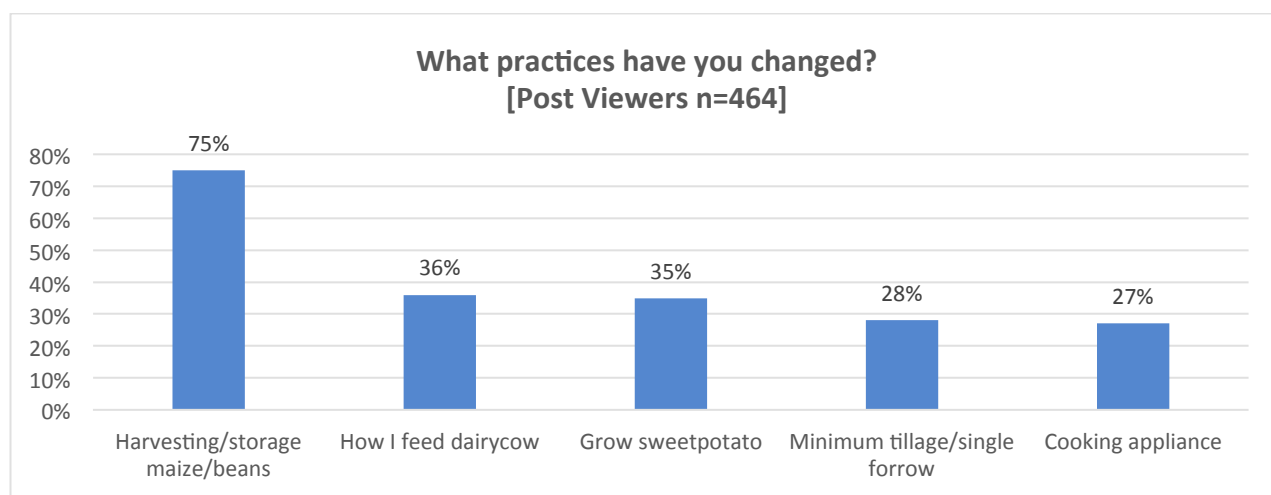


Figure 9: Practices changed

## 2.3 Anticipated results of changes farmers have made

**The most anticipated result of the changes made in the farm following watching SSU 10 was that of improving yields both for income generation (63%) and for greater household food security (34%).** In future studies it would be very useful to understand more about the actual changes in income resulting from changed practices after viewing SSU.

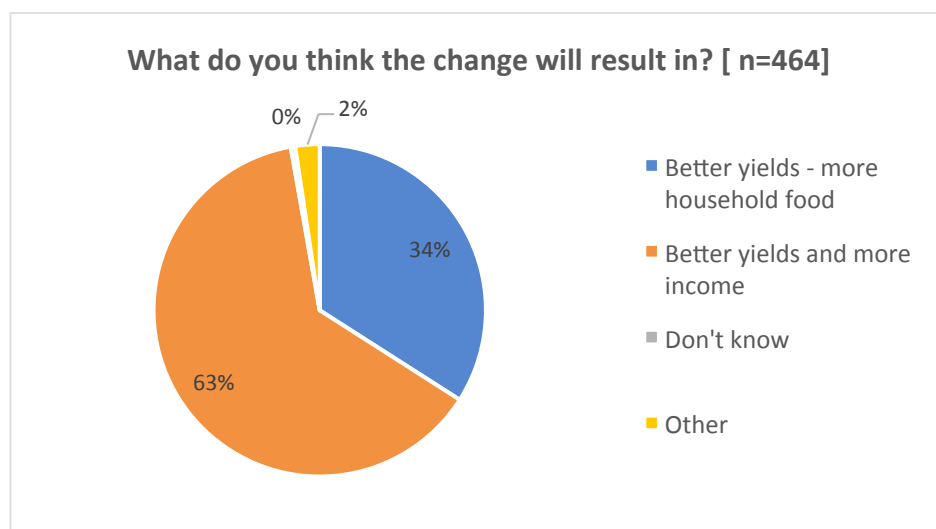


Figure 10: Result of changes

## SECTION 3: PLANTING

### 3.1 Seeds used when planting maize or sweet potatoes

A key and consistent message in SSU is the importance of using improved or certified seeds for improved quality and better yields. The message is certainly being received by farmers; two-thirds of whom now say that they use improved or certified seeds in preference to traditional varieties or recycled seeds. The stand-out difference in the data is between SSU 10 viewers and non-viewers. A significantly lower proportion of non-viewers choose to use improved or certified seeds as compared with their viewing counterparts and the reverse is true for the use of traditional varieties. This difference certainly points to the effect that SSU is having on changing planting and seed practices

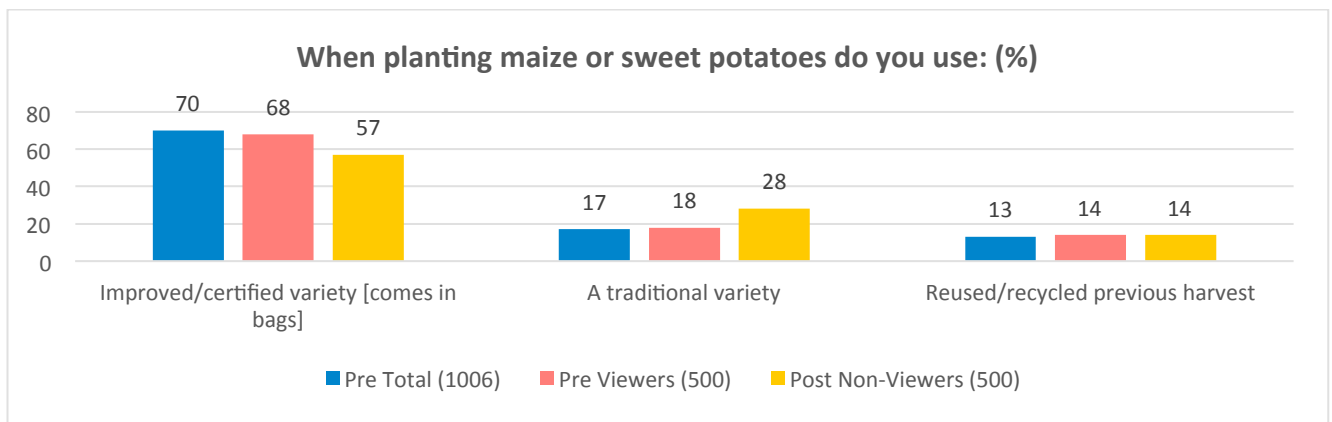


Figure 11: What is used when planting maize or sweet potatoes

### 3.2 Fertilizer used when planting

The standout finding in respect of the use of fertilizers when planting is that SSU 10 viewers were more likely to use all of the types of fertilizers covered in the study than were non-viewers. There are marked differences between the two groups across the board especially for: DAP, Manure and CNN. Almost six in ten viewers said they used DAP compared with 50% of non-viewers (six percentage point difference); 51% viewers used manure compared with 41% non-viewers (11 percentage point difference) and 26% versus 18% used CAN.

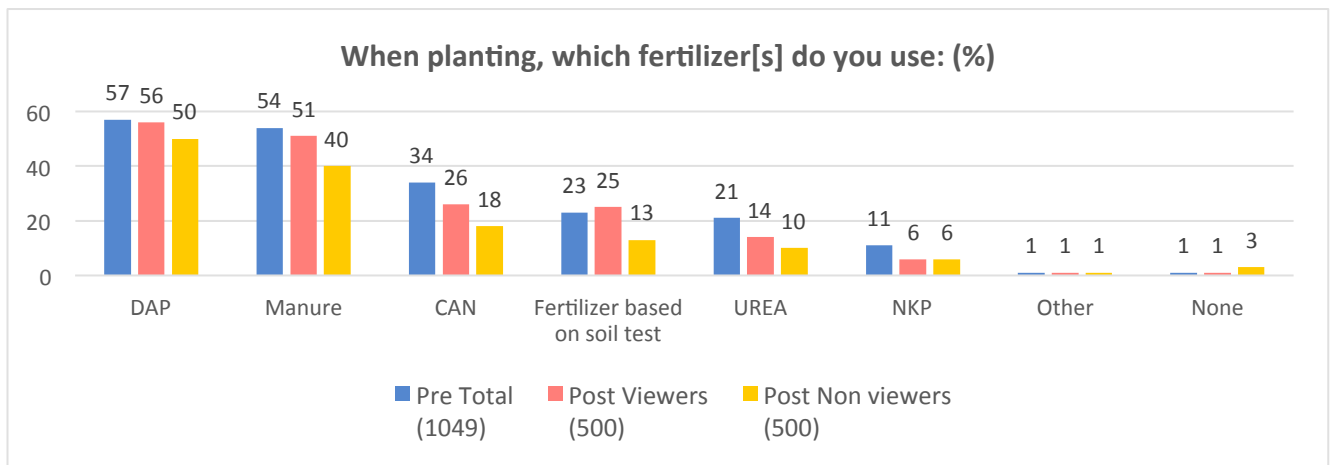


Figure 12: Fertilizer used for planting

## SECTION 4 ANIMAL FEEDS

### 4.1 Milk production

Around 70% of both pre-broadcast and post-broadcast farmers said that they kept dairy cows, although relatively few said that their main source of income was from cows (20% pre-broadcast and 13% post-broadcast).

Of those who kept cows in the pre-broadcast survey, similar proportions of around one third (32%) reported that their cows generated 1-5 litres per day or 6-12 litres per day. With one in ten saying they generated 13-25 litres. The noteworthy difference in the post SSU 10 sample was that a higher proportion of viewers said each cow generated 1-5 litres per day (37%) and a smaller proportion yielded 6-12 litres (27%). It is likely that these differences can be accounted for by sample variation. A true longitudinal sample would be needed to explain any other factors, including viewing SSU 10, to these differences.

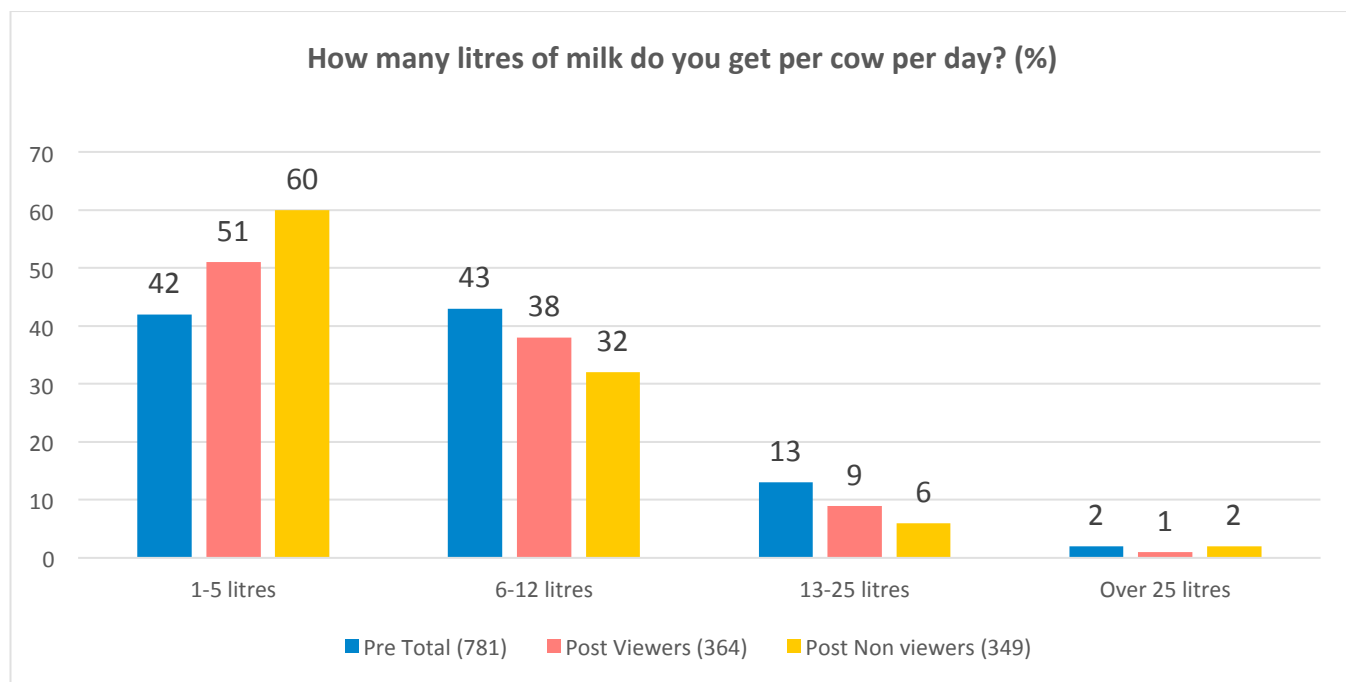


Figure 13: Litres of milk per cow per day

### 4.2 Importance of proteins and supplements

**Knowledge and attitudes about the benefits of giving proteins and supplements to cows has increased significantly as a result of viewing SSU 10.**

- The benefit of increased milk yield increased by 15 percentage points between the pre-broadcast sample and SSU 10 viewers
- The benefit of having stronger cows increased by 26 percentage points, from 15% pre-broadcast to 43% among SSU 10 viewers
- The benefit of protecting the cows from disease rose from 14% pre-broadcast to 39% among viewers – an increase of 25 percentage points



- The benefit of the cows coming on heat faster went up from 8% to 21% a rise of 13 percentage points
- Ease of becoming pregnant increased from 4% to 18% a rise of 14 percentage points

**It is clear to see from these impressive before and after changes the impact that SSU10 has had on educating farmers about the benefits of proteins and supplements on their cows.**

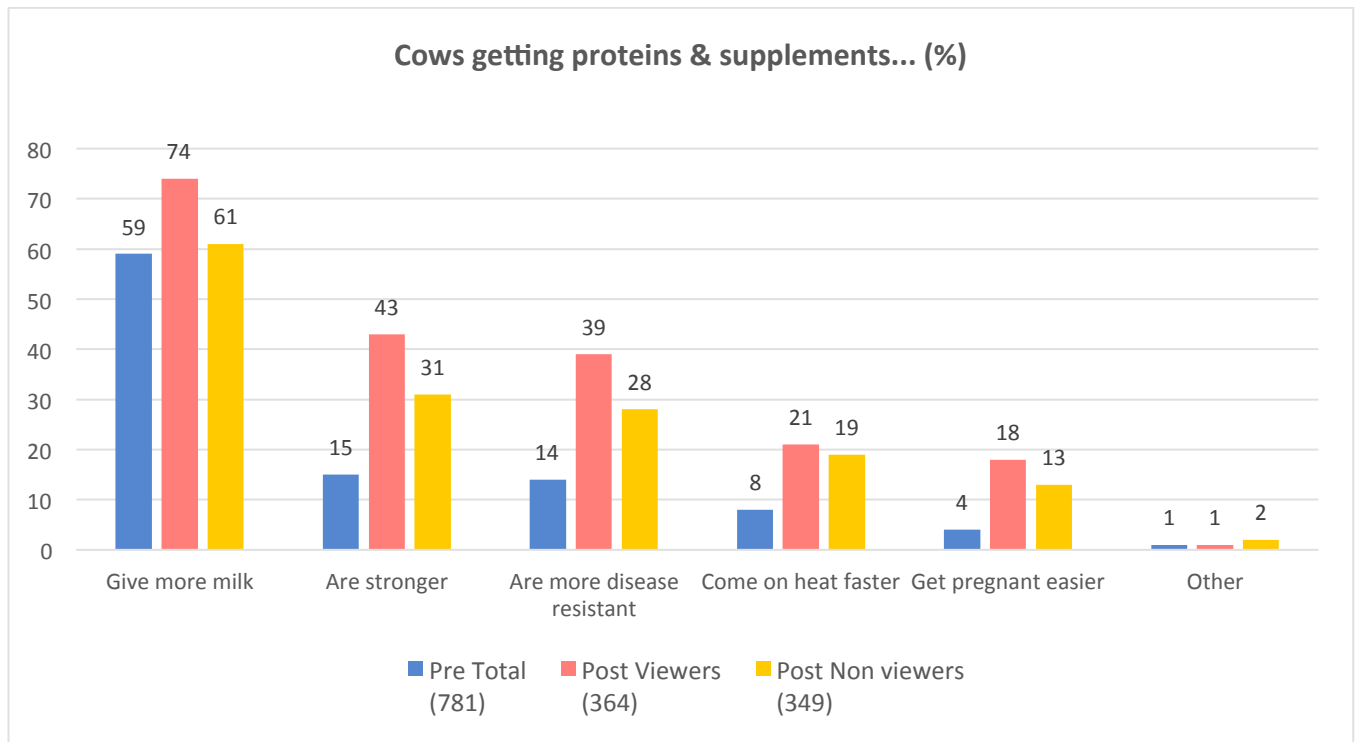


Figure 14: Proteins and supplements for cows

### 4.3 Cow feed

The vast majority (around 80%) of cattle farmers feed their cows on napier and hay. A higher percentage of SSU 10 viewing cattle farmers (87%) feed their cows with napier and hay than non-viewers (75%). Looking across the other types of feed and supplements there is a clear pattern of greater use among SSU 10 viewers than non-viewers:

