SHAMBA SHAPE UP SERIES 11

KNOWLEDGE, ATTITUDES AND PRACTICES REPORT

DECEMBER 1, 2021

Survey data provided by

GeoPoll

Contents

List of Charts

1 EXECUTIVE SUMMARY

Shamba Shape Up (SSU) series 11 was broadcast nationally on Kenya's leading television channel, Citizen TV, between March and September 2021. The series was shot in a variety of locations in key agricultural areas and covered a range of topics, from soil conservation to farm financing and livestock husbandry. SSU aims to raise knowledge of good farming and nutrition practices, promote positive attitudes towards improved farming methods and ultimately change the ways in which farmers improve their production of crops and livestock productivity and adoption of modern, less harmful cooking practices.

SSU has been running continuously since 2010 and is Kenya's leading agricultural series. According to GeoPoll's Audience Measurement Survey it is estimated that SSU 11 reached around 3.4 million households weekly. The viewership figures show that an average of 1.6 million households viewed on a Saturday and 1.7 million households viewed on a Sunday afternoons each week. Past surveys have shown that approximately 16% of people are watching both programmes. Over the past ten years pre and post-broadcast, Knowledge, Attitude and Practice (KAP) 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.

To evaluate the impact of this series of *Shamba Shape Up* three waves of data collection were conducted to track changes from a pre-broadcast baseline survey of non-viewers through a midline survey, halfway through the series, to an endline immediately the series finished among series viewers and non-viewers. The data from this series, in contrast with all other series, show very few differences between viewers and non-viewers and as such the midline and endline waves have been aggregated for reporting purposes.

Shamba Shape Up remains the most popular television programme for farming information and television (as opposed to radio or social media) is the main point of contact with the series and its content. Loyalty to the series is high with around half of all viewers viewing on a regular weekly basis. Viewers are more likely to watch television programmes on their own sets at home and watch television more frequently than non-viewers.

The key take-aways from SSU 11 which can be attributed to watching the series are:

- 3.4 million households viewing weekly (approx. 6 million viewers)
- Improved knowledge and practice of soil conservation methods, especially crop rotation and composting which have resulted in improved yields
- Improved practices with respect to sourcing disease free plants and irrigating fruit tree seedlings
- Improved practices with regards to harvesting avocados
- Improved financial literacy and farm financing practices
- Improved knowledge of irrigation practices
- Improved knowledge of herbicide and pesticide use
- Improved use of good supplements in cattle management practices, likely resulting in better milk yields
- More positive attitudes towards using and intention to purchase modern cooking methods (electric pressure cookers)
- The practice of soil testing remains low, however, viewers who conducted a soil test reported significant improvements in their yields.
- The take up of crop insurance remains low, but intention to do so in the future is high (64% viewers) and the barriers could be addressed through information.

2 INTRODUCTION

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 the country. 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.

In the latest series of SSU (series 11, March to September 2021) the presenters and subject matter experts visited family farms to demonstrate practical solutions to solve the farmers' problems and improve farming methods and cooking practices. In Kenya, the series was aired weekly between 20thMarch 2021 and 5th September 2021 on Citizen Television in both English (Saturdays 13.30 to 14.00) and Kiswahili (Sundays 13.30 to 14.00).

A pre-broadcast (baseline), during-broadcast (midline) and post-broadcast (endline) knowledge, attitudes and practices (KAP) survey was conducted to evaluate the impact of the series on small-holder farmers in Kenya.

The primary objectives of the pre, during and post-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 11, SSU covered 14 main topics over 25 episodes, with some topics – such as crop management, animal feed and dairy hygiene receiving considerable coverage (10 features) and others, such soil testing and crop insurance receiving more modest coverage (4 features).

Shamba Shape Up Series 11: Partners and Topics

See Appendix 3 for broadcast dates and related iShamba traffic

Partner	Topic
AgroCares	Soil testing
Potsdam Institute (PIK)	Crop insurance
World Food Program (WFP), FtMA	Conservation practices, Agroforestry
EBF DF/ Finance in Motion	Conservation Agriculture, Composting, Agroforestry
Plant and Food Research	Avocado management
International Potato Centre (CIP)	Orange fleshed Sweet Potato, Nutrition, Markets
Syngenta	Pest and disease control
International Centre of Insect Physiology and Ecology (ICIPE)	Push pull
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Solar powered irrigation systems
M-KOPA	Pay as you go farmer phone, water tanks
CKL Ltd (Coopers Africa)	Livestock management: Animal Feed, Dairy Hygiene
International Center for Tropical Agriculture (CIAT)	Forage species and management
Modern Energy Cooking Services (MECS), UK Aid	Modern Cooking Solutions, Focus on the Electric Pressure Cooker

Research is required by Mediae and its partners to assess 'what has been successful' and 'what has been less successful' in terms of raising awareness and improving knowledge about specific topics and issues, having a positive impact on attitudes and potentially 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' needs to be demonstrated for changes in traditional farming practice to be adopted.

SSU is now in its eleventh year, and this latest series attracted considerable audiences of around 1.6 million households per episode to its English language and another 1.7 million households to its Swahili broadcasts. A measure of the success of the series is that it is becoming increasingly difficult to find small-scale farmers in the appropriate geographic locations who have not seen at least some of the series for viewer and non-viewer comparisons.

2.1 Research Methodology

The Knowledge, Attitude and Practice (KAP) surveys for *Shamba Shape Up* Series 11 were conducted by GeoPoll, a third-party research agency based in Nairobi. The study took the form of a classic baseline, midline and endline design to facilitate comparisons and attribute changes to the viewing of SSU 11, where possible. The baseline survey took place in February 2021, the midline in May 2021 and the endline in September/ October 2021. Each wave of the study utilised GeoPoll's computer aided telephone (CATI) data collection mode, whereby trained enumerators conduct an in-person interview via the telephone from a central, quality-controlled location. Before each wave of data collection, the team of enumerators attended a two-day training session and were fully briefed on the methodology, quota operations and the study instrument. The sample of small holder farmers' telephone numbers was drawn from GeoPoll's database of smallholder farmers which has been built over time and carries basic demographic information, such as gender and location. GeoPoll's sampling methodology and the use of quotas for gender do not allow for response rates to be calculated.

The data were analysed using SPSS and tests of significance (z-tests) were applied to the survey estimates. As a rule of thumb, differences of less than 5 percent are not statistically significant and have been reported on as 'directional' differences only. For reporting and charting purposes, the midline during-broadcast (viewers and non-viewers) have been aggregated with the endline post-broadcast (viewers and non-viewers). The samples from each of the waves have been 'normalised' where appropriate to allow for 'like for like' comparisons.

Throughout this report the pre-broadcast non-viewers (in blue) are compared with the post-broadcast non-viewers (in red) and post-broadcast viewers (in yellow).

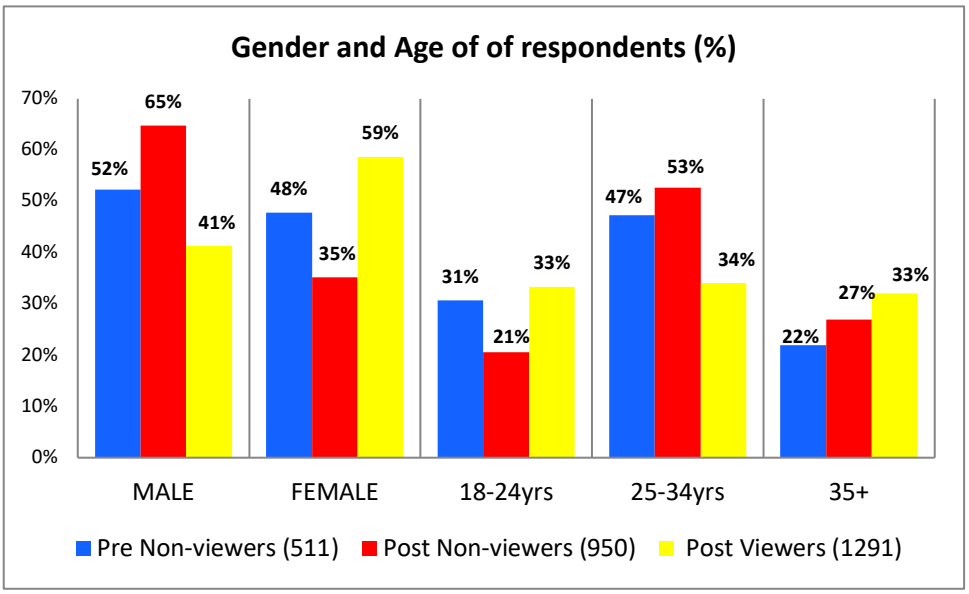
2.2 Sample profiles by gender, age, location and farming status

The pre and post broadcast samples were controlled for gender to ensure an approximate 50/50 male/female distribution. At the pre-broadcast stage the achieved sample was 511 – all were non viewers of Shamba Shape Up (defined as never having seen any of Shamba Shape Up, but having access to television); at the during and post-broadcast stages 950 non-viewers to SSU 11 were successfully interviewed (non-viewers included those who had not seen any of SSU 11 or were

very infrequent viewers) and 1,291 SSU 11 viewers were achieved SSU 11 viewers were defined as those who had seen the series in 2021 and watched a minimum of once or twice a month.