- Protein supplements + 22 percentage points
- Minerals and salts +21 percentage points (over one half of SSU 10 viewers are giving their cows minerals and salts compared with one third of non-viewers)
- Bought animal feed +16 percentage points
- Silage +13 percentage points
- Maize meal + 12 percentage points
- Vitamins and shrubs +7 percentage points

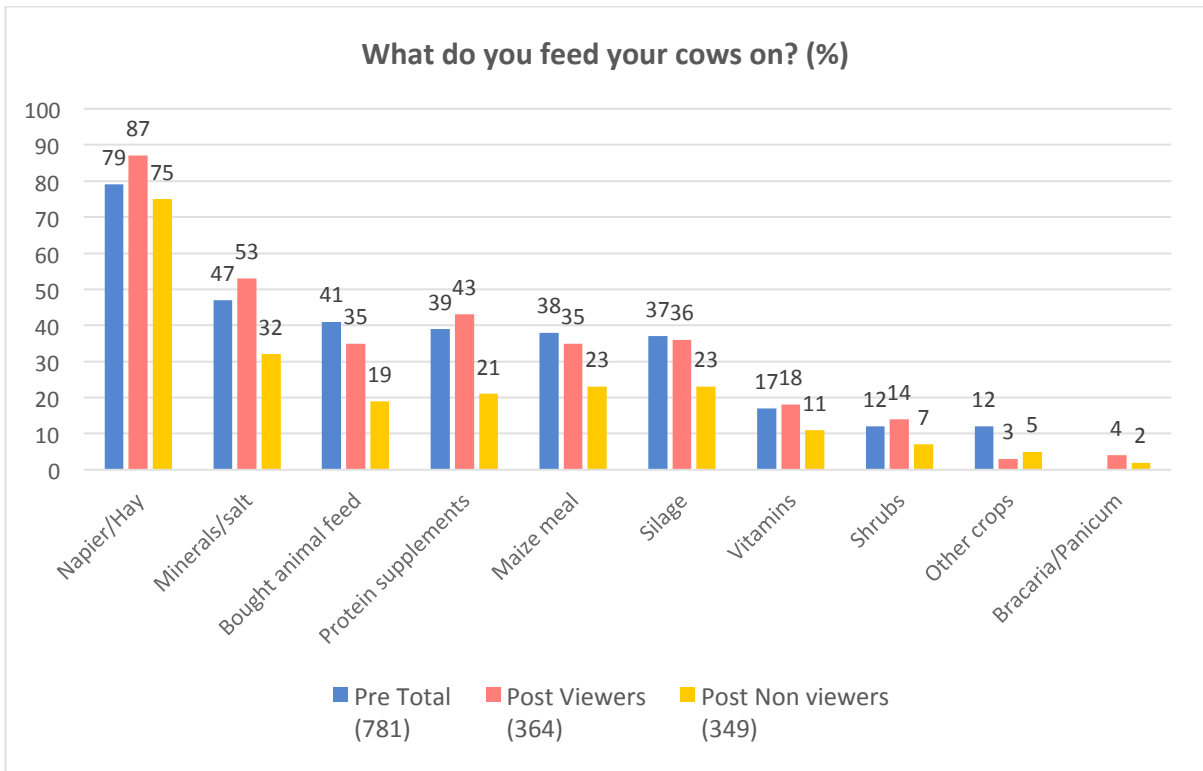


Figure 15: Cow feed

#### 4.4 Bringing a cow into heat

The vast majority of cattle farmers know how to bring a cow into heat, with just over four in ten saying that giving them a certain type of feed will work and similar proportions saying that the vet can give it an injection. Considerably more SSU 10 viewers than non-viewers were aware of the injection method (48% of viewers name this method compared with only 35% of non-viewers).

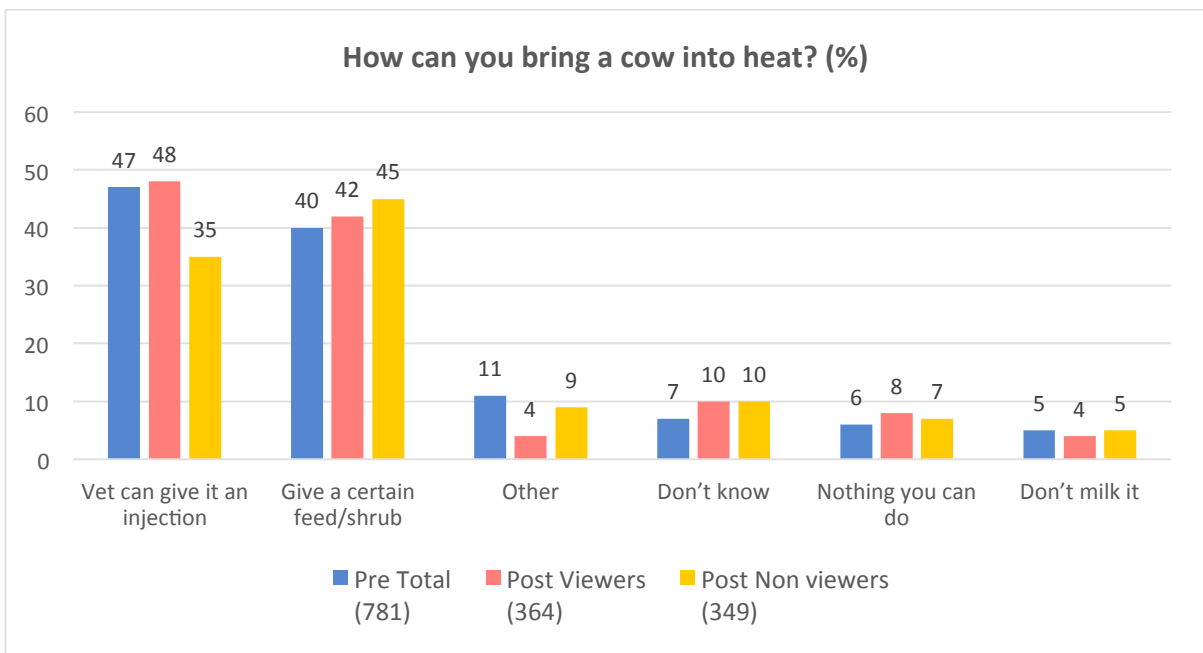


Figure 16: How to make a cow on heat

There is considerable evidence from these few questions relating to keeping, feeding and improving yields from dairy cows that levels of awareness, attitudes and practices have been changed by SSU 10 and that farmers who have been exposed to the series are more likely to feed and look after their cows better.

## SECTION 5: FALL ARMY WORM (FAW)

### 5.1 Loss of crops due to Fall Army Worms

Fall army worm is a major problem for crop farmers. Over one half of farmers said they had lost crops to fall army worm in the past season – the differences in incidence between SSU 10 viewers and non-viewers was minimal. The volumes of crops typically lost due to fall army worms is up to half of the crop for almost half of crop farmers. Just less than 10% said they lost more than half their crop this way.

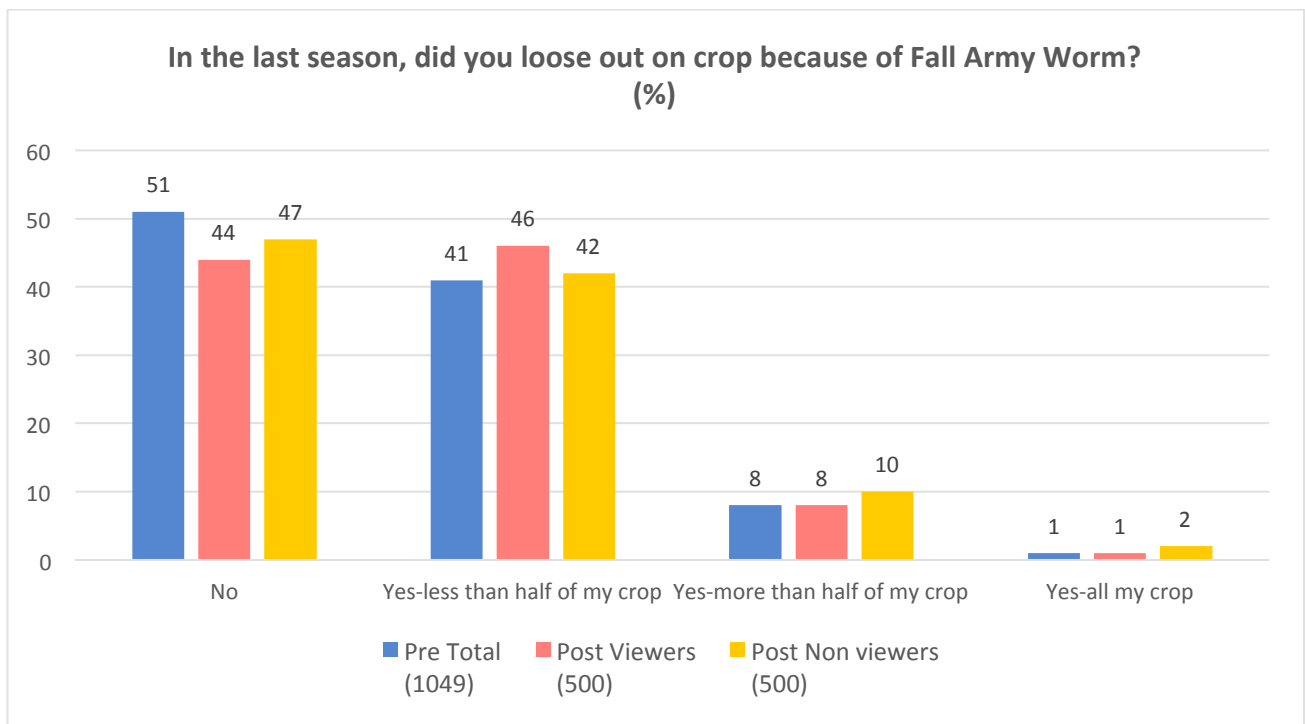


Figure 17: Loss of crops due to FAW in last season

### 5.2 Spotting Fall Army Worms

SSU 10 appears to be effective in imparting knowledge about how best to spot fall army worms. Three quarters of SSU 10 viewers would look for holes on maize leaves, compared with six in ten non-viewers and more viewers than non-viewers would look for clear patches on the leaves.

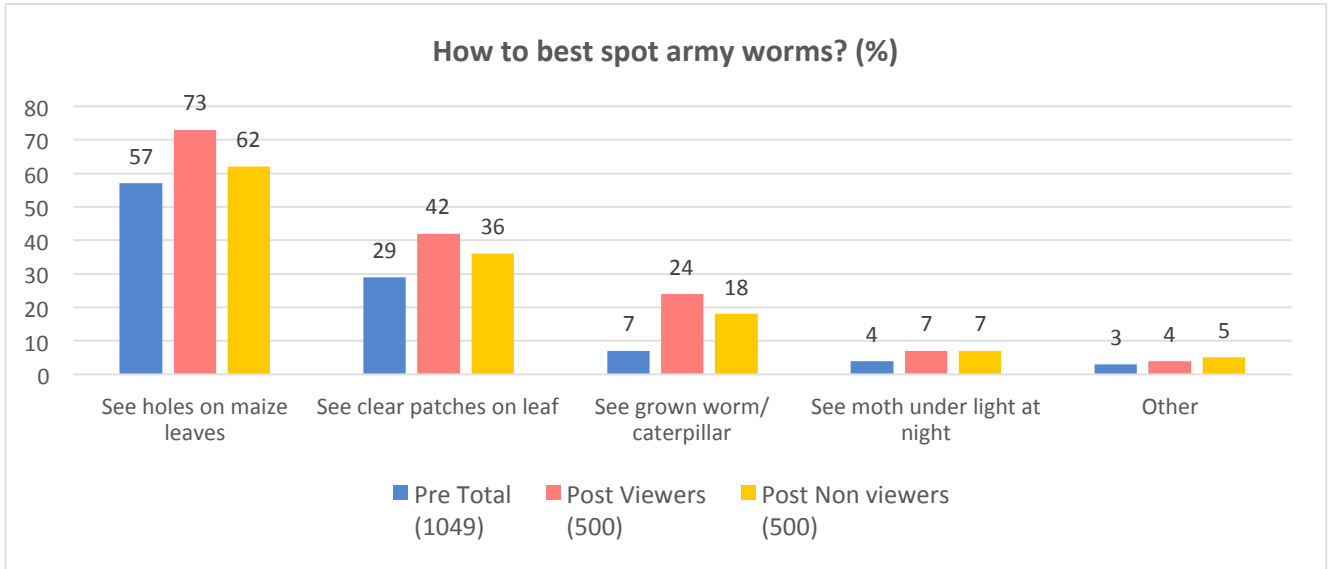


Figure 18: How to spot army worms

### 5.3 Removing Fall Army Worms

The most used methods of removing fall army worms was insecticides (between six and seven in ten farmers) and ash (around one quarter) although neither of these methods was promoted in SSU10. The prompted message was the push pull method, which was used by very few viewers and non-viewers alike. Interestingly, this is one of the few recommended practices promoted in the series which had little take-up or impact on viewers. This speaks to the need to promote the push pull method in future series and demonstrate its efficacy over insecticides and ash.

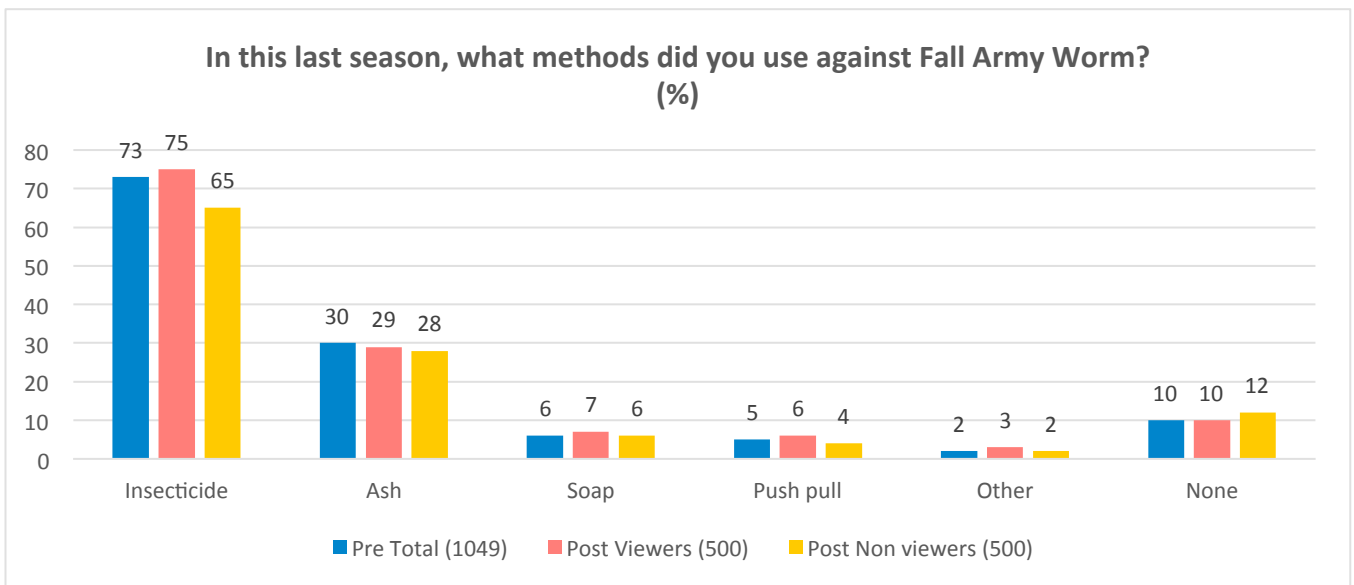


Figure 19: Army worm removal method in last season

## SECTION 6: CONSERVATION AGRICULTURE

### 6.1 Soil conservation practices

All of the farmers surveyed had heard of soil conservation practices, with most having heard of the three most common practices namely – crop rotation, inter-cropping and mulching. Across the board, higher proportions of SSU 10 viewers said they were aware of these practices than were non-viewers – especially the practice of inter-cropping (64% viewers compared with 45% non-viewers). **The data show that SSU is having an effect on raising awareness of soil conservation practices as in all cases more viewers than non-viewers are aware**

Minimum tillage was known by considerably fewer viewers (16%) compared with crop rotation (82% viewers had heard of this) and mulching (59% of viewers had heard of this). These findings indicate the need for more programming content which promotes the use of minimum tillage and less emphasis on the widely known practice of crop rotation.