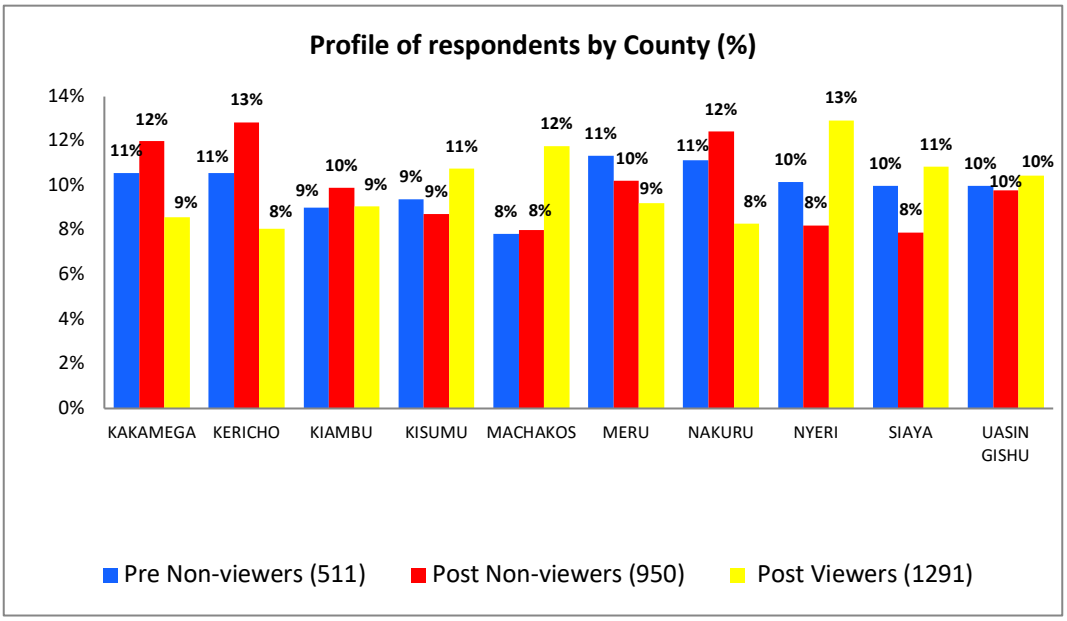
The sample profile chart below, by gender and age show that the pre-broadcast sample was well distributed by gender, but that the post-broadcast non-viewer sample had a very significant male skew, while the post-broadcast viewer sample had a marked female skew. This occurred because the gender quotas were applied at the 'total sample' level and not within viewer and non-viewer categories. Age too, showed significant differences between the survey waves with 25–34-year-olds noticeably over-represented among the non-viewers. The series audience profile shows a slight skew towards older viewers (37% aged 35 and over) and male viewers (55%).

Chart 1: ***Sample profile: Gender and age***



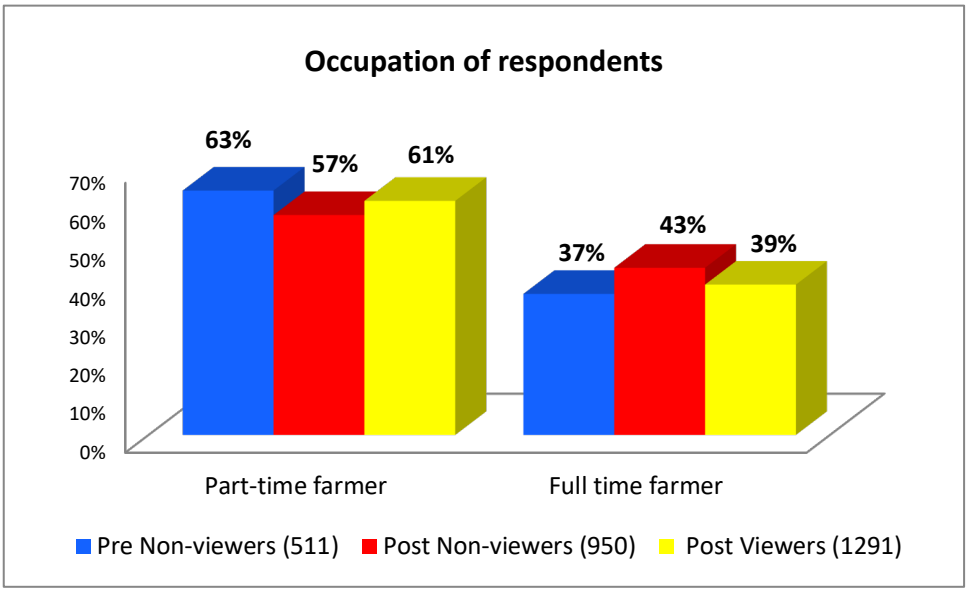
The sample was not controlled by location, but the aim was for a good distribution across the counties which was generally achieved. There was a slight under-representation of post-broadcast viewers in Kakamega, Kericho and Nakuru, but this unlikely to have any material effect on the overall findings.

Chart 2: ***Sample profile: Location***



The farming status of respondents across all the waves of the survey was fairly consistent, with around 60% saying they were part-time farmers and the remaining 40% saying they were full-time farmers. Smallholder farming in Kenya is becoming an increasingly challenging occupation and unreliable source of income, often resulting in farmers having to engage in other forms of economic activity in order to generate sufficient incomes and support their families.

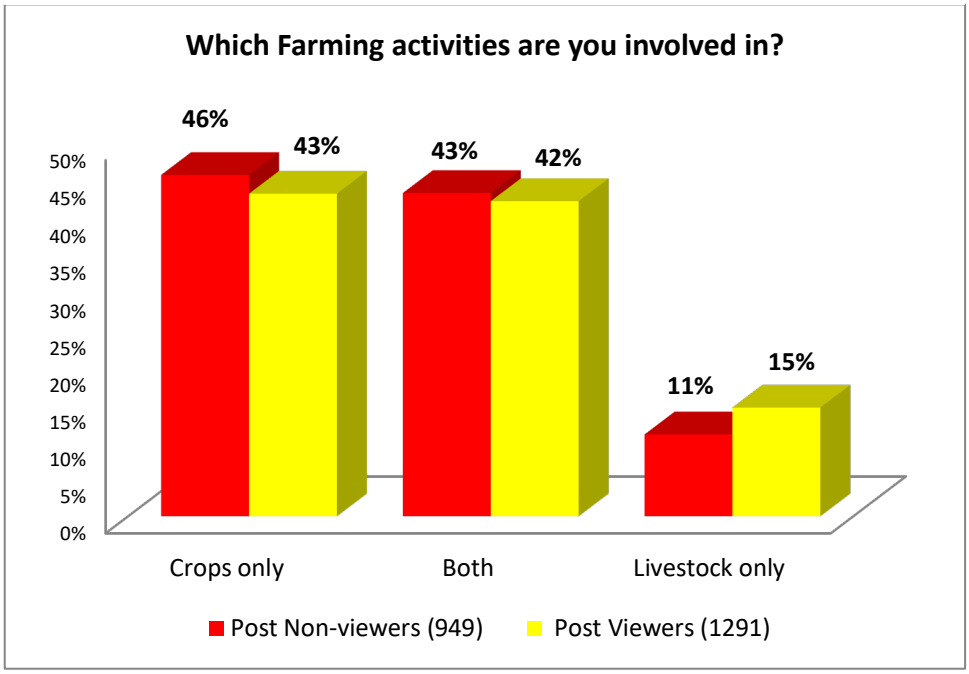
Chart 3: ***Sample profile: Farming status***



2.3 Farming activities

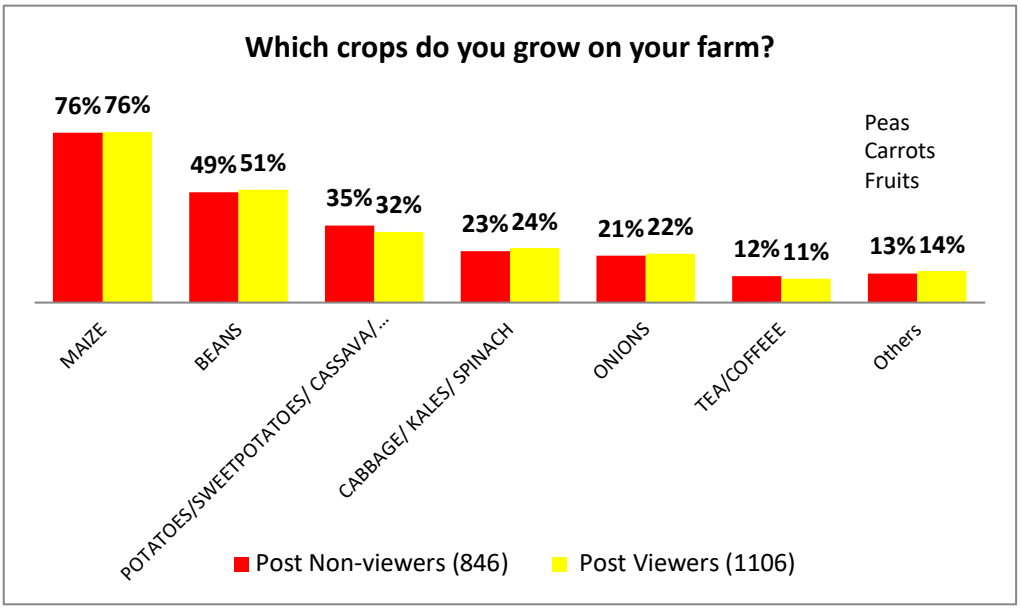
At the post-broadcast stage only, questions were asked about the farming activities respondents were engaged in. The overwhelming majority of post-broadcast viewers and non-viewers interviewed said they grew crops (just under 90%) with just over half (55%) saying they kept livestock. However, these two main farming activities are not mutually exclusive – crop growers also keep livestock and livestock farmers also grow crops. Very few of the smallholder farmers interviewed post-broadcast farmed only livestock.

Chart 4: ***Sample profile; Farming activities engaged in***



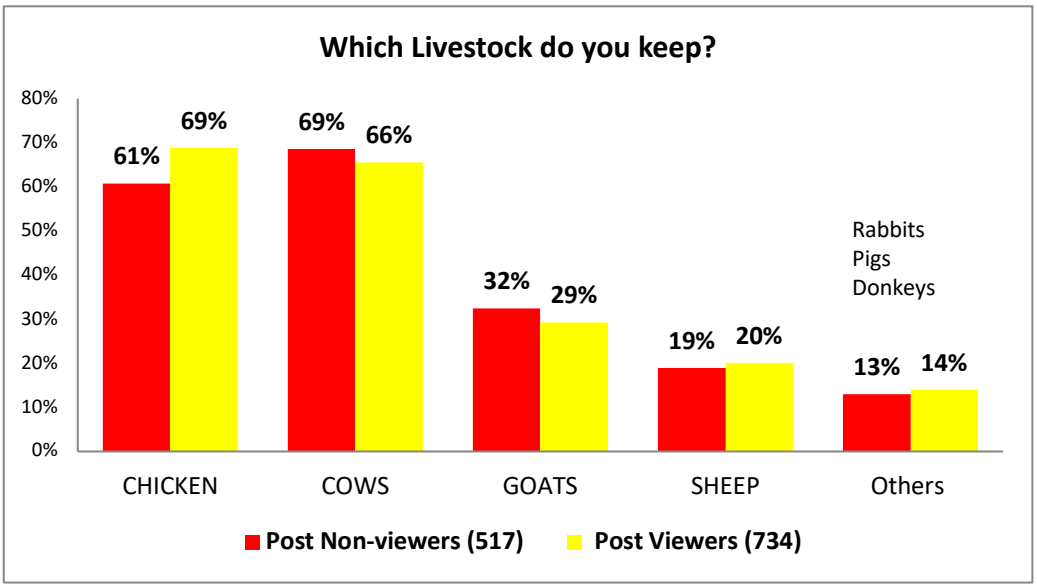
The chart below shows the high degree of consistency in the main crops grown by the post-broadcast samples of viewers and non-viewers. Three-quarters of viewers and non-viewers surveyed said that they grew maize, around one half said they grew beans, a third were engaged in potato/ sweet potato production and a quarter said they grew cabbage/ kales/ spinach and onions. These sample profiles are an accurate representation of small-holder crop growers in the locations covered by the survey.

Chart 5: ***Sample profile by crops grown***



Four main livestock varieties are farmed: chickens and cows (a significant majority) with goats farmed by around three in ten livestock farmers and sheep by around one in five. Again, the data show minimal differences between the viewer and non-viewer profile with regards to the livestock kept.

Chart 6: ***Sample profile by livestock kept***



Throughout this report comparisons will be drawn between series 11 pre-broadcast (all non-viewers) and the post-broadcast viewers and non-viewers (where possible) to illustrate where exposure to the information and content in the series has had an impact on the knowledge, attitudes and practices of smallholder farmers. It is important therefore to explain where any sampling differences may potentially have an impact on the findings.

The main differences in the samples are those of viewing to SSU 11 (controlled for) and gender and age. To qualify for inclusion in the survey all respondents had to have viewed some television in the seven days prior to interview to ensure that there were no systematic biases with regards to access to and viewing of television. The post-broadcast sample of SSU 11 viewers was more female and older than their non-viewing counterparts. In all other respects the samples were consistent across the survey waves.

MAIN FINDINGS

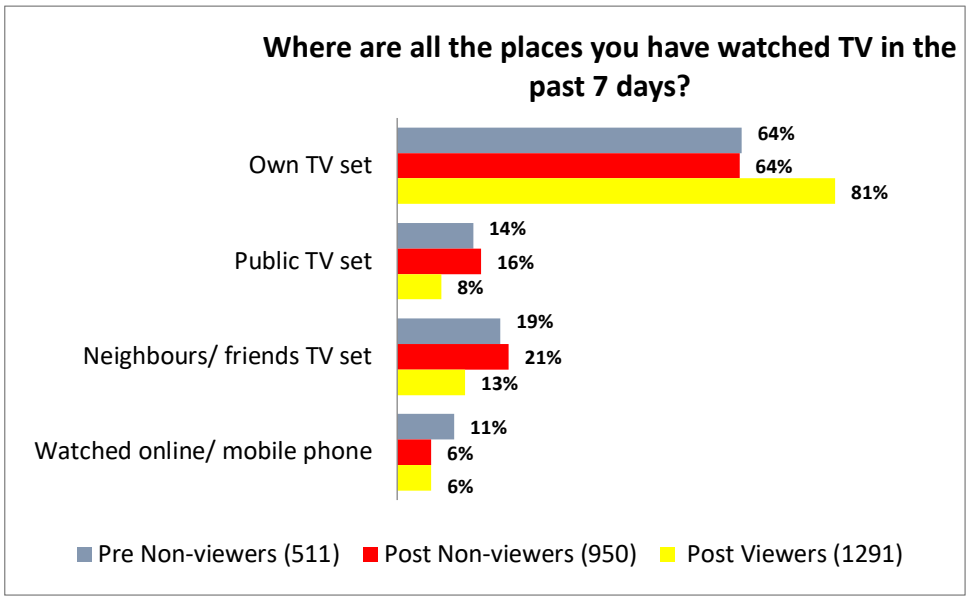
3 TELEVISION VIEWING

3.1 Audiences to Shamba Shape Up 11

GeoPoll's regular Audience Measurement Survey, used by the broadcasting industry in Kenya, shows that SSU 11 attracted audiences of around 1.6 million viewers each week to its Saturday afternoon English broadcasts and around 1.7 million to its Sunday afternoon broadcasts in Swahili. These figures are lower than the 2+ million audiences who watched the programmes over the same period in 2020. An analysis of GeoPoll's television viewing across all time periods from 2019 to 2021 shows that there has been an overall decrease in total ratings of around 6%. The decline in viewing is across all television channels and all time periods, including primetime. The weekend time period for 13.30 to 14.00 (2019 to 2021) has registered a ratings drop of 6% across all television and a decrease on Citizen Television of 11%.

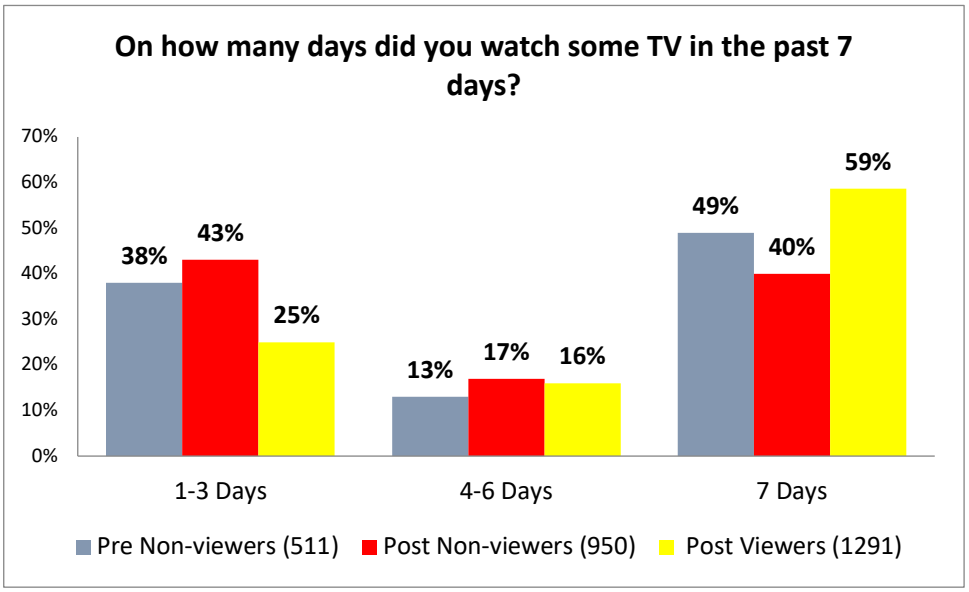
To be included in the KAP surveys, respondents had to have either in-home access to a working television or access to a neighbour's television set. The vast majority of series 11 viewers (around 80%) said that they had watched television in the seven days prior to interviews on their own television set. Non-viewers are somewhat more likely to watch television on their neighbours' or friends' television sets or on a public television set, they may not watch SSU because they are more dependent on third party access to television. One in ten or less across all waves said they had watched television in the past seven days either online or on a mobile phone. For now, at least, physical, in-home access to a television set appears to be an important determinant in television viewing, including watching SSU.

Chart 7: ***Places where TV was watched in the seven days prior to interview***



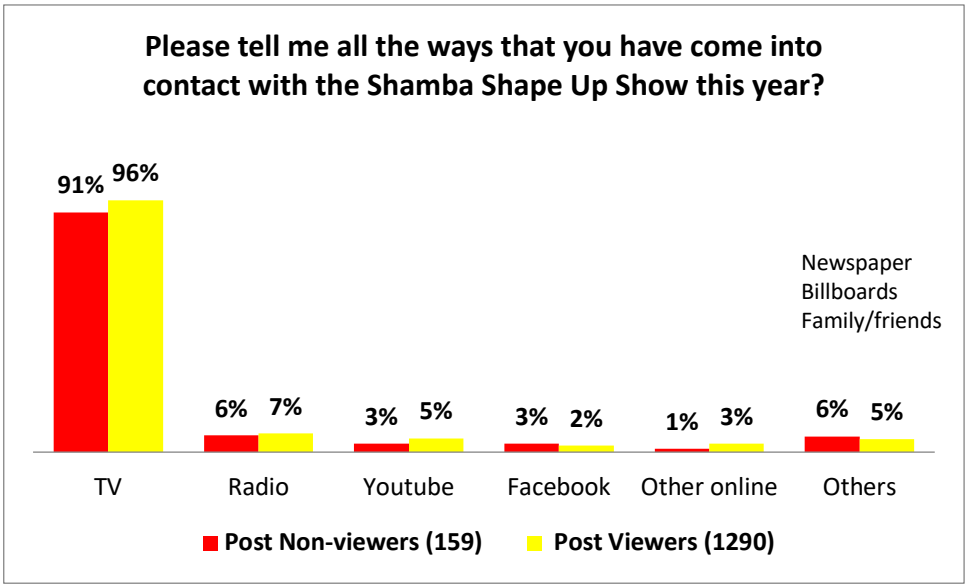
Shamba Shape Up viewers were more likely to be regular viewers of television generally than were their non-viewing counterparts, as illustrated in the chart below – 60% SSU viewers claimed to watch television every day, compared with between 40% and 50% of those who did not watch SSU at all or watched it very infrequently.