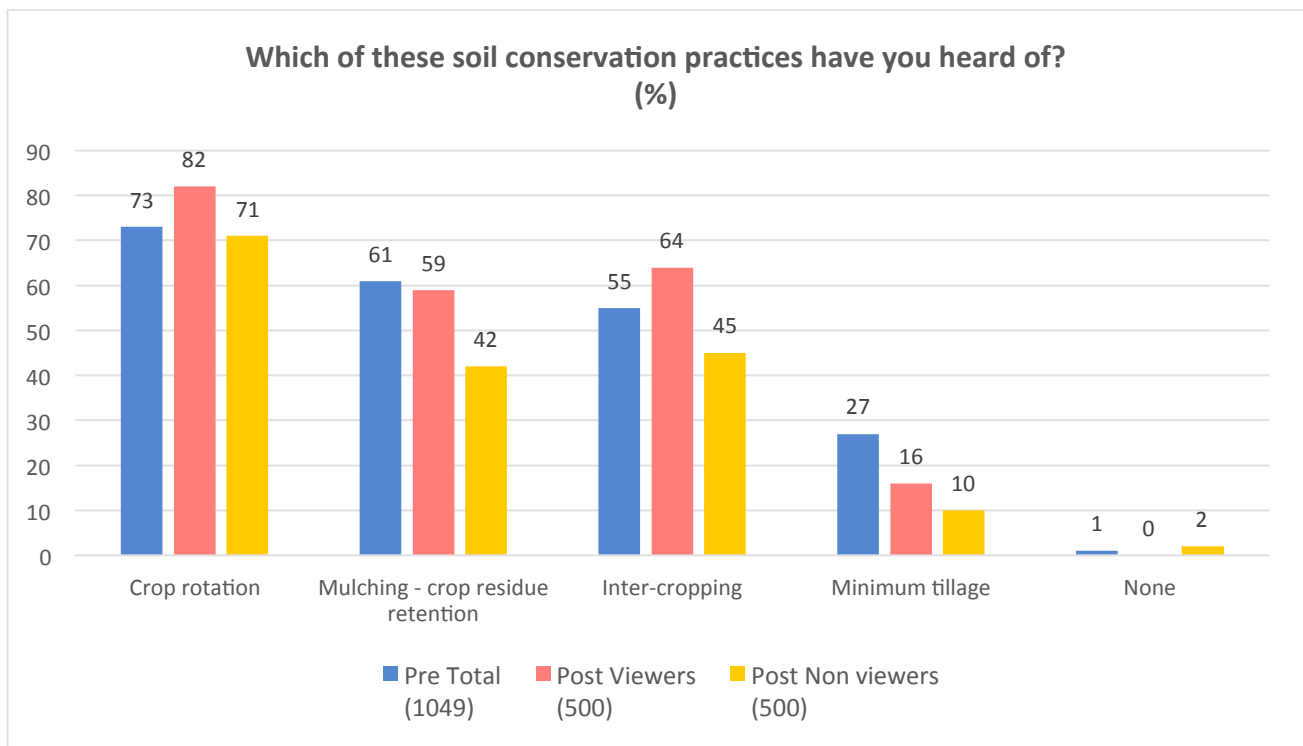


Figure 20: Soil conservation practices

### 6.2 Awareness of the usefulness of crop rotation

The majority of the farmers surveyed mentioned that crop rotation is useful to allow different nutrients to enter the soil – with a marked difference of 16 percentage points between SSU10 viewers (80%) and non-viewers (64%) illustrating effective messaging. A smaller, but still important percentage of farmers, regardless of whether or not they viewed SSU10, think that crop rotation is useful for preventing pests and diseases

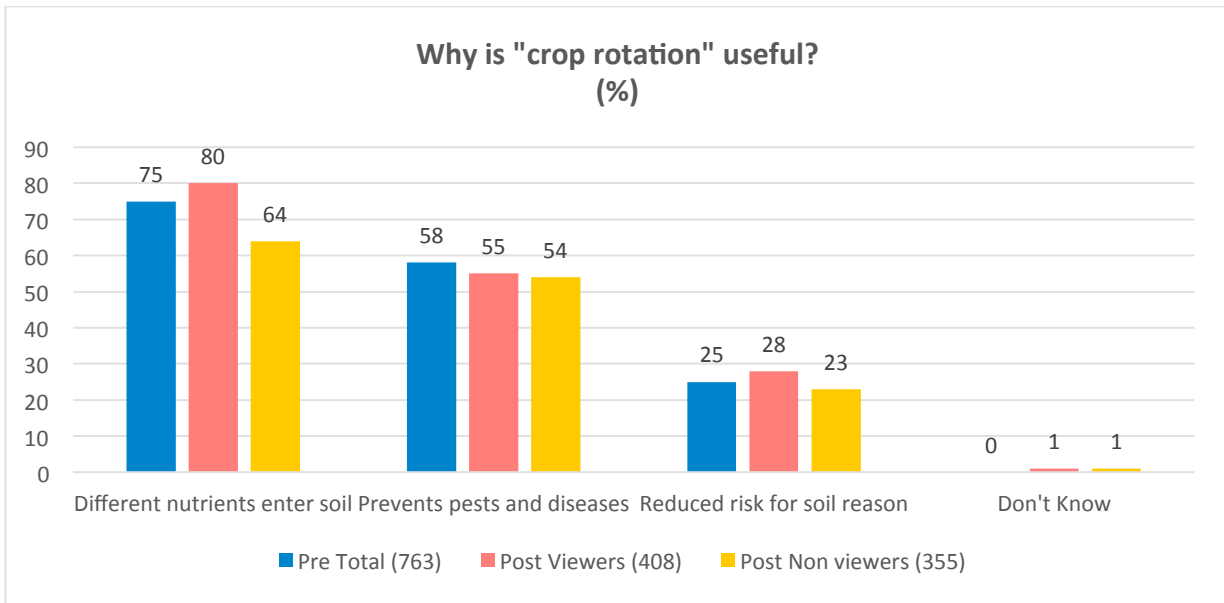


Figure 21: Why crop rotation is useful

### 6.3 Single furrow planting

Overall knowledge of the benefits of single furrow planting was considerably higher among SSU 10 viewers than non-viewers, suggesting that the messages covered in the series have increased knowledge and awareness. The messages about water retention were particularly well remembered by SSU 10 viewers.

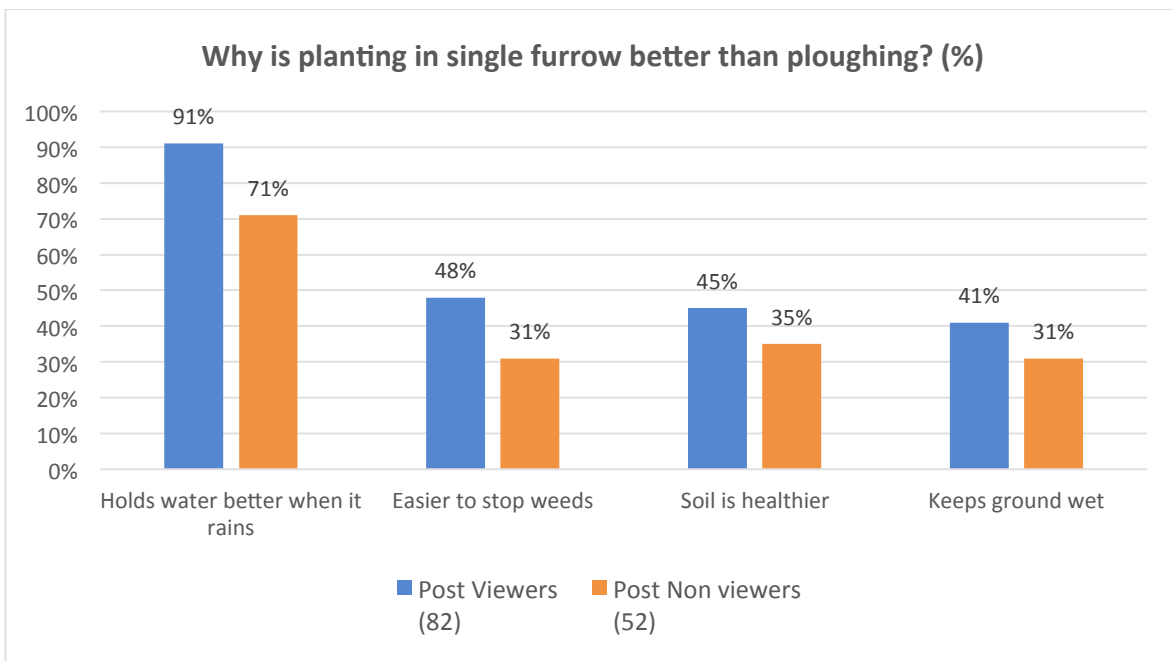


Figure 22: Why single furrow is better than ploughing

## 6.5 Adoption of soil conservation practices

There was an increase in the adoption of conservation soil practices among those farmers who have seen SSU10.

- Farmers who had viewed SSU 10 were much more likely to use crop rotation than their non-viewing counterparts (+11 percentage points)
- Similarly, they were much more likely to practice inter-cropping (+19 percentage points) and mulching (+17 percentage points)
- Utilising minimal tillage was also higher among SSU 10 viewers (16%) as compared with non-viewers (10%)

## SECTION 7: INSURANCE

### 7.1 Current insurance products

The most common type of insurance product owned by all the farmers surveyed was NHIF/ health insurance – with significantly more SSU 10 viewers (82%) than non-viewers (71%) saying they had it. The ownership of all the other types of insurance covered in the surveys was extremely low, hovering at around the 10% level although there is some evidence that the take-up of livestock and crop insurance is marginally higher among SSU 10 viewers than non-viewers

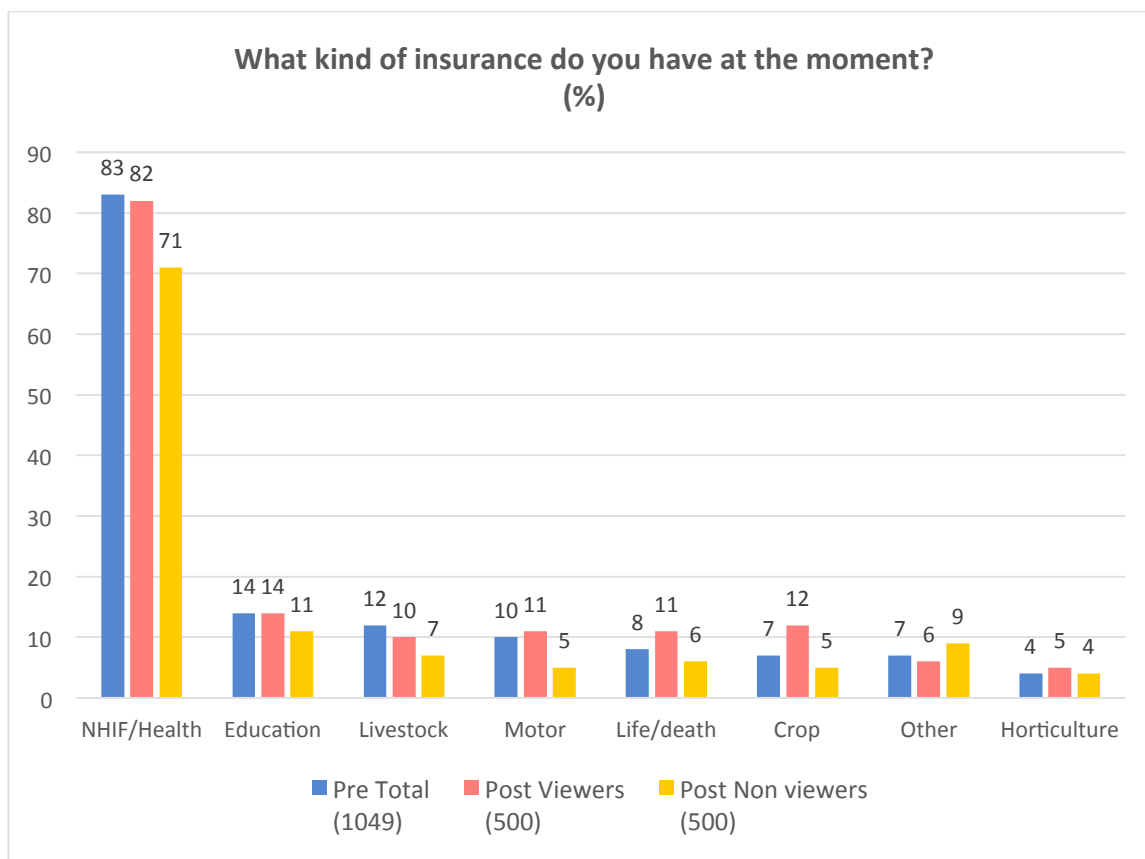


Figure 24: Current insurance type

### 7.2 Insurance purchase

The data on insurance purchase are extremely positive for SSU 10. A very high proportion (almost eight in ten) of viewers said that they purchased insurance as a result of watching SSU 10 – an illustration of the strength of the messages in the series. The same is true for the pre-broadcast viewers, who are likely to have seen the series 9 of Shamba Shape Up, in which crop and livestock insurance were also promoted.

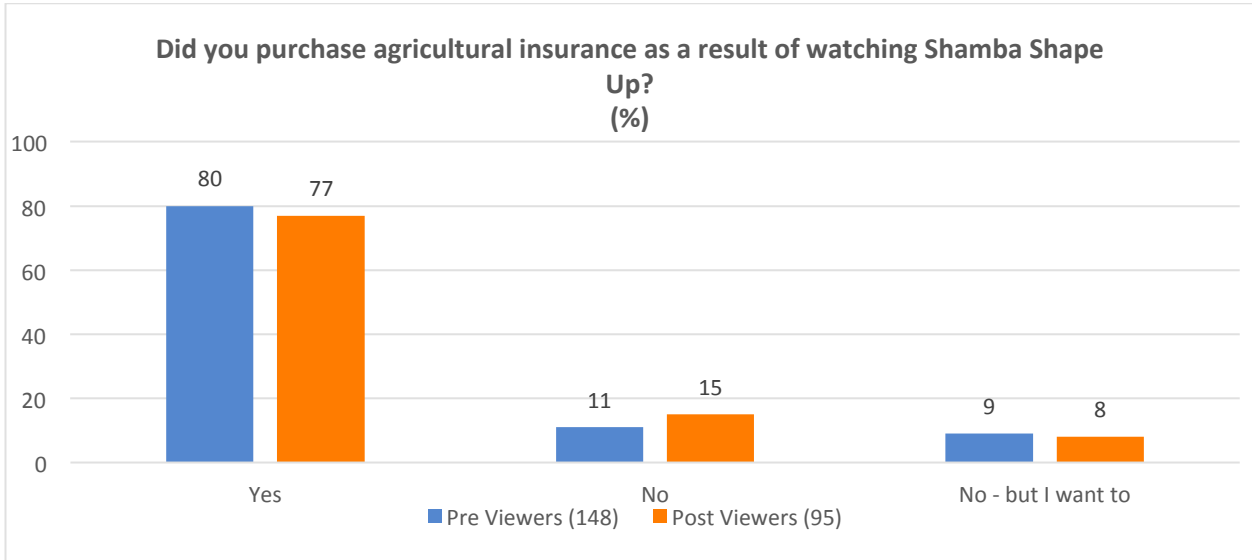


Figure 25: Purchase of insurance as a result of watching SSU

### 7.3 Reason for non-purchase of insurance

When asked reasons for non-purchase of crop/dairy insurance, around one half of the farmers said that they do not understand how insurance works. Around one quarter think that insurance is too expensive and there are elements of distrust. The data on reasons for non-purchase of insurance show no differences between viewers and their non-viewing counterparts.

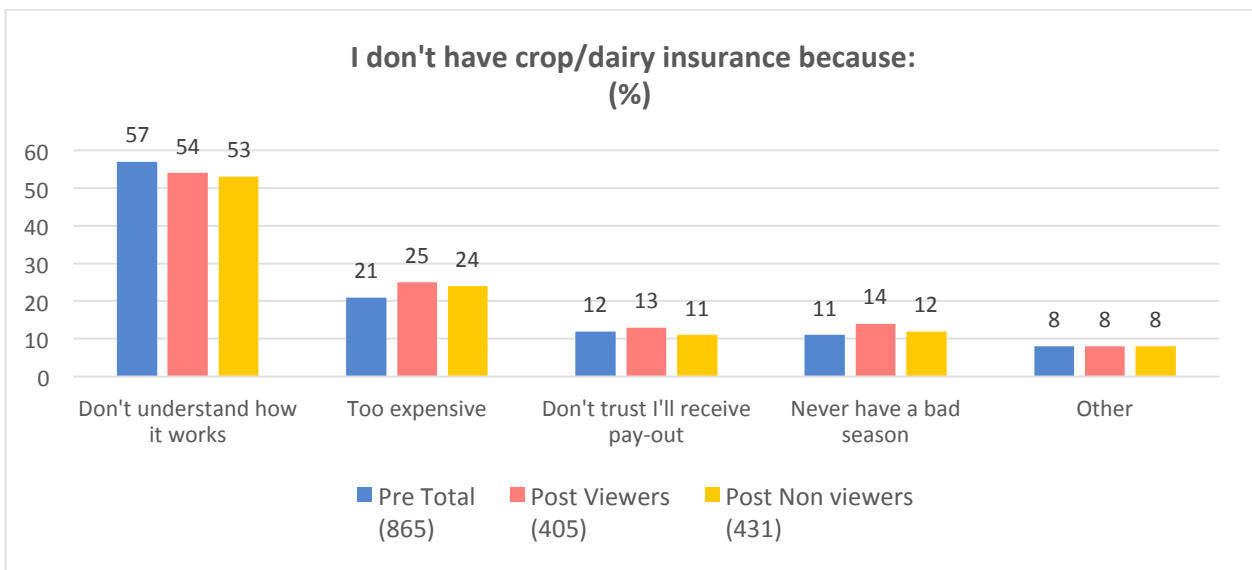


Figure 26: Reasons for not purchasing insurance



## SECTION 8: ORANGE FLESHED SWEET POTATO MANAGEMENT

### 8.1 Awareness of sweet potato flesh colours

The most well-known varieties are the white and the yellow flesh sweet potato, followed by the purple fleshed variety then the cream and last the orange. For all varieties SSU 10 viewers had higher levels of awareness than non-viewers – this was particularly true for the yellow fleshed variety, but less marked for cream.

**A higher number of viewers were familiar with the orange fleshed sweet potato (18%) compared to non-viewers (11%).** Nonetheless, as this variety is generally less known by respondents compared to the white, yellow and purple counterparts, producers of the programme might consider continuing to promote this variety on future programmes.

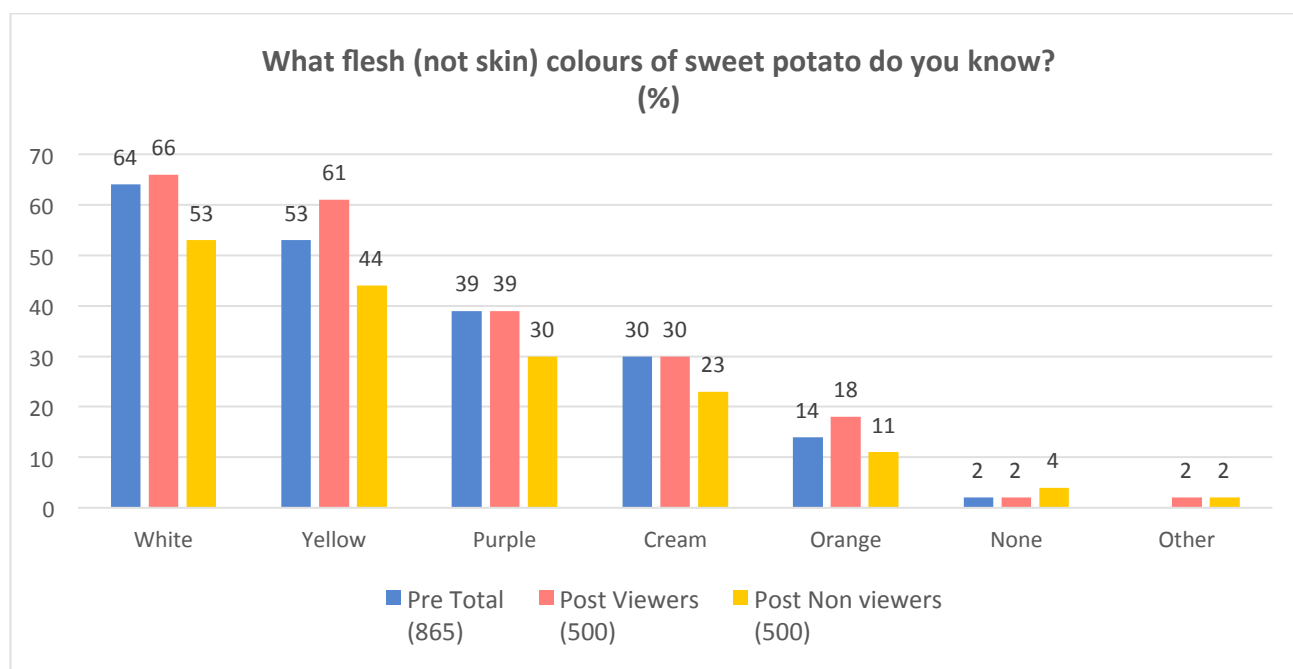


Figure 27: What colours of OFSP do you know?

### 8.2 Benefits of orange flesh sweet potatoes

The benefits of consuming orange flesh sweet potatoes are considered to be those of body development and eyesight, with income in third place. **Across all the benefits mentioned there was a marked difference between viewers and non-viewers, with the exception of income generation which was the same between the two groups.**

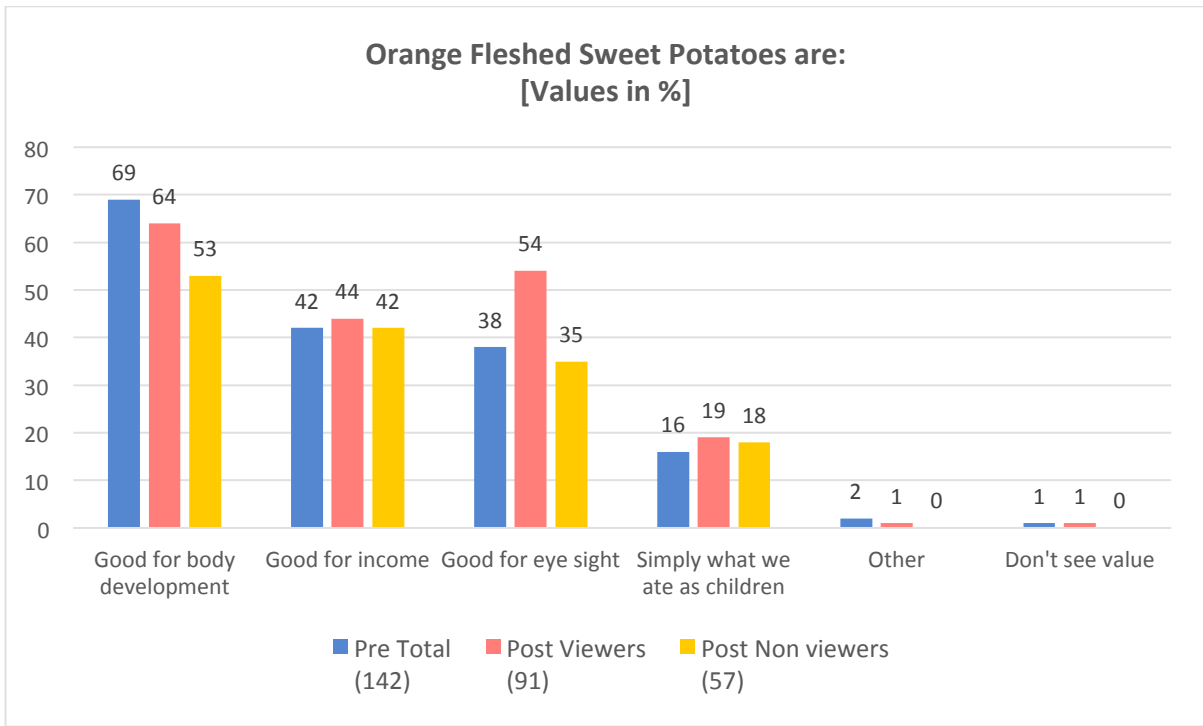


Figure 28: Benefits of orange flesh sweet potatoes

### 8.3 Source of orange fleshed sweet potato vines

Non-viewers were much more likely than viewers to source their orange fleshed sweet potatoes from their neighbours; viewers on the other hand were more likely to source from a certified distributor or re-use old ones. Re-using of vines is advisable only when the original vines were sourced from a certified vine distributor.

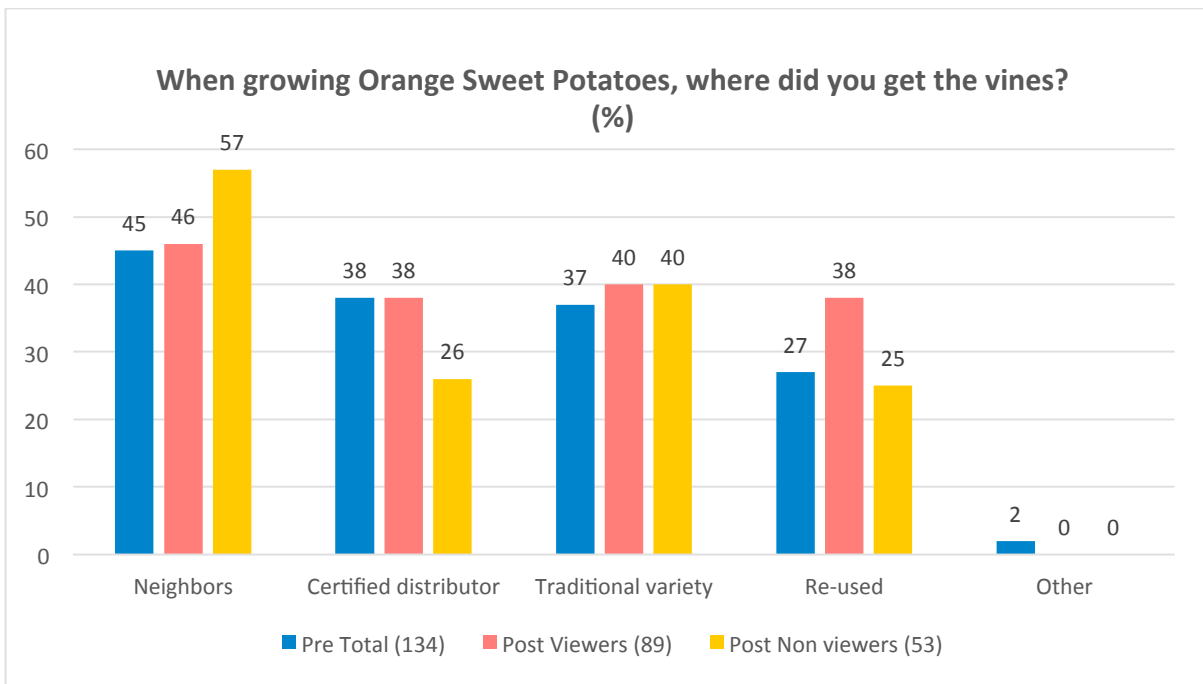


Figure 29: Sources of orange sweet potato vines

## 8.4 Uses of orange fleshed sweet potato harvest

A large majority of the farmers either consume their orange sweet potato harvest at home or sell them in the local market. SSU 10 viewers are more likely, in all cases - consuming, selling at local market, selling to a processor or supermarket (these latter two are very small) than are non-viewers.

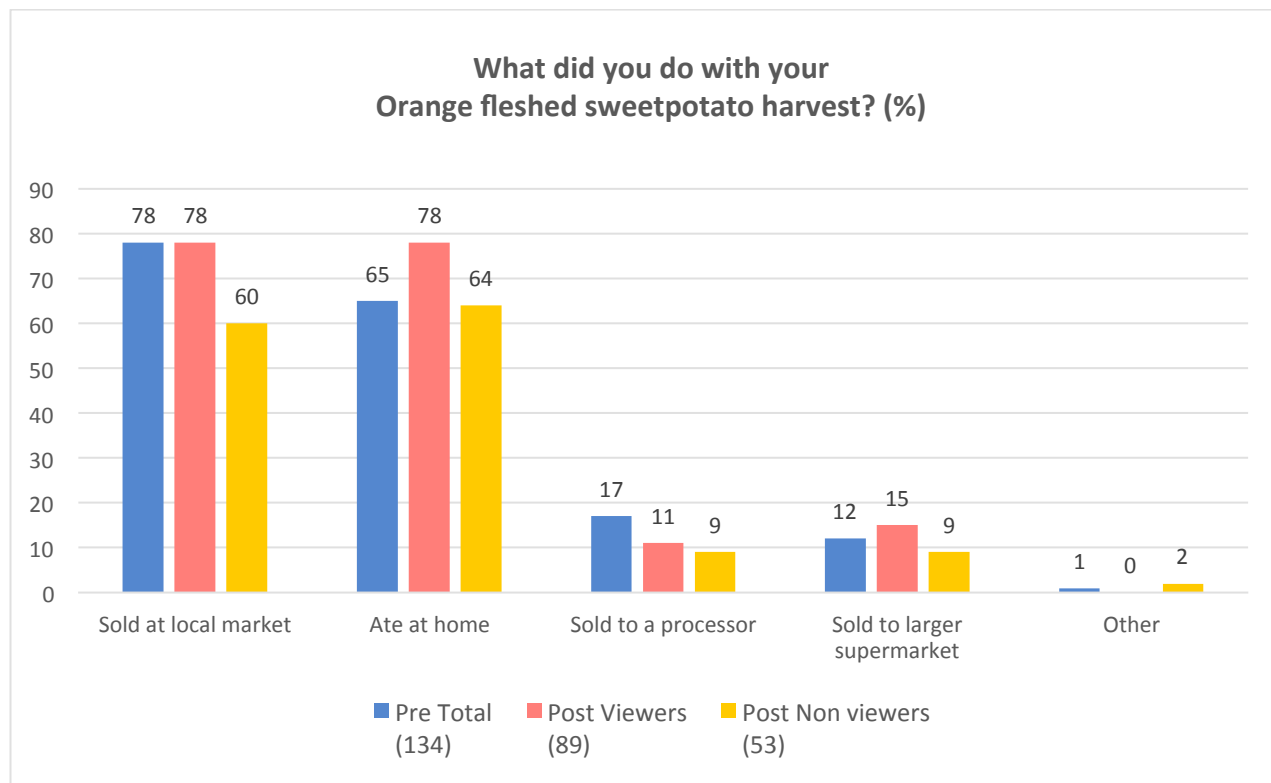


Figure 30: Uses of orange sweet potato harvest

## SECTION 9: HARVEST AND POST HARVEST MANAGEMENT OF CEREALS AND PULSES

### 9.1 Cereals and pulses spoil in last season

A very high proportion, approximately three quarters, of the farmers in our surveys reported cereal and pulse spoilages in the past season with just over 50% estimating that one quarter or less of their harvest was spoilt. There were relatively marginal differences in reported spoilages between SSU 10 viewers and non-viewers – with a very slight indication that viewers estimated smaller losses than non-viewers