Chart 8: *Frequency of watching television*



The vast majority (over 90%) come into contact with *Shamba Shape Up* through the television programmes, with less than one in ten (7%) mentioning radio as a source of contact and even fewer mentioning social media (YouTube 5%, Facebook 2% and other online 3%).

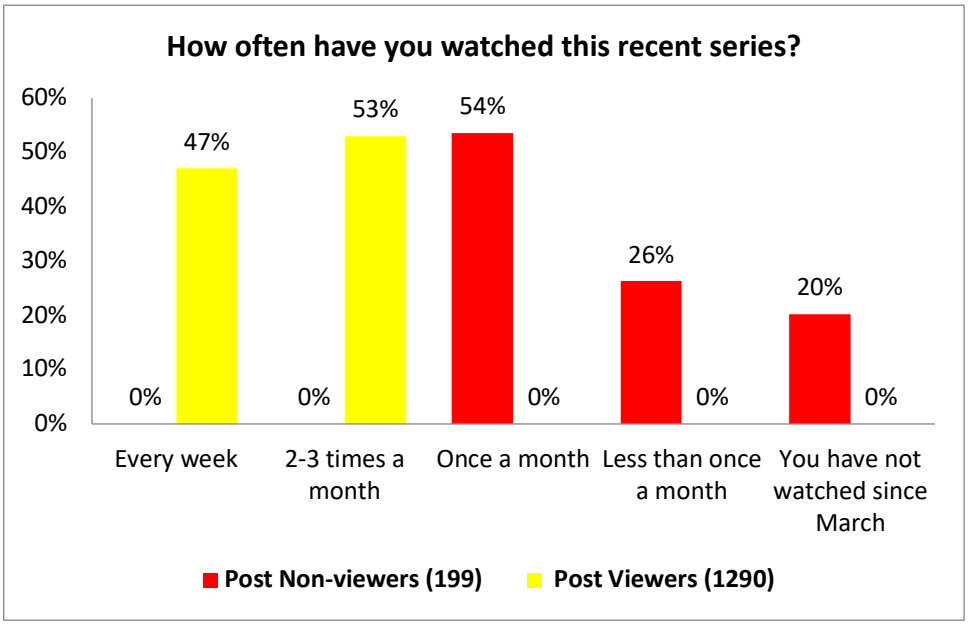
Chart 9: *Ways of coming into contact with Shamba Shape Up in 2021*



In order to qualify as a viewer, respondents had to watch SSU 11 more often than once a month. The chart below illustrates that the viewers in this survey were fairly evenly divided between very frequent viewers (47% - every week) and less frequent viewers (53% two to three times a month). It was decided to classify infrequent viewers – about once a month, or less often as 'non-viewers' since their exposure to the content is minimal.

Frequent and occasional viewers were analysed for differences in knowledge, attitudes and practices to see if those who had been exposed to more content registered significant differences. It turned out that exposure, defined in this way, made little to no difference so the data have been reported at the total 'viewer' level.

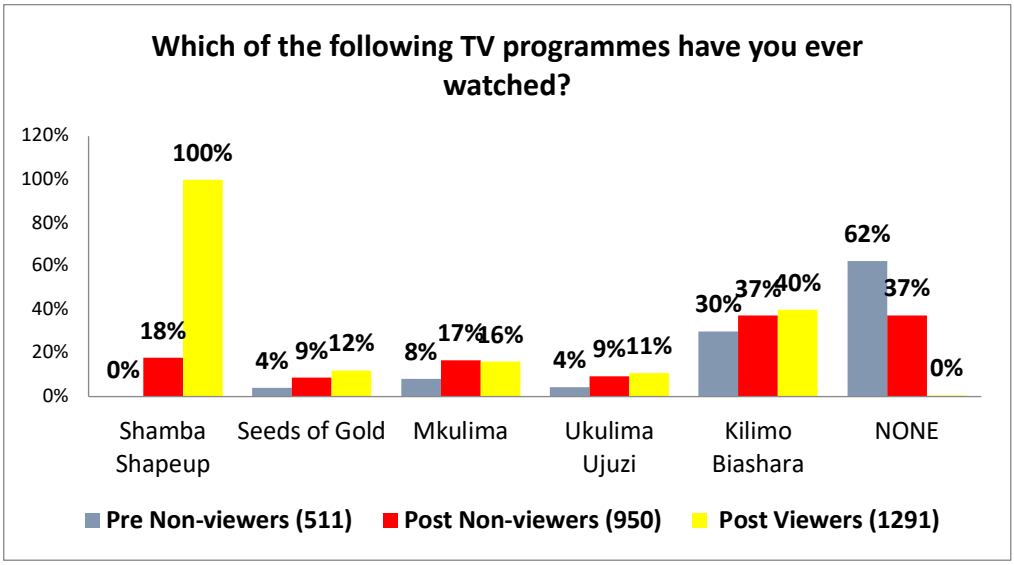
Chart 10: ***Frequency of watching Shamba Shape Up series 11***



3.2 Other farming TV programmes 'ever' watched

There is only a modest degree of overlap between watching SSU and watching other television programmes on farming matters. The most popular other shows viewed by people who watch Shamba Shape Up are *Kilimo Biashara* (40%), *Mkulima* (16%), Seeds *of Gold (*12%) *and Ukulima Ujuzi* (11%). Between 30% and 40% of those who did not qualify as SSU viewers claimed to watch *Kilimo Biashara*, but very few claimed to watch any other farming programmes – as many as six in ten of those who qualified as non-viewers of *Shamba Shape Up* at the pre-broadcast stage, did not watch any other farming television programmes either.

Chart 11: ***Viewing to farming television programmes***



3.3 Additional channels of audience engagement

iShamba Platform

Shamba Shape Up viewers are encouraged to get in touch with the programme's free mobile back up system "iShamba". This farmer support platform allows viewers to follow up with the Shamba Shape Up team to receive further information on any of the aired topics and put their questions to a team trained agronomists using SMS, phone calls or WhatsApp. iShamba has a call centre staffed with agricultural experts where farmers can get instant expert advice six days a week. On the Shamba Shape Up programme, viewers are advised to get in touch with iShamba for more information on any given topic.

In addition, audiences can download episodes of *Shamba Shape Up* through Mediae's Youtube channel Africa Knowledge Zone. Since its launch in 2015 over 2 million people have re-watched SSU through this channel.

Over the SSU Series 11 broadcast period, iShamba received a total of 61,293 SMS, phone and WhatsApp inquiries following broadcast of the series. On average this amounts to 2,292 engagements per episode. The iShamba platform has 511,827 subscribers (status 11/9/2021). During broadcast of Series 11 a total of 22,631 new customers were registered to the platform, averaging 905 new registrations per episode. Traffic to iShamba resulting from SSU 11 can be found in Appendix 2 and 3.

Table 1 iShamba traffic during broadcast period

SMS Received (Total)	48,183
Incoming Calls (Total)	3,561
WhatsApp Questions (Total)	9,549
Total	**61,293**

Facebook and Twitter

The Shamba Shape Up Facebook page[1] has a total following of 77,524, of which 30% are women and 70% are men. Followers are generally young, with one third (30%) aged 25-34 and another 21% aged 35-44. Over the broadcast period, the page earned over 3,300 new followers (13.6% increase from 2020). Prior to the Saturday and Sunday airing of Shamba Shape Up, each episode was promoted on Facebook using a short 20 seconds clip summarizing the episodes content. The promoted clips reached a total of 91,444 persons, which amounts to 3,657 per episode. The promotions elicited a total of 3,321 engagements (see Appendix 4 for Facebook engagement).

Over the course of 2021 the Shamba Shape Up Facebook page has elicited following engagement:

- 3,300 new followers (13.6% increase from 2020).
- 2,000 likes with 511,000 engagements (2,626% increase from 2020).
- 1.9M reach (611% increase from 2020).

The Shamba Shape Up Twitter page[2] engaged 770 new followers in 2021. The number of times users have been served with SSU tweets in their timelines is over 97,251 (impressions). The account has over 17,446 profile visits and over 313 mentions from other accounts.

4 LAND PREPARATION, PLANTING AND TREE MANAGEMENT

4.1 Soil testing

Very few small-scale farmers conduct soil tests– over eight in ten at each wave said they had not conducted a soil test. Despite the topic of soil testing and the advantages - in terms of improving yields - having been covered in *Shamba Shape Up* in several series, there is little evidence from all of the Knowledge, Attitude and Practice (KAP) surveys over the years that uptake has improved. The barriers remain those of cost/ benefit, knowledge of how to go about getting a soil test, where to get a test done and the resultant value of having a soil test.

Nonetheless, the topic of soil testing still generated significant interest amongst viewers who got in touch with the iShamba call center to ask questions around soil. 71% of traffic around the topic of soil was on soil testing.

[1] Shamba Shape Up Facebook: https://www.facebook.com/ShambaShapeUp/

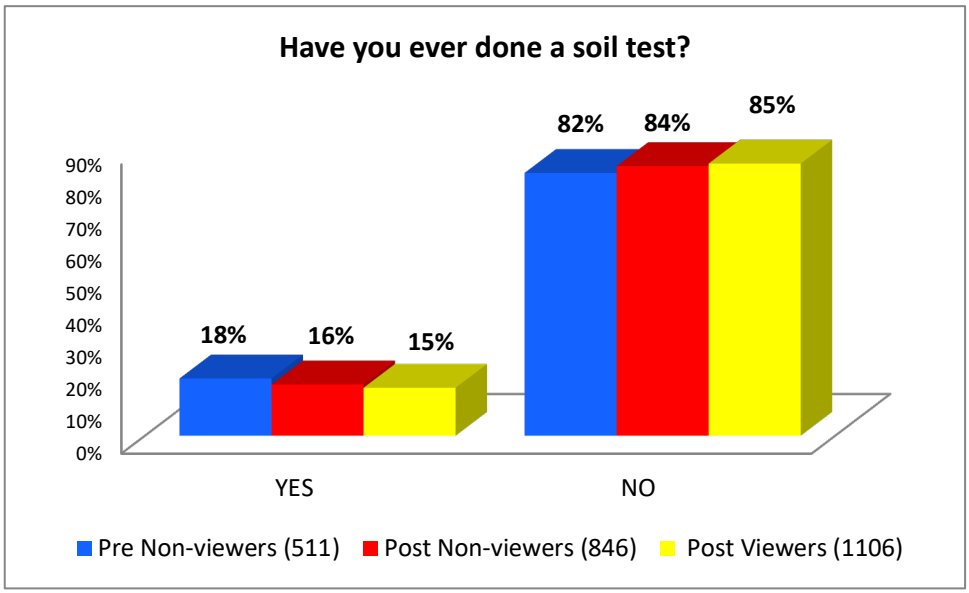
[2] Shamba Shape Up Twitter Handle: https://twitter.com/shambashapeup

iShamba Traffic: Soil

Topic	Total	%
Soil test	62	71%
Soil/crop nutrition	10	11%
Soil pH	16	18%

Figure 1: iShamba traffic on soil across SSU broadcast period

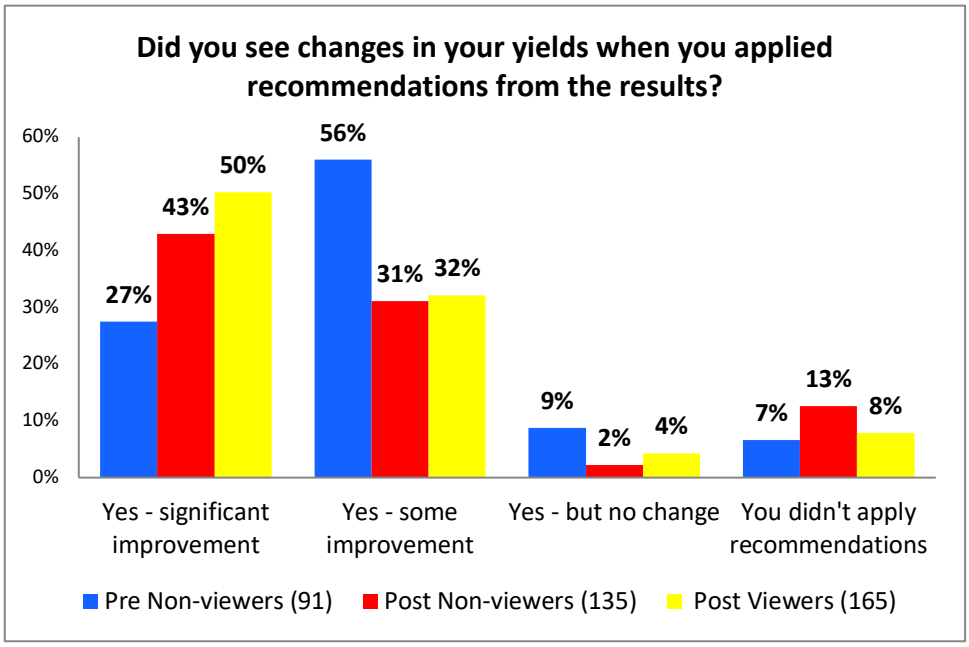
Chart 12: *Soil testing*



Among the minority who had done a soil test (around 15%) – most (50%) could not remember the name of the soil testing company they used and just mentioned either a Government Department or a Research Institute.

However, among those who had carried out soil tests (viewers and non-viewers alike), the majority reported improvements in yields after applying the recommendations from the result. Over four in ten reported significant improvement in yields and a further third (32%) reported at least some improvement. Highlighting the improved yields generated by those farmers who did soil tests may help to overcome the barriers or reservations most farmers have about conducting a soil test. **The self-reported 'significant' improvement in yields between viewers and non-viewers was impressive and maybe a useful finding to shape the focus of soil testing coverage in future series.**

Chart 13: ***Benefits of doing a soil test***

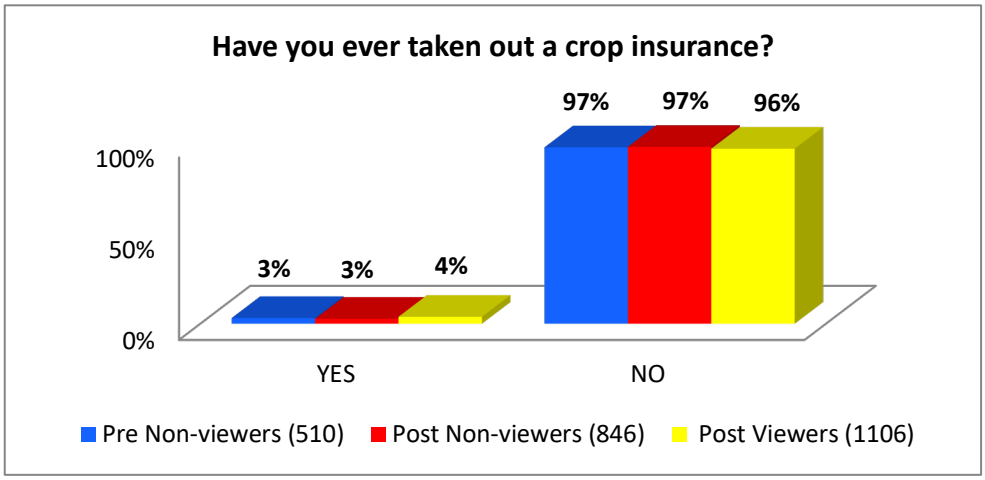


More coverage of where and how to go about getting a soil test and a clear demonstration of the benefits of soil testing and applying the recommended results in terms of improved yields might be the way to increase the take-up of this activity.

4.2 Crop Insurance

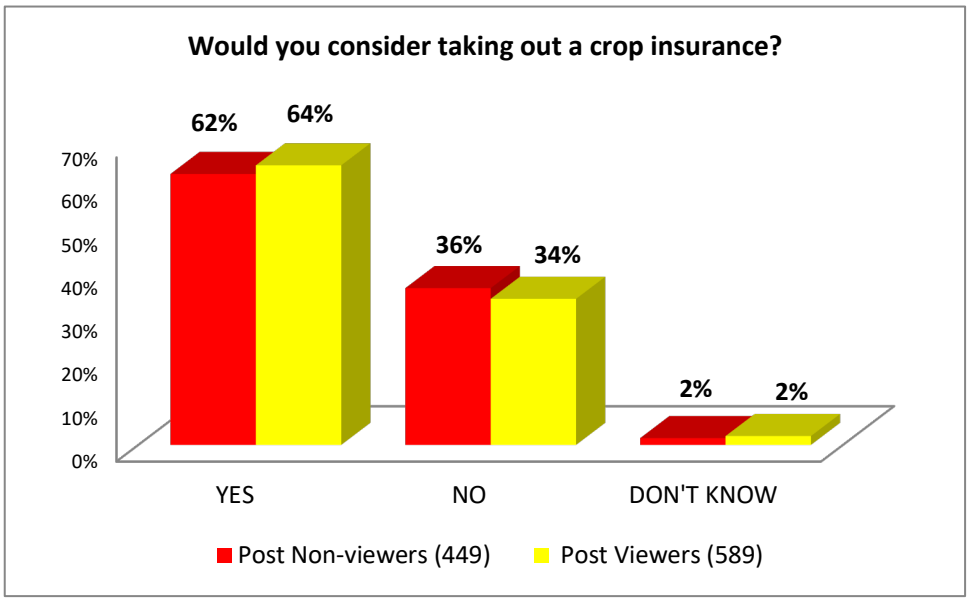
Only a tiny minority (3%) of smallholder farmers interviewed at each wave of the study said they had taken out crop insurance, and- among the tiny minority who had – most could not remember the name of the company they had taken out the insurance with. As such it is possible to conclude that crop insurance is very low on the agenda of smallholder farmers and is not something they have much interest in. In a similar way to soil testing, the barriers to taking our crop insurance lie in the lack of understanding of the cost and benefit and how to actually go about doing it.