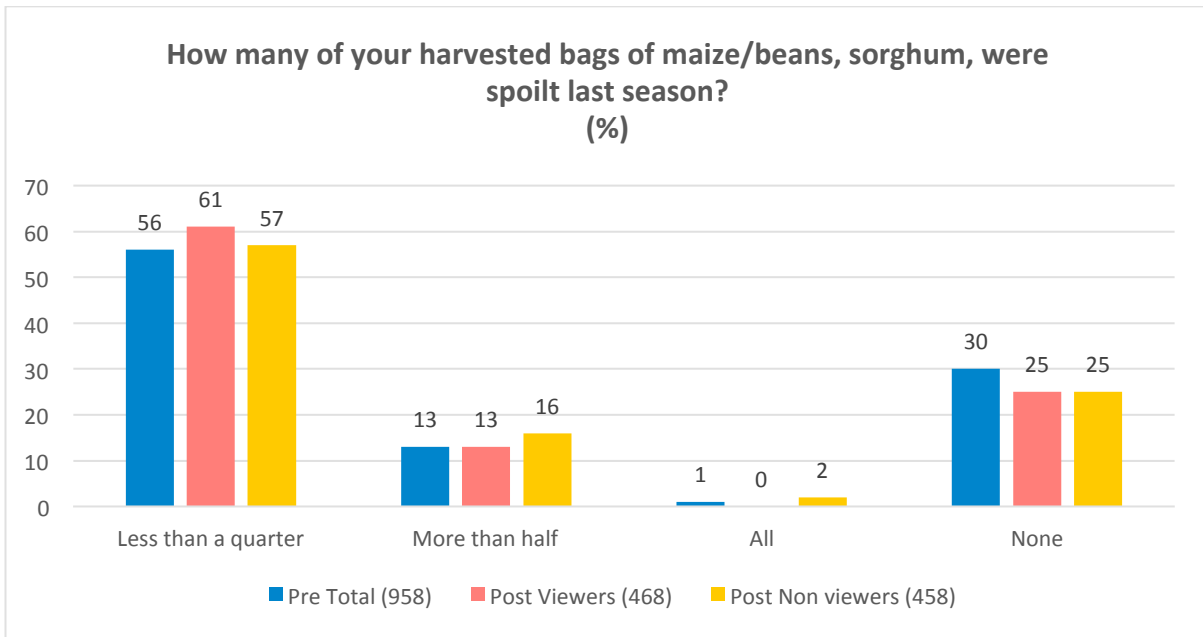


Figure 31: How many harvested bags were spoiled

### 9.2 Reasons for grain loss

The main reason identified for grain loss was pests reported by approximately two-thirds of respondents. SSU 10 viewers were more likely to identify pests, dampness and rodents than were their non-viewing counterparts. Rotting was identified by more farmers at the pre-broadcast phase than after the series was aired

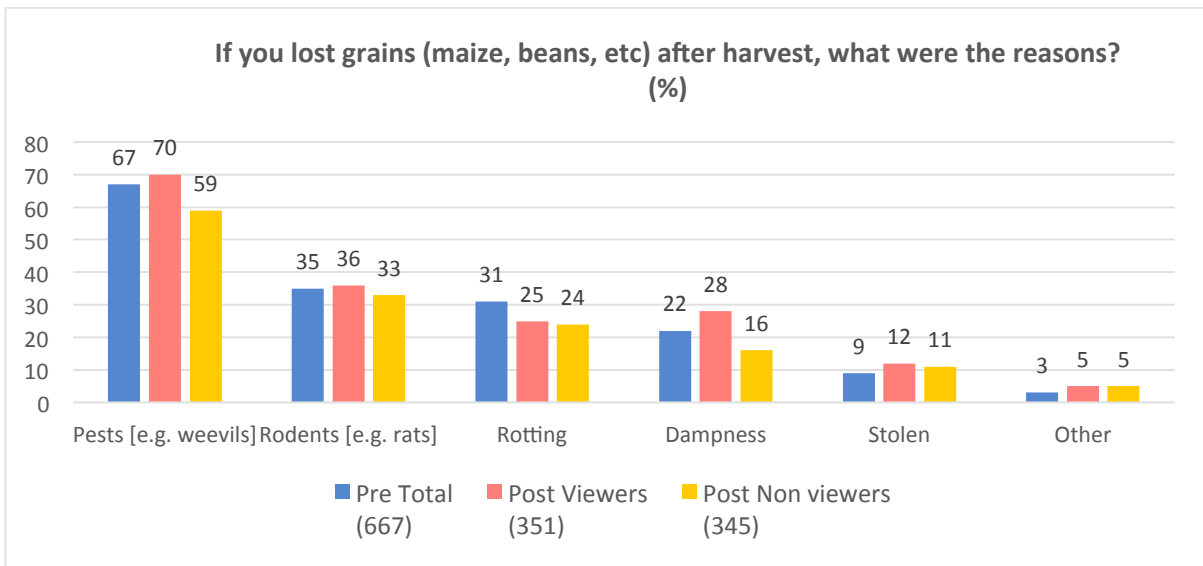


Figure 32: Reasons for grain loss

### 9.3 Maize post-harvest handling

There are more marked differences in post-harvest handling than in grain spoilage between SSU 10 viewers and non-viewers suggesting that the handling processes shown in the series are being well understood and adopted by farmers. The marked differences were between drying on a tandarua and drying on the ground, which was a key message in the series. These findings indicate that there was an uptake in best practices in maize drying among SSU 10 viewers which can be attributed to the programme.

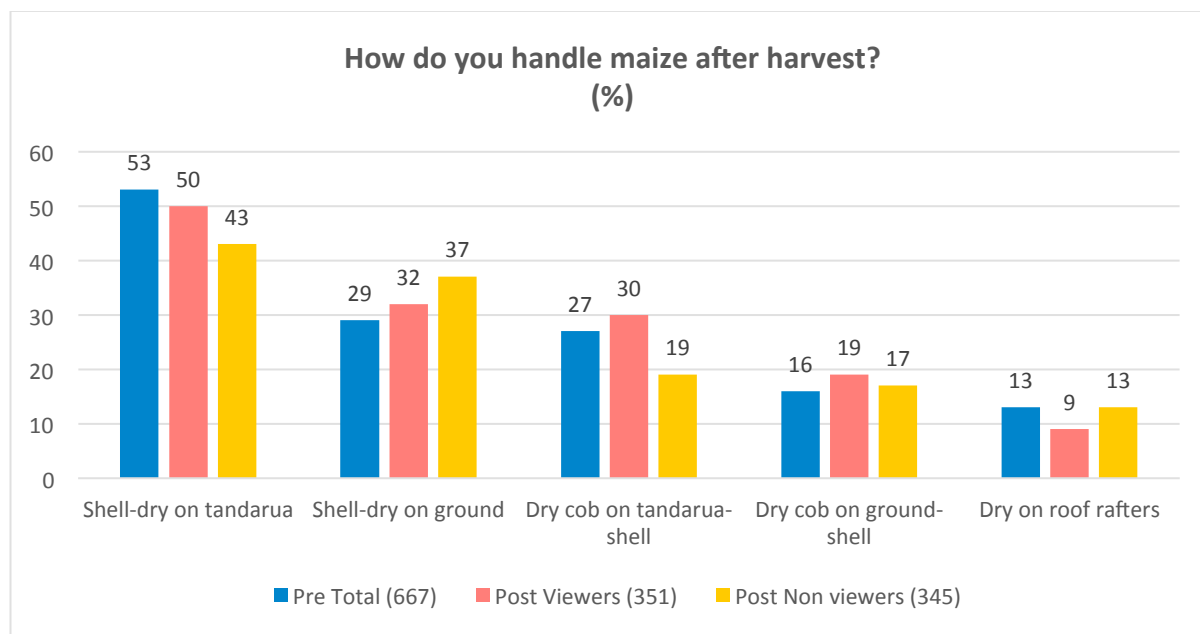


Figure 33: Maize handling after harvest

### 9.4 Grain storage

Again, when discussing the best way to store grain there were marked differences between SSU 10 viewers and non-viewers. Viewers were more likely to be aware of the recommended and better practices of using a nylon sack with two liners (10 percentage point difference); sisal sacks (three percentage point difference) and hermetic bags (five percentage point difference). **This is strong evidence that SSU 10 is making a difference to the ways in which farmers now think about the best ways to store their grain.**

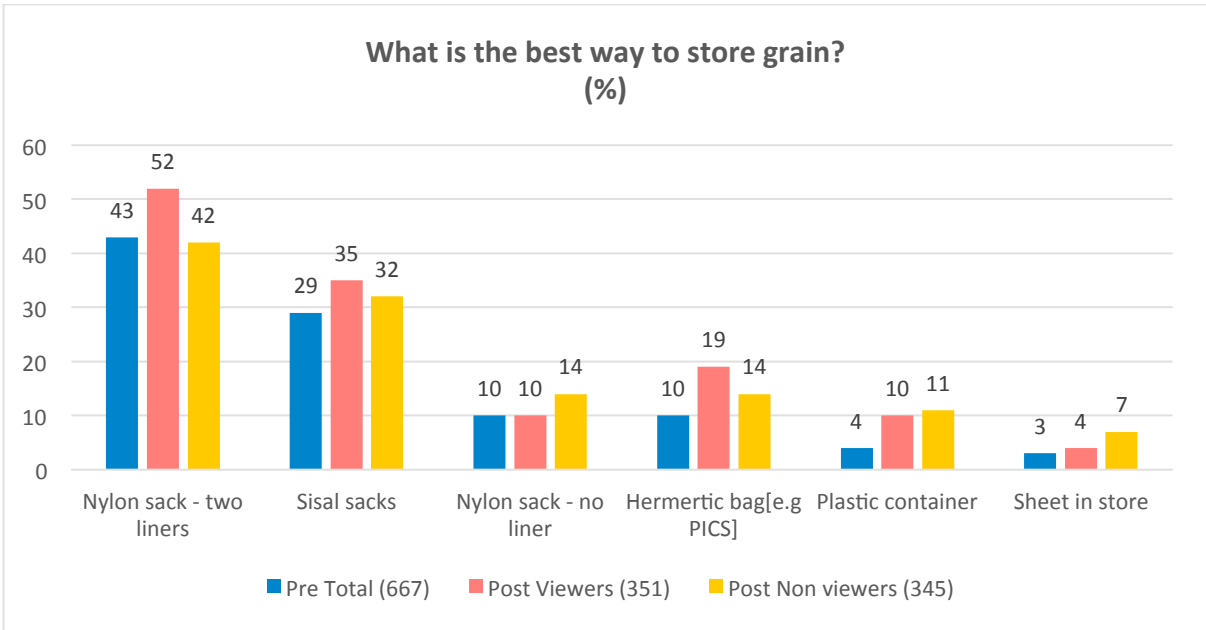


Figure 34: Best ways to store grain

### 9.5 Grain drying

The most popular method of knowing whether cereals or pulses are dry enough was by biting it – mentioned by between three and four in ten farmers. However, the evidence shows that this traditional method is favoured more by non-viewers than viewers, who are more likely to use a moisture meter (28% v 23%) or the bottle and salt method (12% v 8%). Evidence again that the SSU 10 content and messages are having an effect in educating farmers about good practices with regards to their cereal and pulse crops.

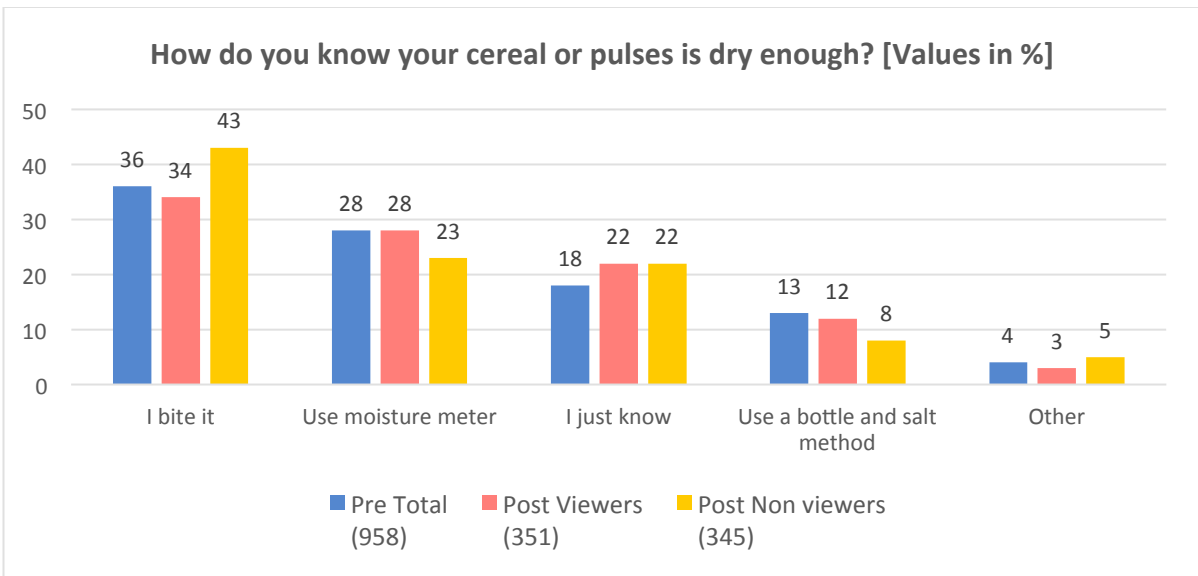


Figure 35: How to determine if grains are dry enough

## SECTION 10: WEATHER

### 10.1 Weather effects on farm

Weather is the burden all farmers have to bear and the vast majority (80%) said they had been affected by weather in the past year – notably late rains and floods and to a lesser extent early rains and drought. It’s likely that “late rains” affected more farmers in the pre-broadcast survey because it was carried out in February, leading up to when the long rains generally start, while the post broadcast survey was carried out in September, leading up to the short rains.

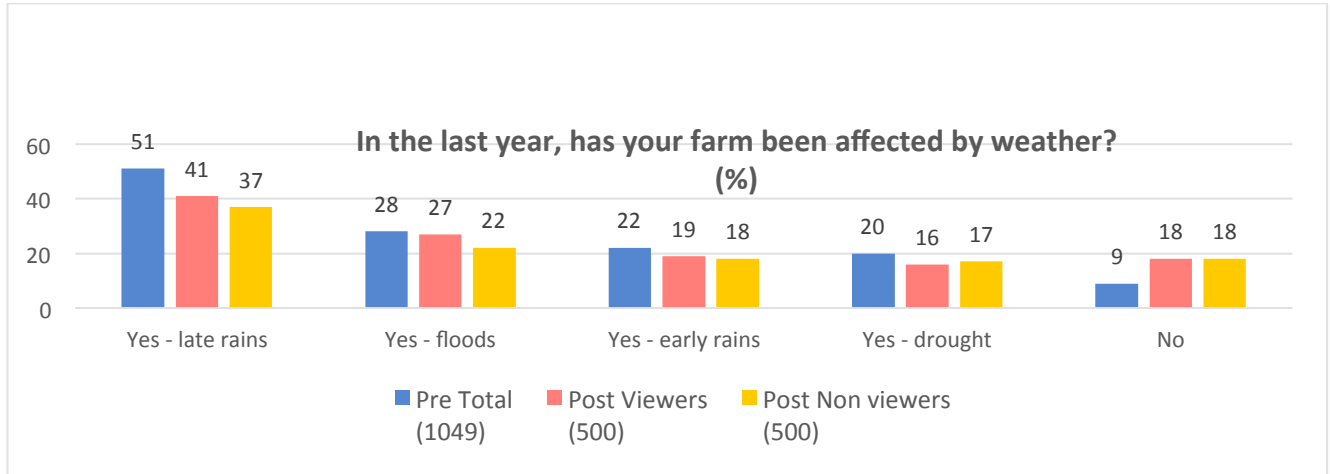


Figure 36: Weather effects on farm in last season

### 10.2 Planting decisions

Many farmers still use the traditional dates to decide when to plant and this well-established practice may take some time to change. **However, it is encouraging that just over a quarter (26%) of SSU 10 viewers say they use the iShamba weather forecasts, a significantly higher proportion than non-viewers (15%).** Other weather forecasts are used by just over one third of viewers and non-viewers alike.