Chart 14: ***Crop insurance***



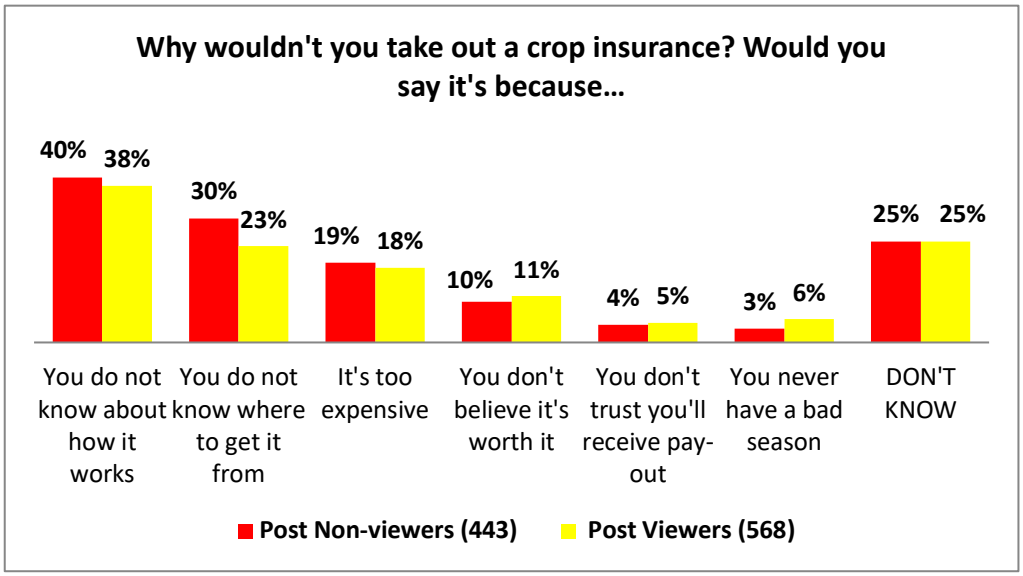
At the post-broadcast stages of the survey, respondents were asked if they would consider taking out crop insurance and a significant number of viewers and non-viewers alike said they would consider taking out crop insurance if they had more information about it. The biggest stumbling blocks appear to be that smallholder farmers do not know enough about how crop insurance works or where to get it from.

Chart 15: *Willingness to consider taking out crop insurance*



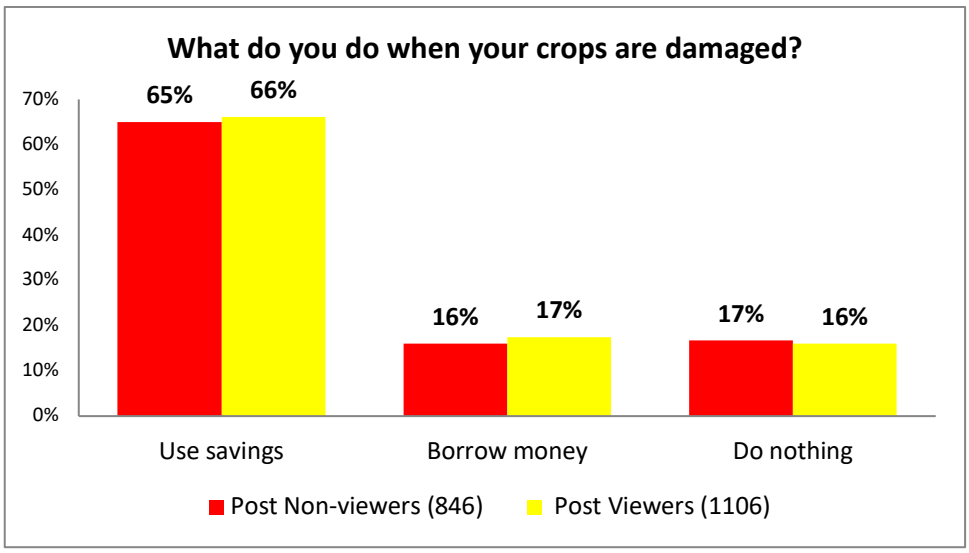
The data charted below illustrate the barriers to take up and show that the expense is not the key barrier, but more the lack of information on how crop insurance works and where to get it from *Shamba Shape Up* is an ideal vehicle, with its multiple platforms, to provide crop insurance information and advice and provide positive examples and testimonials. The fact that there are very few differences in opinion between viewers and non-viewers suggests that the content on crop insurance covered in the series is yet to have the kind of 'cut-through' required to have a positive effect on take up.

Chart 16: ***Barriers to taking out crop insurance***



In the post-broadcast waves of the survey questions were asked about what farmers did when their crops were damaged and most (66% - viewers and non-viewers alike) said that they used their savings; 17% said they borrowed money, with a similar proportion saying that 'they did nothing'. Messages around use of savings and the benefits of insurance may help to overcome some of the entrenched attitudes and barriers to the take up of insurance

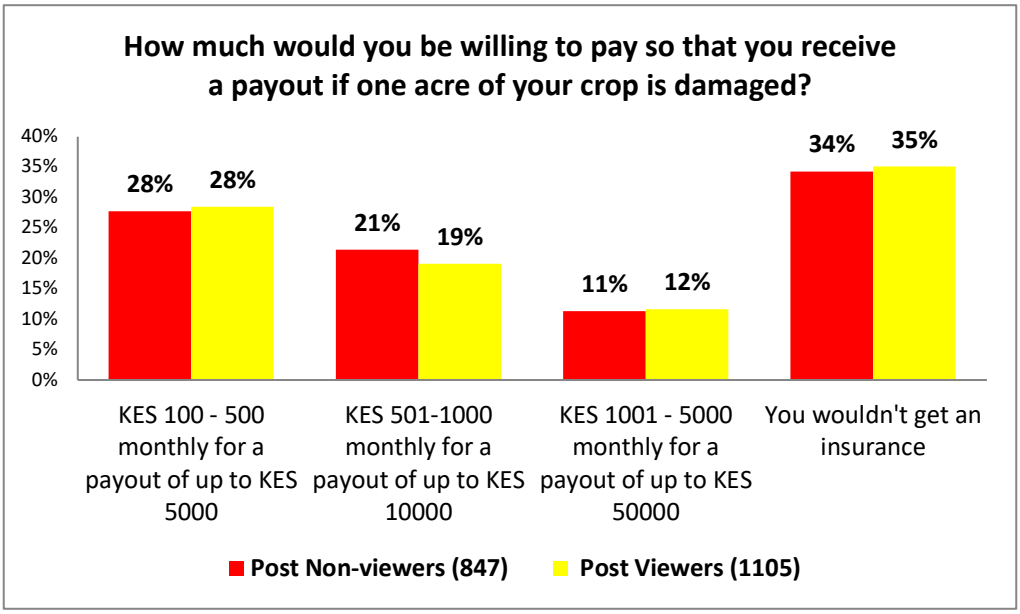
Chart 17: ***Strategies for dealing with damaged crops***



A hypothetical question was asked in the post-broadcast surveys about the amount these smallholder farmers might be willing to pay for one acre of crop insurance for differing levels of pay-out. A third of viewers and non-viewers alike said they "would not take out any insurance" just over one quarter (28%) opted for a monthly payment of KES 100 to 500 for a pay-out of up to 5,000 KES; 20% opted for a monthly payment of KES 501 to 1,000 for a pay-out of KES 10,000 and only one in ten opted for the highest level of KES 1001 to 5,000 for a pay-out of 50,000 KES.

Although speculative and showing remarkable consistency between viewers and non-viewers the data suggest that a modest crop insurance plan, well explained and easily available could encourage take up and be of genuine benefit to this profile of farmers.

Chart 18: ***Crop insurance investment***



Further, the data suggest that farmers are cautious about taking out crop insurance and struggle to see the value of it and because there were no differences in attitudes and opinions between SSU viewers and non-viewers the coverage of crop insurance in the series may not be coming across as persuasive enough. The production team may wish to review how issues around farming insurance are covered in the series and emphasise more clearly how crop insurance actually works, its benefits and advantages, the costs, value for money and advice on where and how to get it.

iShamba Traffic: Crop insurance

Despite a low uptake of insurance so far, the iShamba audience traffic shows that the programme generated interest on the topic and that viewers are seeking further information on accessing information on insurance. Throughout the 4 episodes aired, iShamba received 70 queries asking about crop insurance. The majority of questions on crop insurance, which make up the 77% are: What's crop insurance? How can I get crop insurance? Tell me more about crop insurance?

Responses generated: 70

Topic	Total	%
Crop insurance	54	77%
Livestock Insurance	6	9%
General Insurance questions	10	14%

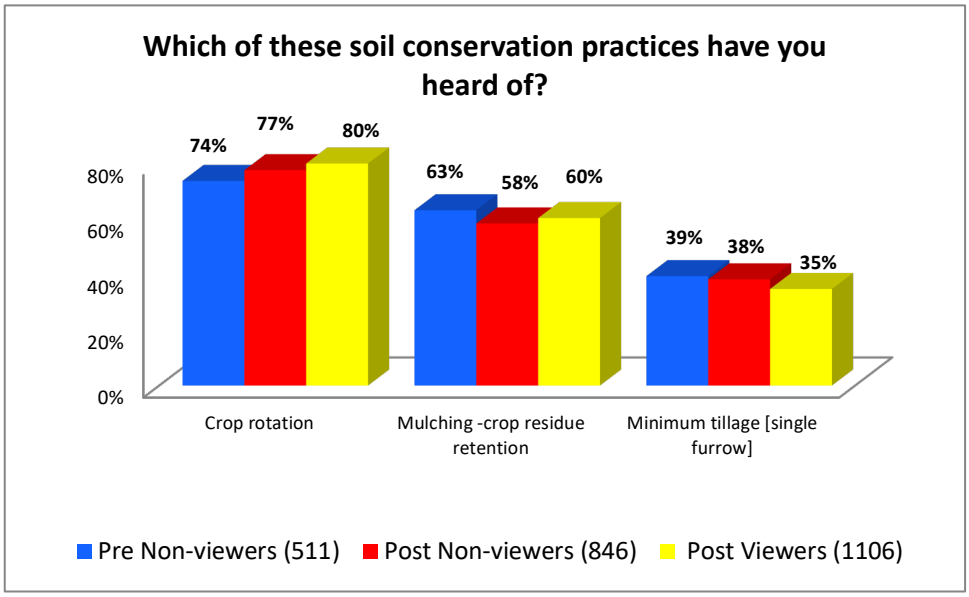
Figure 2: iShamba traffic on crop insurance across SSU broadcast period

4.3 Awareness and practice of soil conservation methods

Almost all (90%) of the farmers surveyed claimed to be aware of soil conservation practices. There was a very slight, but not significant difference of three percentage points in soil conservation awareness between the pre-broadcast non-viewers (87%) and the post-broadcast viewers (90%).

The majority (around eight in ten) small holder farmers claimed to have heard of crop rotation. Mulching/ crop residue retention was known by around six in ten of smallholder farmers at each survey wave, with considerably fewer having heard of minimum tillage/ single furrow (around 35%) as a soil conservation practice. There was a small, but significant difference in awareness of crop rotation between the pre-broadcast non-viewers (74%) and viewers (80%) with a slight corresponding decrease in awareness of minimum tillage as a soil conservation method (39% of pre-broadcast non-viewers were aware compared with 35% of post-broadcast viewers).

Chart 19: ***Awareness of soil conservation practices***



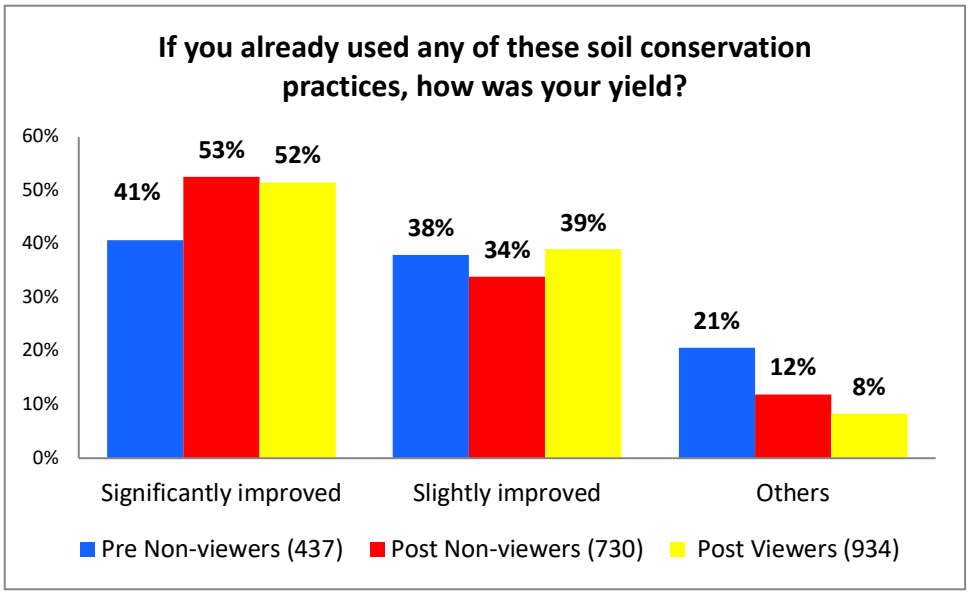
Farmers' main sources of awareness for the soil conservation practices they were aware of were:

- School or training institutes
- Training by field staff/ extension officers
- Friends and family

Television, as a source, was mentioned by relatively few, just over 10% viewers and just under 10% of non-viewers.

Much as overall levels of awareness about soil conservation practices between SSU 11 viewers and non-viewers were minimal, there was a significant uplift in practice between the pre- and post-broadcast farmers. Almost one in five pre-broadcast respondents said they had not used any soil conservation methods, compared with less than one in ten post-broadcast viewers. For the majority, who had practiced soil conservation measures, significant improvements in yields were reported.

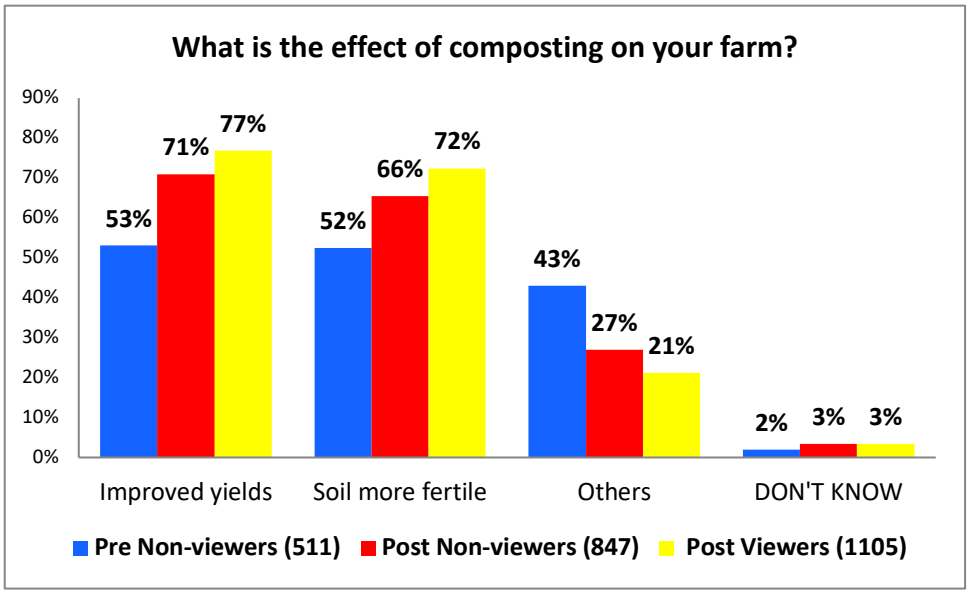
Chart 20: ***Post soil conservation improvements in yields***



Messages about the importance and benefits of adopting soil conservation messages are being well understood and good practice is being followed. Future programming may wish to consider re-enforcement messages now that the good practices appear to be widespread.

Many more SSU viewing farmers said they used compositing on their farms than the non-viewers and that their yields and soil had improved as a result. The data suggest that SSU is having a positive effect on conveying messages about compositing and that the results from those farmers who practice it are positive in terms of better yields and more fertile soil. Very positive messages to carry on through future series.

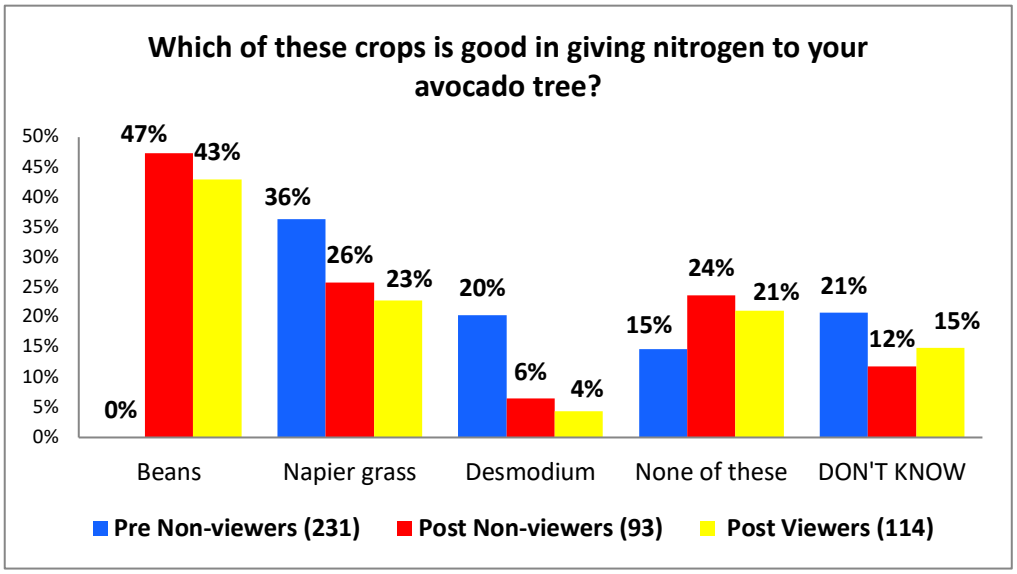
Chart 21: ***Effect of compositing on yields***



4.4 Avocado tree management

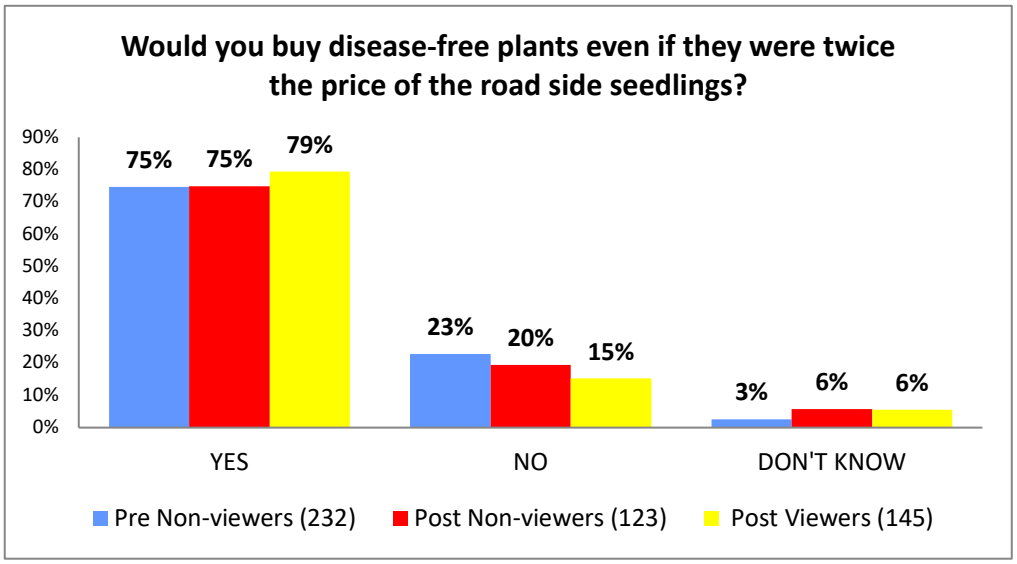
In response to a prompted, read-out, question about the crops that are good at providing avocado trees with nitrogen, there were some pre-broadcast and post-broadcast differences in knowledge. At the post-broadcast stage, beans were added into the read-out list of options and a high proportion of viewers and non-viewers each mentioned beans as good at giving nitrogen to avocado trees. Napier grass and desmodium were mentioned by significantly more non-viewers pre-broadcast than at the post-broadcast stage. It could be argued that the changes to the way in which the administration of this question were implemented may render the wave-on-wave comparisons non-comparable.