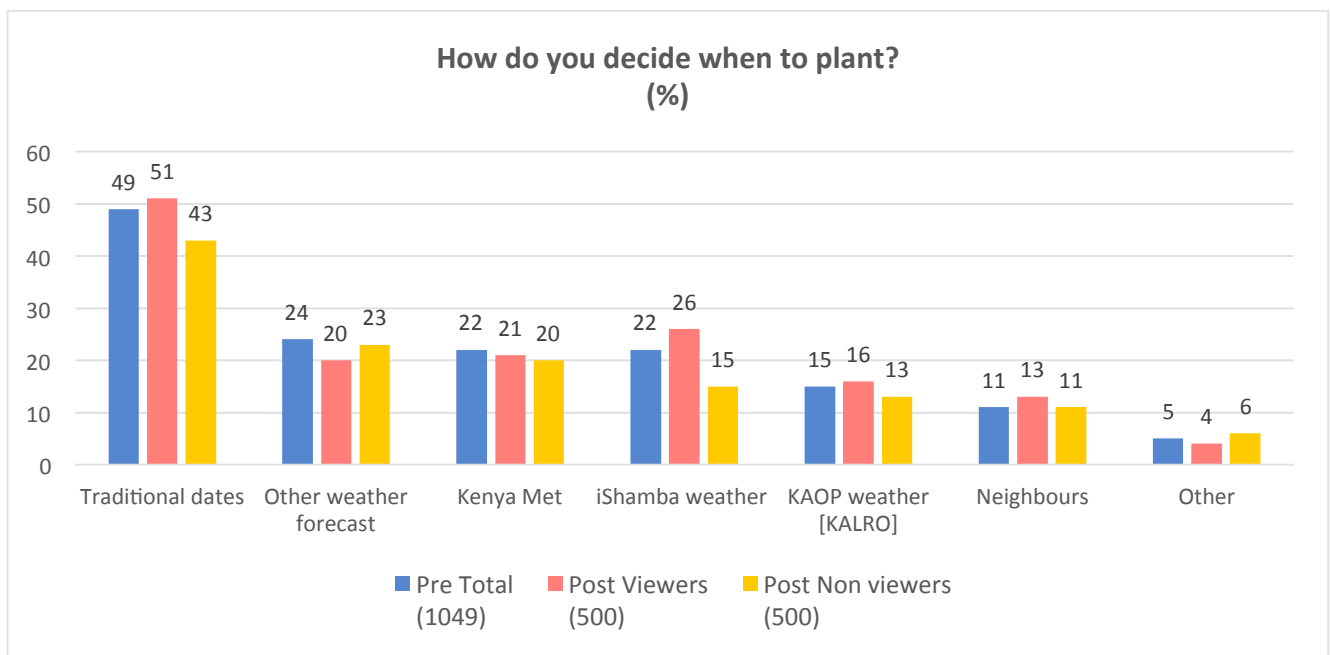


Figure 37: Decision on when to plant

### 10.3 Crop Loss due to late planting

The importance of knowing when to plant because of weather considerations cannot be underestimated. Almost all the farmers (around 90%) surveyed estimated crop losses due to planting two weeks of up to 30% of their crops – a significant amount in lost income and lost food for the household. Messages around understanding and following weather advice are extremely important and there are some signs that SSU 10 viewers are beginning to respond to them.

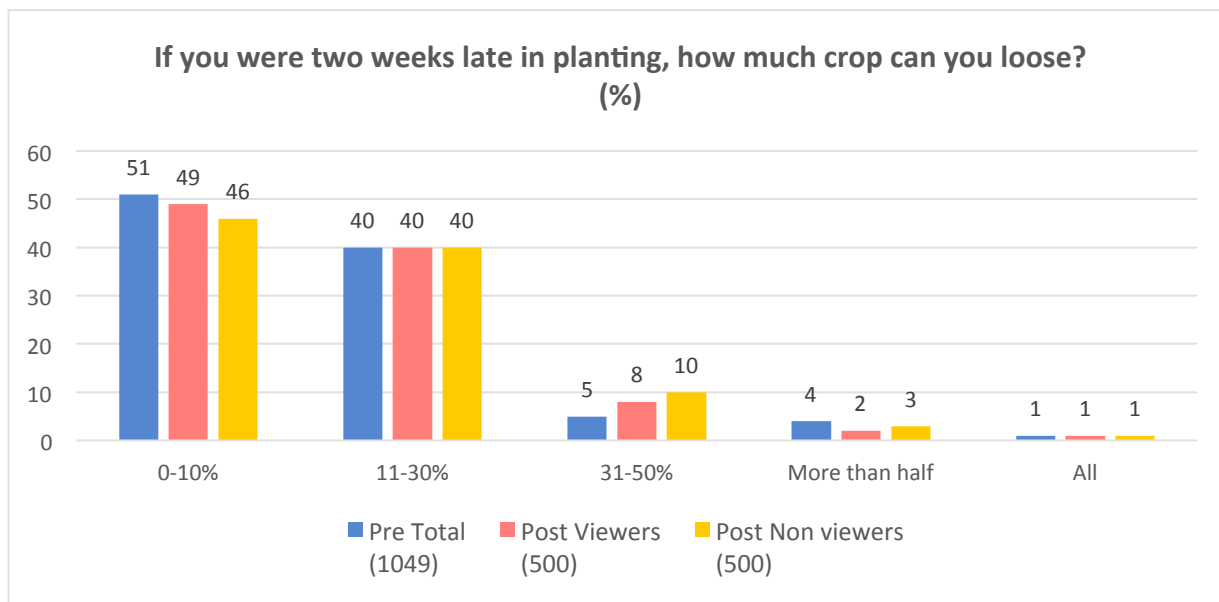


Figure 38: Crop loss due to late planting

## SECTION 11: MODERN COOKING SOLUTIONS

### 11.1 Main cooking method

It is very interesting to note that cooking with LPG/ gas has now overtaken the three stones method used by farmers as their cooking method– and particularly noteworthy that many more SSU 10 viewers (39%) are cooking with LPG/ gas than non-viewers (30%). Among viewers LPG/ gas is now the most popular method, followed by three stones, charcoal and jiko compared with non-viewers who favour three stones over LPG/ gas. The use of charcoal and jiko does not vary between viewers and non-viewers



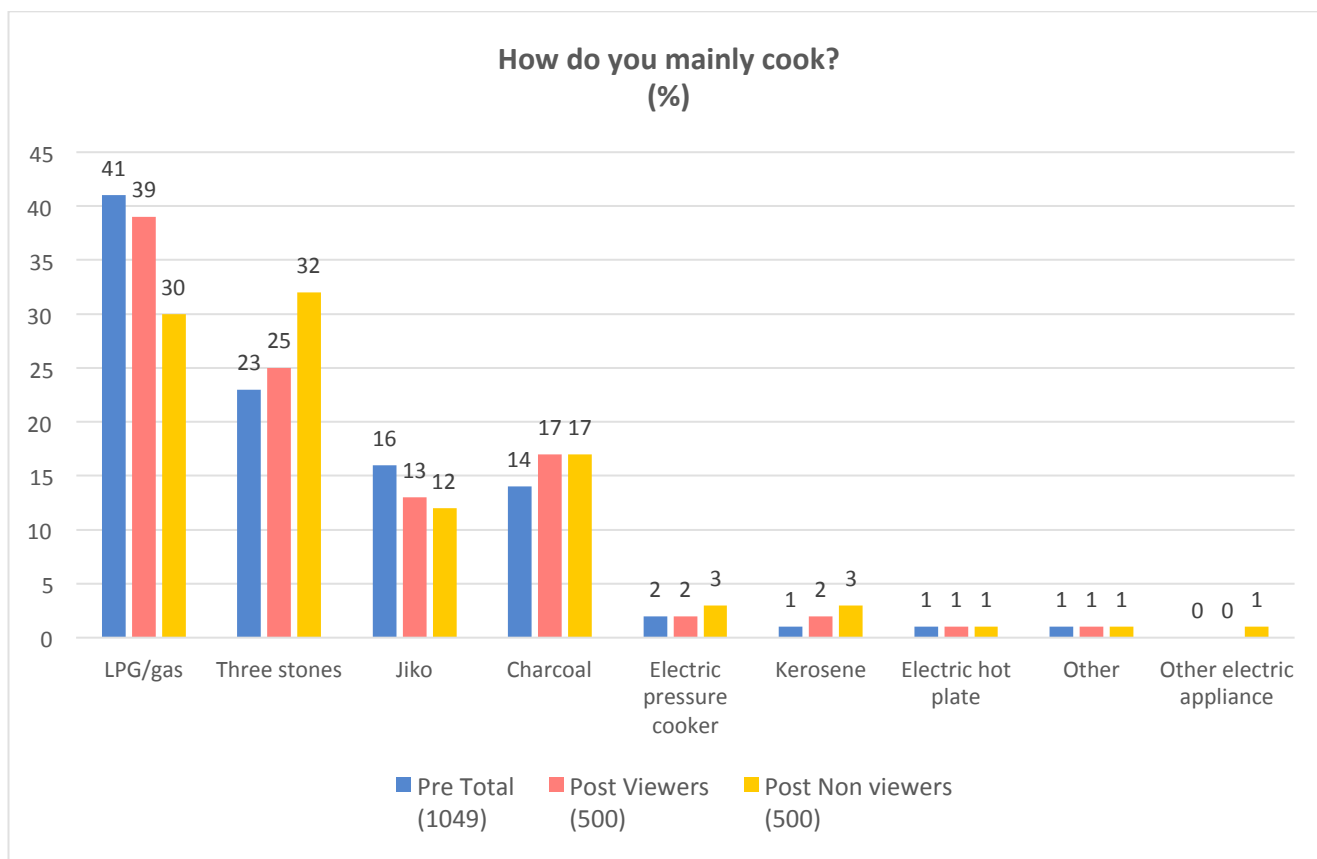


Figure 39: Main cooking method

## 11.2 Cheap cooking methods for heavy foods

Around one half of farmers use wood to cook heavy food as it is considered the cheapest method, with around one quarter opting for charcoal. **The interesting difference between viewers and non-viewers in this context is that fewer viewers (48%) than non-viewers (55%) are using wood and more – albeit a small proportion are using electric pressure cookers (viewers 16%); non-viewers (10%)**

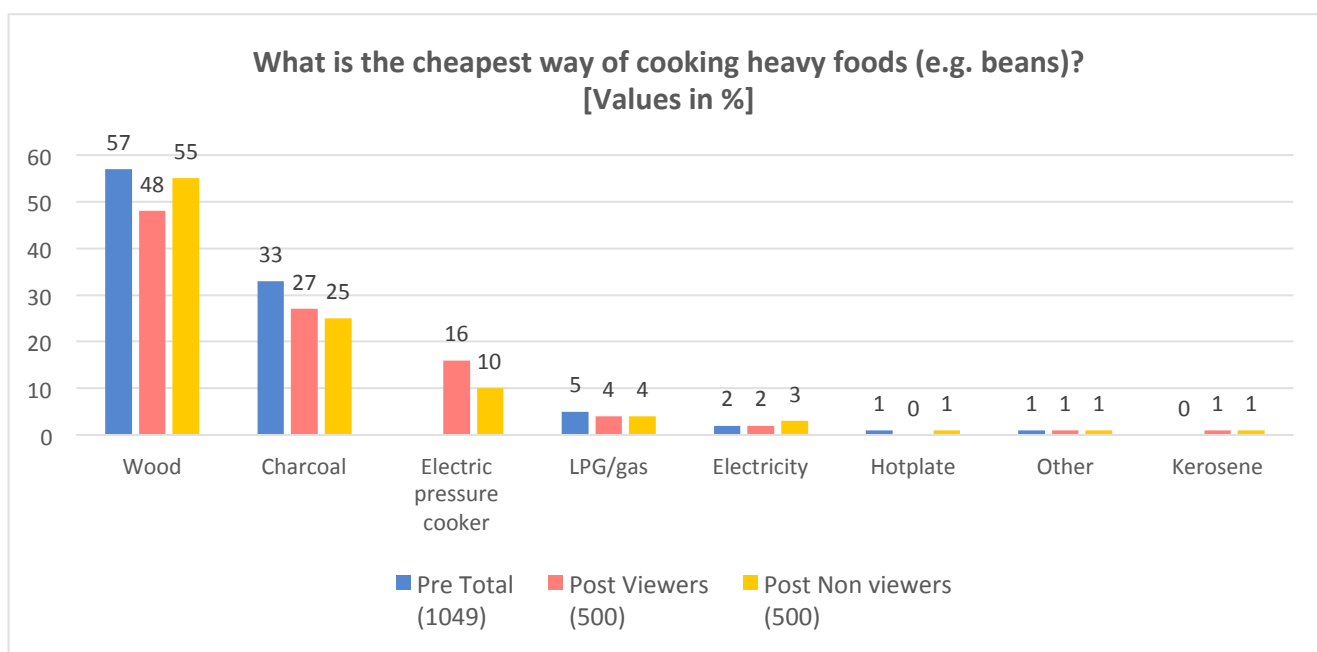


Figure 40: Cheapest ways of cooking heavy foods

### 11.3 Electric pressure cooker

Viewers are much more likely than non-viewers to use electric pressure cookers for githeri (62% vs 41%), beans (59% vs 36%) and matumbo (43% vs 30%) a clear indication that the messages in SSU 10 are being accepted and acted upon.

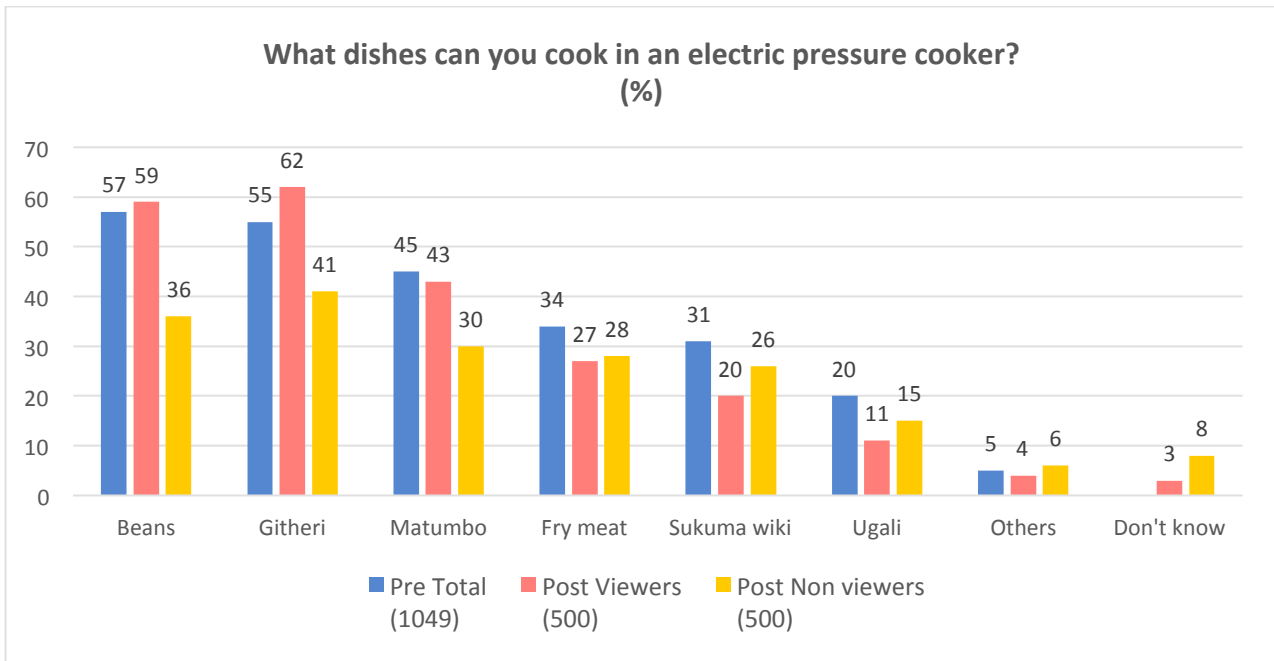


Figure 41: Dishes cooked using an electric pressure cooker

### 11.3 Reasons for not using electric pressure cooker

The main reasons for not using an electric pressure cooker are cost – the cooker itself and the cost of electricity. Issues around access to electricity, safety and availability also play a part. There are modest differences between SSU 10 viewers and non-viewers with the exception of the issues around cost. One half of viewers (49%) say that they do not use an electric pressure cooker because they are expensive, compared with only 38% of non-viewers, although fewer viewers (34%) than non-viewers (43%) say that they don't use an electric pressure cooker because of the cost of electricity.

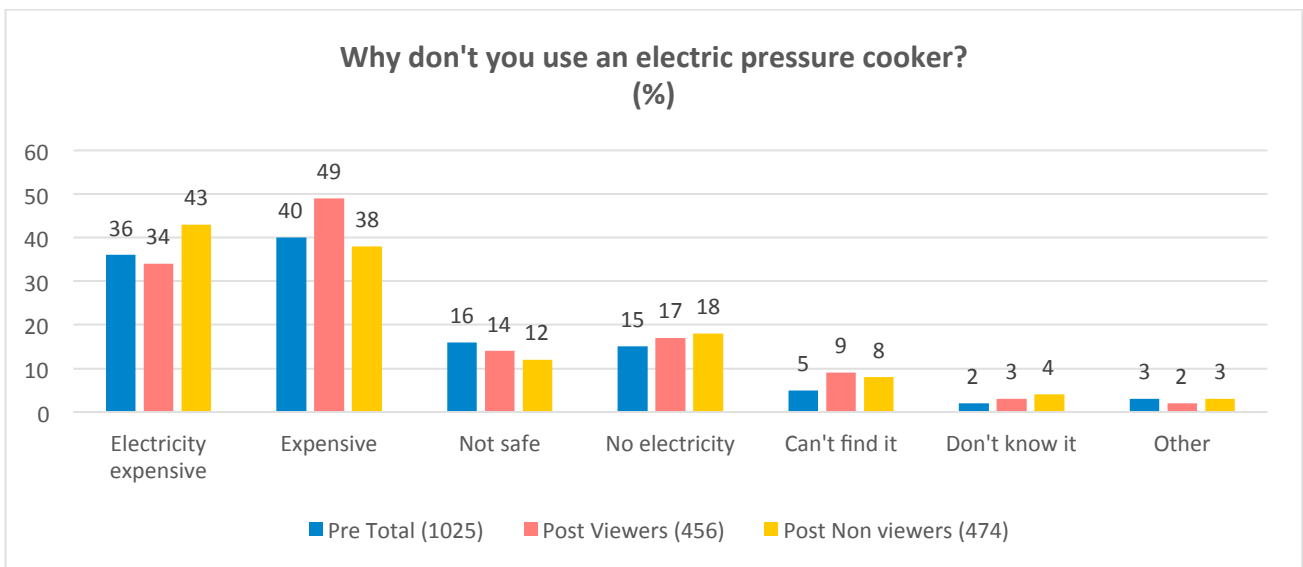


Figure 42: Reasons for not using electric pressure cooker

### 11.4 Safety of electric pressure cooker

The majority of the **farmers** (around 70%) had concerns about the safety of the electric pressure cooker with more than one-third mentioning that they would use it only with training and a quarter when the children are away. **Positive attitudes towards electric pressure cookers are more prevalent among viewers than non-viewers** – a third of viewers said they were not afraid to use an electric pressure cooker compared with 25% of non-viewers and conversely only 13% thought they were not safe, compared with 22% of non-viewers.

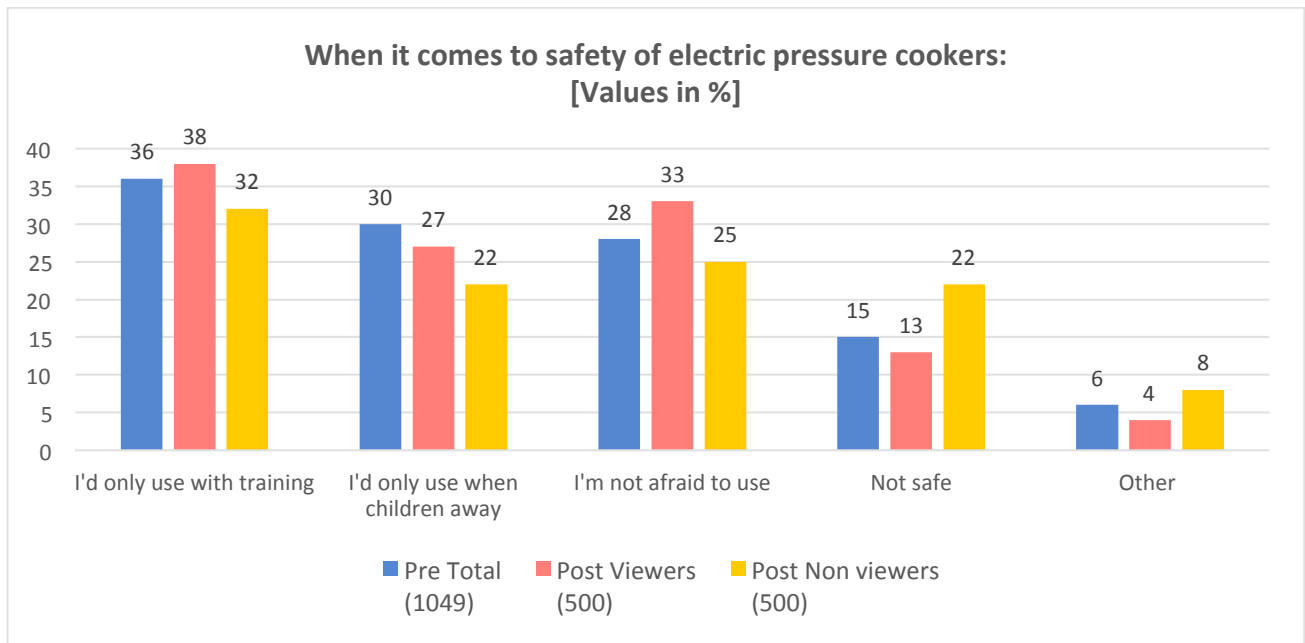


Figure 43: Safety of electric pressure cooker

### 11.5 Important features for cooking appliance

The figure below shows that farmers considered a variety of features when choosing a cooking appliance which included cooks quickly, cheap, can cook many things, safe for the children and doesn't smoke. The pre broadcast and post broadcast data are not directly comparable as respondents could select multiple answers at the pre stage, but only one at the post stage. **However, the findings show that farmers are open to adopt new cooking appliances and practices that suit their needs and requirements.** There is need for the show to continue educating the viewers on advantages of various modern cooking appliances.

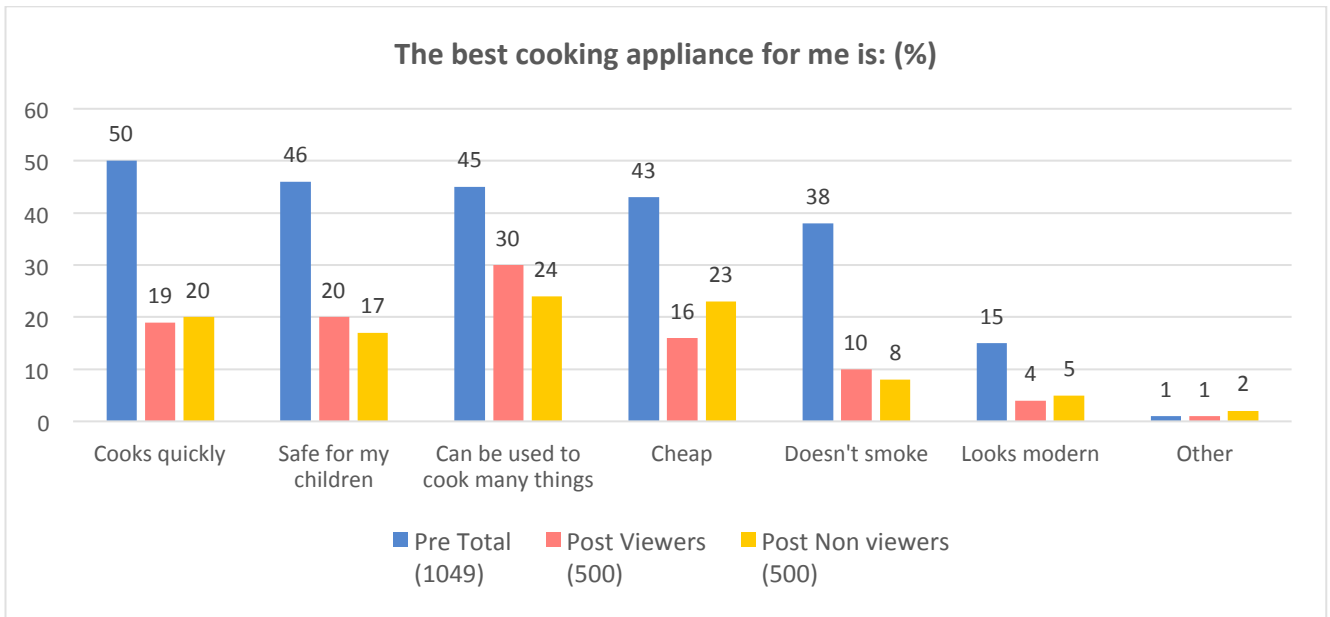


Figure 44: Important features for a cooking appliance

## SECTION 12: AVOCADO MANAGEMENT

### 12.1 Source of Avocado seedlings

The farm nursery was the most common source of avocado seedlings with 39% of the post broadcast viewers and 36% post non-viewers reporting it. The non-recommended practice of farmers grafting their own seedlings was six percentage points higher among non-viewers than viewers – an indication that the good practices being promoted are being adopted

These findings show that farmers have gained knowledge on the importance of planting quality seedlings however there is need for continued education on this topic to reach out to those sourcing their seedlings from the roadside as well as educating those growing their seedlings from their farm nursery on how to improve on the quality.

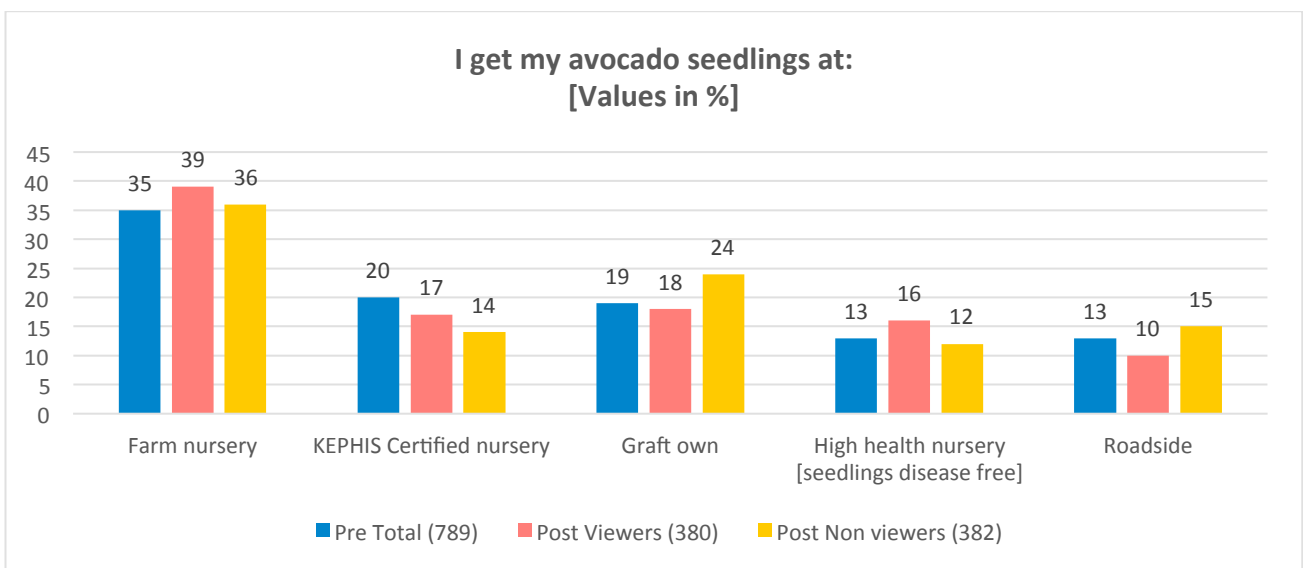


Figure 45: Source of avocado seedling

### 12.2. Avocado pruning

Over one third of farmers prune their old trees after harvest with slightly more viewers (38%) than non-viewers (32%) saying they chose this practice. The pruning of large trees and frequent pruning of young trees were practiced more by viewers than non-viewers.

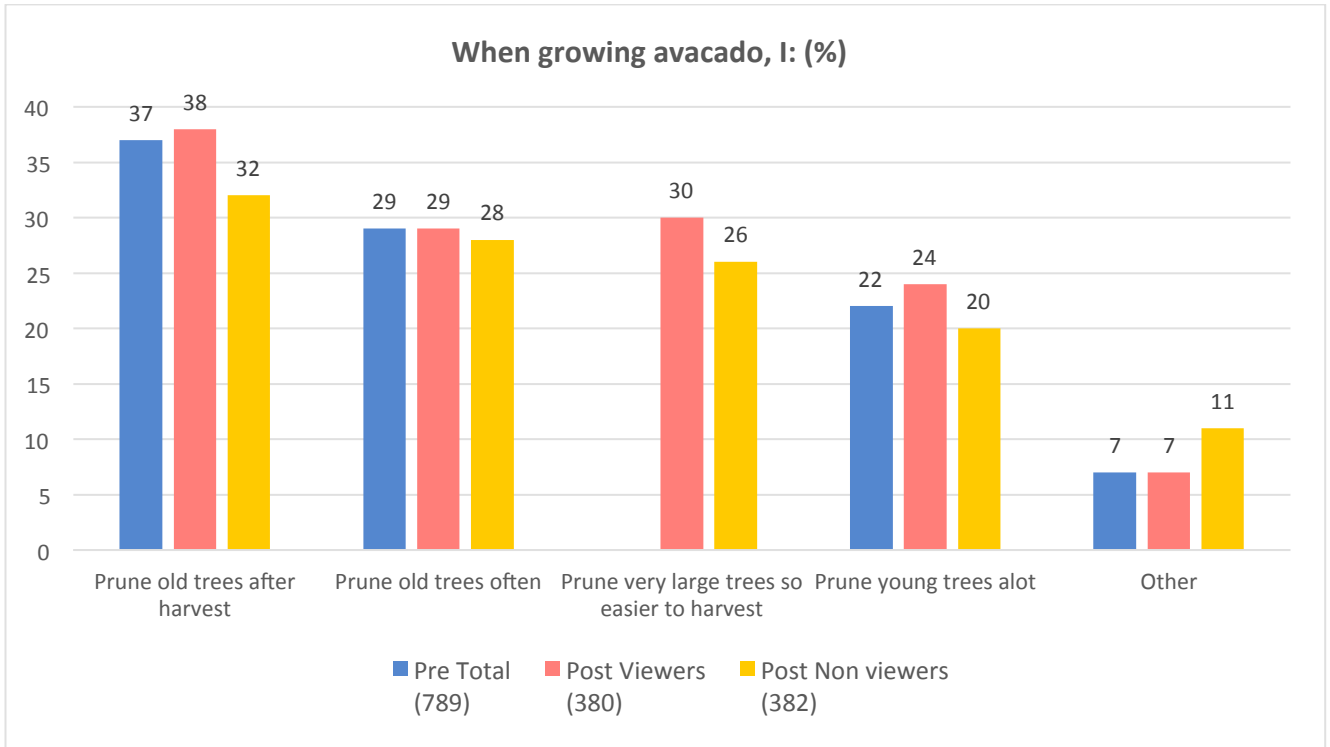


Figure 46: Avocado pruning

### 12.3 Avocado cultivation

More than half of the farmers apply fresh cow manure to the avocado trees for growth with 61% of viewers and 53% non-viewers practicing this method as a way of ensuring growth. Growing legumes under the avocado trees for fodder and to help soil fertility was practiced by more viewers (43%) than non-viewers (38%). Around one in five of all farmers – regardless of SSU 10 viewing said they cultivated beneath their avocado trees.

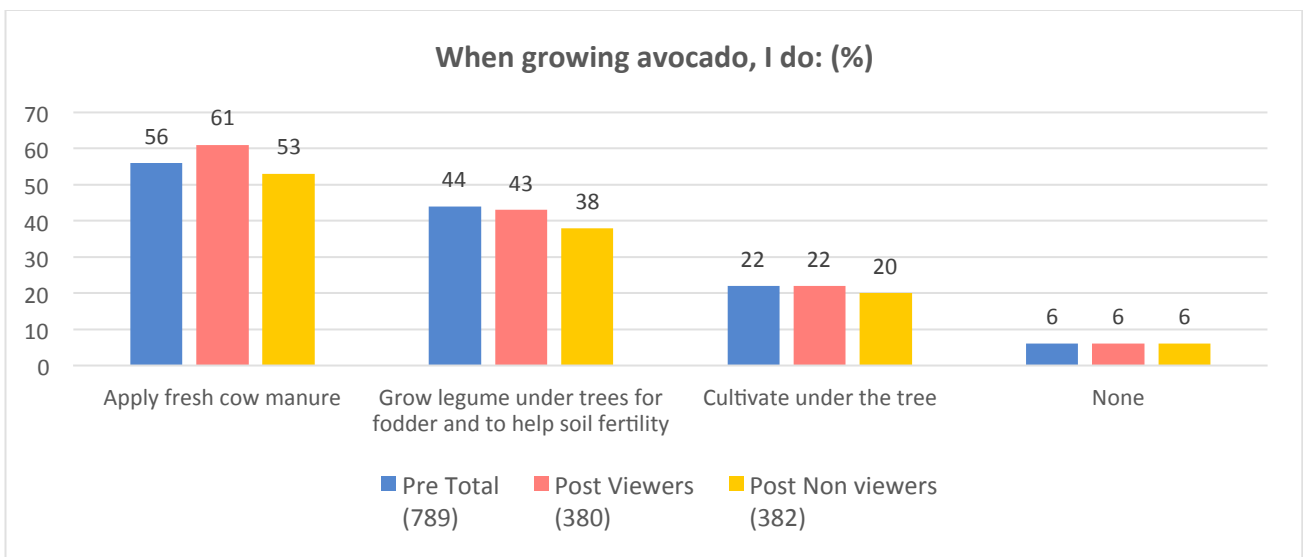


Figure 47: Avocado growth

### 12.4. Avocado harvest

The most popular method of harvesting avocados was picking them with a harvesting pole with cutter and net bag. A significantly higher proportion of viewers (57%) reported using this harvesting method, compared with non-viewers (46%). Climbing the tree was a method used by around one third of the surveyed farmers – slightly more non-viewers (32%) than viewers (28%) favoured this method.

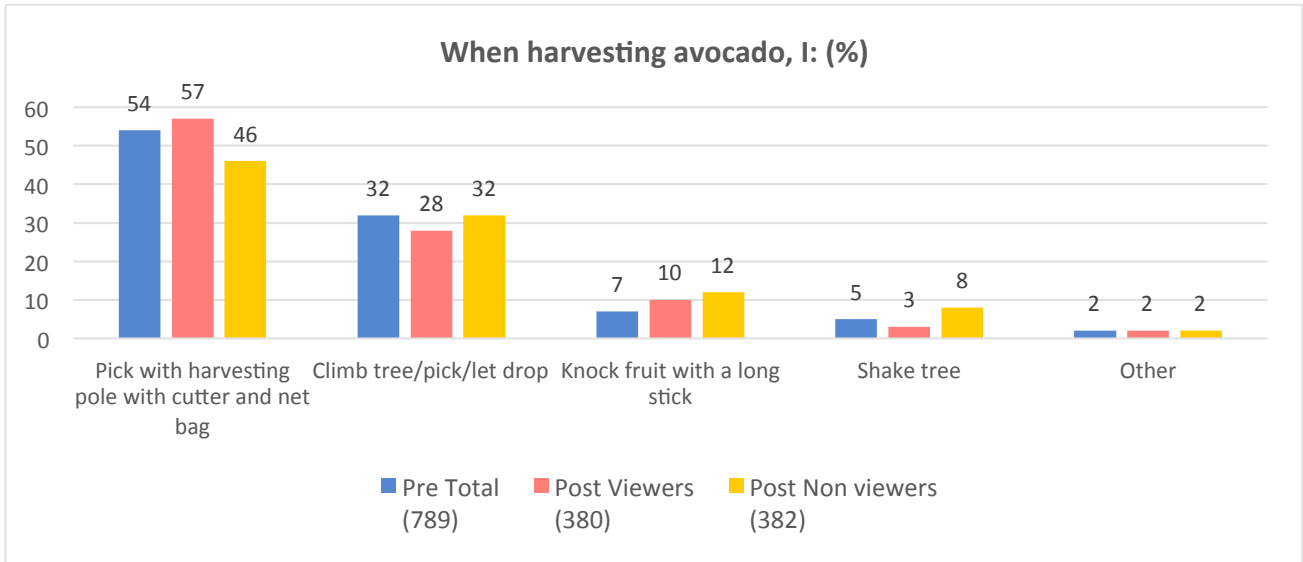


Figure 48: Avocado harvesting

## SECTION 13: MANAGEMENT AND PROMOTION OF COMMERCIAL TREES

### 13.1 Commercial trees grown

The most common commercial trees being grown are eucalyptus (around 60%) and cypress (around 50%). SSU viewers are slightly more likely than non-viewers to grow all the varieties asked about in the survey. Growing pine trees showed the largest difference between viewers and non-viewers on 13 percentage points.

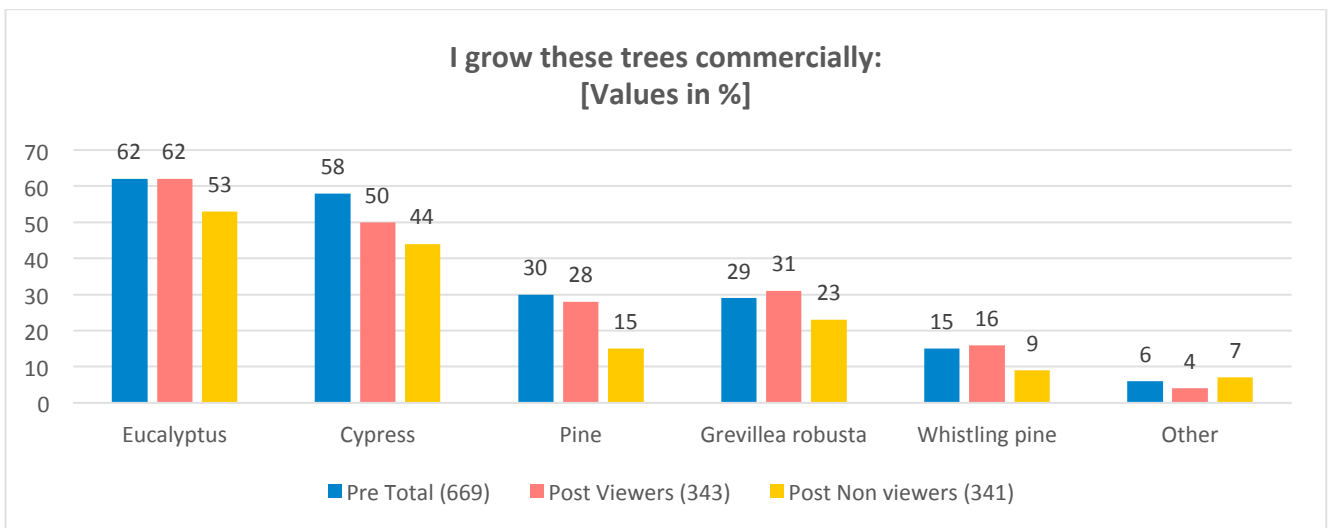


Figure 49: Commercial trees grown

### 13.2 Tree seedlings source

Over one half of commercial tree growers source their seedlings from a KFS nursery, with around a quarter growing their own. There are notable differences between the practices of viewers and non-viewers with 12 percent more viewers (than non-viewers) sourcing from a KFS nursery and 5 percent more non-viewers growing their own. The use of roadside nurseries, using seedlings from a previous harvest and sourcing from neighbours were all very small among both groups.

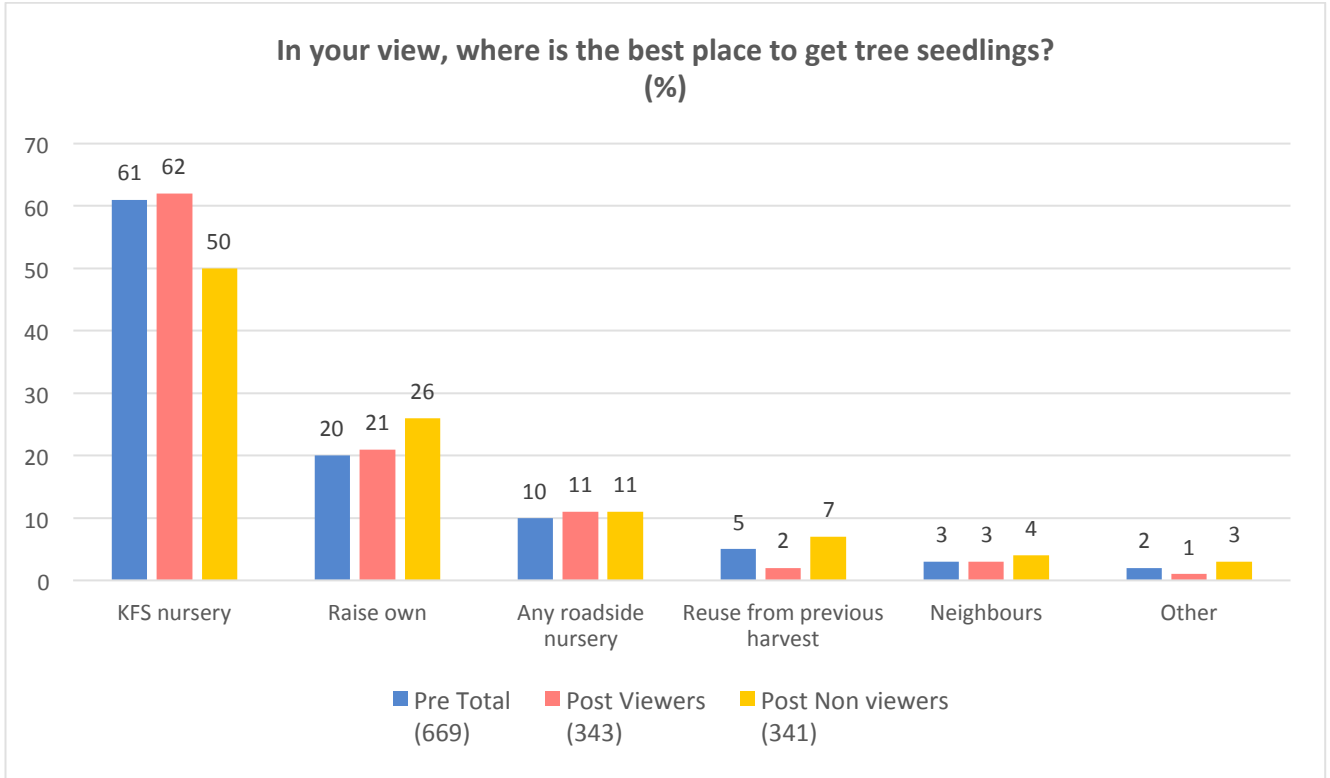


Figure 50: Tree seedling sources

### 13.3. Reasons for planting trees

The most common reasons for growing trees were to: lessen erosion, provide shade and use for timber. There are notable differences between viewers and non-viewers in this regard, with almost 20 percent fewer non-viewers mentioning erosion or to provide shade. The practice of growing trees for commercial purposes was generally low and suggests that there is need to continue educating farmers on timber as a source of income.

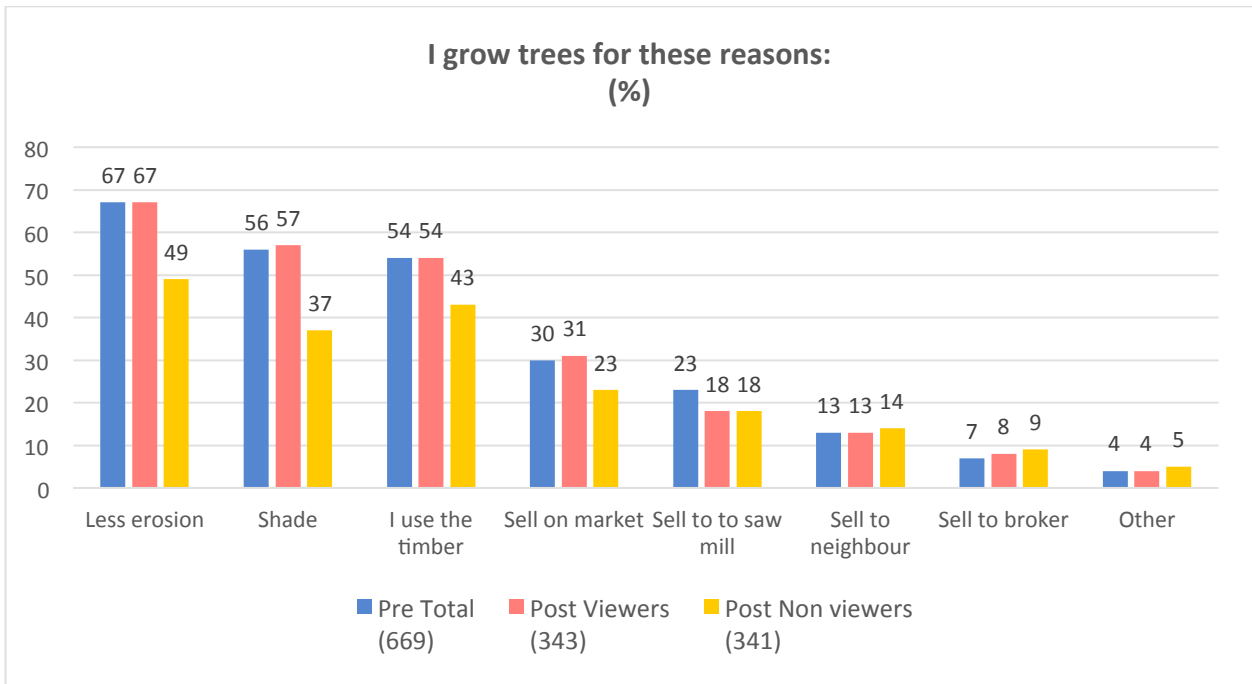


Figure 51: Reasons for growing trees

## SECTION 14: SOURCING OF MEAT

### 14.1 Meat sourcing

Almost everyone buys their meat from a trusted butcher. Only tiny numbers would buy from a roadside butcher – but more of them would be non-viewers than viewers

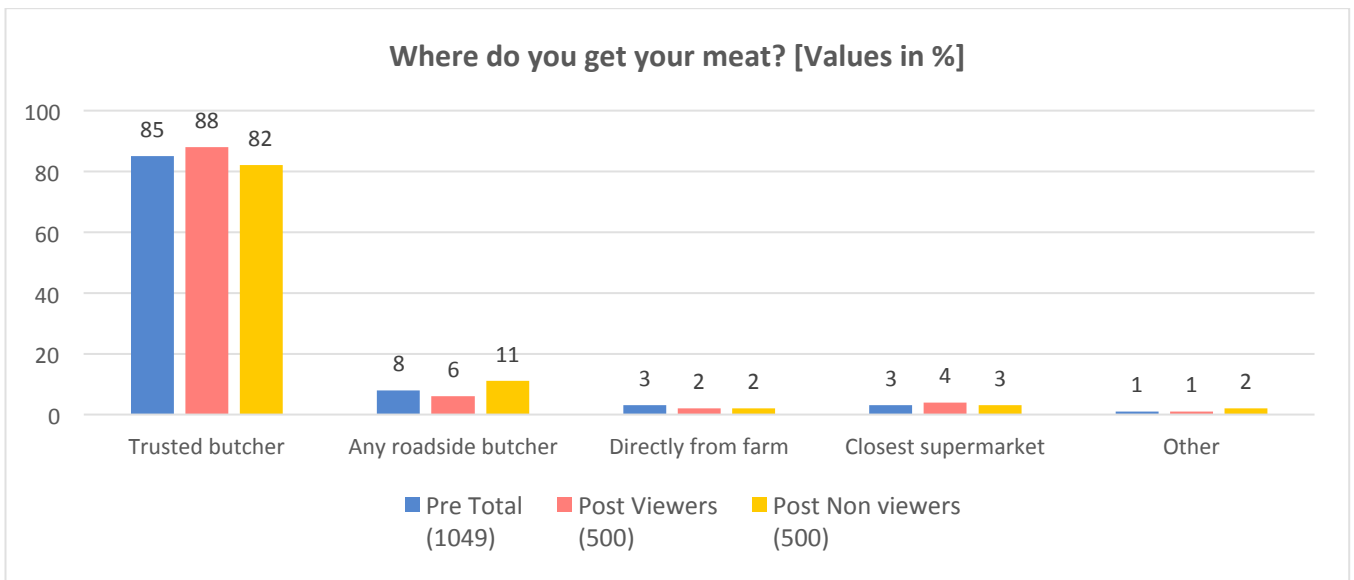


Figure 52: Meat sourcing



# CONCLUSIONS

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The considerable body of evidence cited in this report suggests very clearly that viewing of SSU 10 has had a positive impact on the knowledge, attitudes and practices of farmers with the result that they have seen improvements in their yields, incomes and household food security. There is a strong relationship between the amount of coverage of a topic in the series and increases in the key indicators.

*Shamba Shape Up* is in its tenth year and there is no sign of fatigue. In fact, the contrary appears to be the case as farmers express an appetite for more information and practical advice in how to improve their crop and livestock yields. The series continues to attract significant audiences – this latest series attracted in the region of at least 6.8 million weekly viewers across its Saturday and Sunday broadcasts in Kenya alone.

In this report, changes in behaviour between viewers and (the increasingly elusive non-viewers) have been highlighted and the evidence presented in the charts and graphs. In summary, the key changes are:

- Use of improved/certified variety of seeds for crop planting
- Benefits of proteins and supplements for cattle and better feeding practices
- Use of scientific practices for reducing grain losses
- Better awareness of detecting and dealing with fall army worm
- Improved conservation practices
- More positive attitudes and slight up-tick in purchasing crop and livestock insurance
- Improved practices with respect of the sourcing of seeds, vines and trees
- Evidence of moving from traditional planting times to using weather forecasts
- More positive attitudes towards using modern cooking methods