Chart 22: ***Awareness of crops good at providing nitrogen to avocado trees***



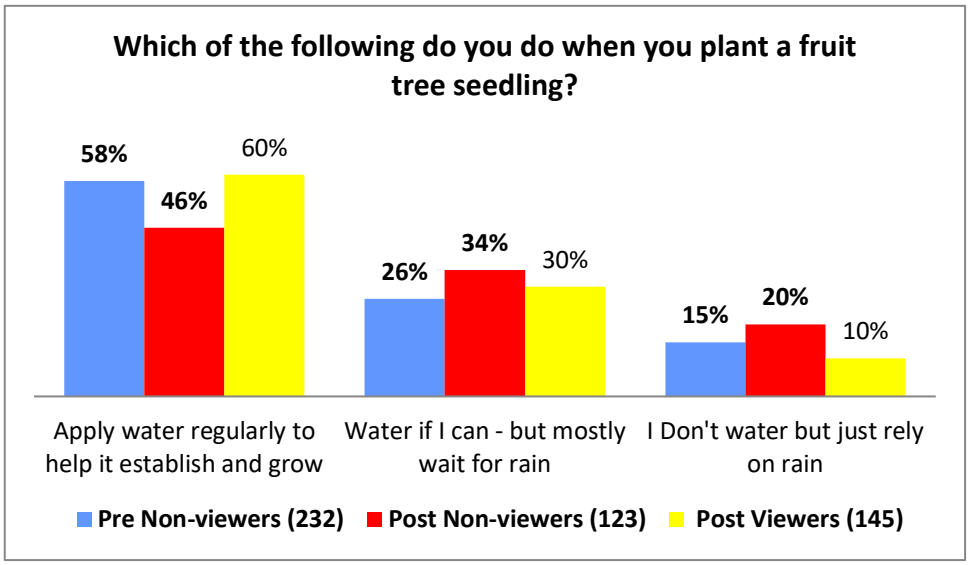
Practice with regards to buying disease free plants – even if they were twice the price of the road-side seedlings appears to be well-established – almost 80% pre and post broadcast respondents said they would buy disease free plants. As can be seen from the chart, the intention to buy disease-free plants was slightly higher among SSU 11 viewers than non-viewers.

Chart 23: ***Buying disease-free plants***



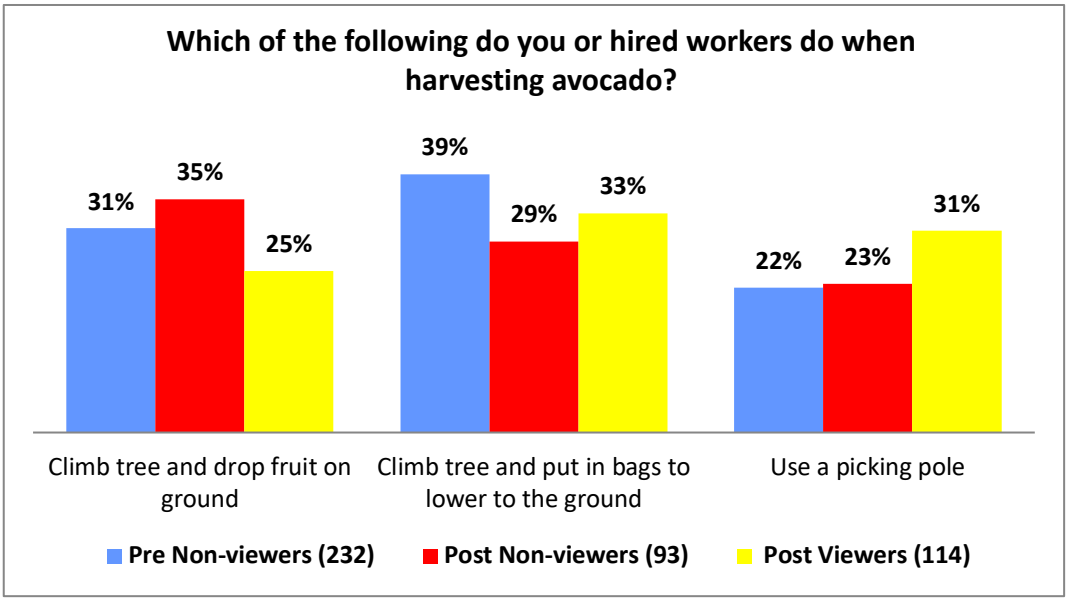
Further, most (60%) of SSU viewers said they would water their seedlings regularly to help them establish and grow. Post-broadcast non-viewers were more likely than their viewing counterparts to wait for rain. The information conveyed in the series about how to water fruit tree seedlings appears to have resonated well with viewers and had a positive impact on their knowledge and practice.

Chart 24: ***Irrigating fruit tree seedlings***



When harvesting their avocados SSU viewers are more likely to use a picking pole than are their non-viewing counterparts and less likely to climb the tree and drop the fruit onto the ground. Messages around the best way to harvest avocados appear to be making a difference in the way the fruits are being harvested.

Chart 25: ***Harvesting avocados***



iShamba Traffic: Avocado Management

The iShamba Audience traffic data showed a significant interest in the topic of avocado management throughout broadcast of this Series. A total of 224 responses were generated via SMS and WhatsApp.

Nearly one third of the questions focused on source of seedlings with interested persons asking where to buy seedlings in general and some people asking where to get the best/certified seedlings from. Harvesting questions were focused on how to harvest. A couple of the management questions from WhatsApp featured photos of avocado trees, which were decaying due to bacteria. Nearly all SSU episodes covered or at least mentioned the relevance of getting disease free seedlings, which seems to be a message that resonated with the audience.

Topics that arose	Total	%
Source of seedlings	81	36%
Harvesting	79	35%
Management	25	11%
Avocado Varieties	19	9%
Markets	11	5%
Maturity Period	6	3%
Grafting Avocados	3	1%
Total	**224**	**100%**

Figure 3: iShamba traffic on avocado management across SSU broadcast period

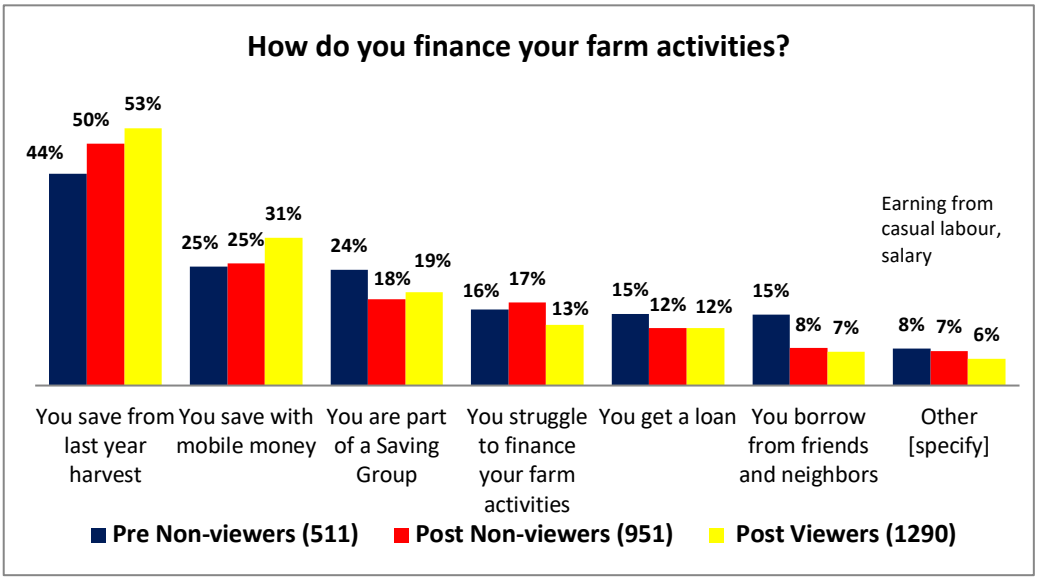
These findings show that farmers continue to gain knowledge on the importance of planting quality seedlings however there is need for continued education on watering and nurturing seedlings and on the most efficacious methods of harvesting avocados.

5 FINANCE, CROP MANAGEMENT AND NUTRITION

5.1 Financing farm activities

Most small-scale farmers finance their farm activities through either 'savings from the previous year's harvest' or through 'savings methods', such as through a savings group or with their mobile money savings. There is a significant difference between the financing methods used by SSU viewers and non-viewers. Slightly more viewers (53%) than non-viewers (pre-broadcast 44% and post-broadcast 50%) said they used their savings from last year's harvest to finance their activities and fewer said they borrowed money or took a loan. Around one in six smallholder farmers said that they struggled to finance their farming activities. Interestingly, though, the differences in financing farming activities varied very little between SSU viewers and non-viewers and did not evidence differences in financial literacy or behaviour between the two groups.

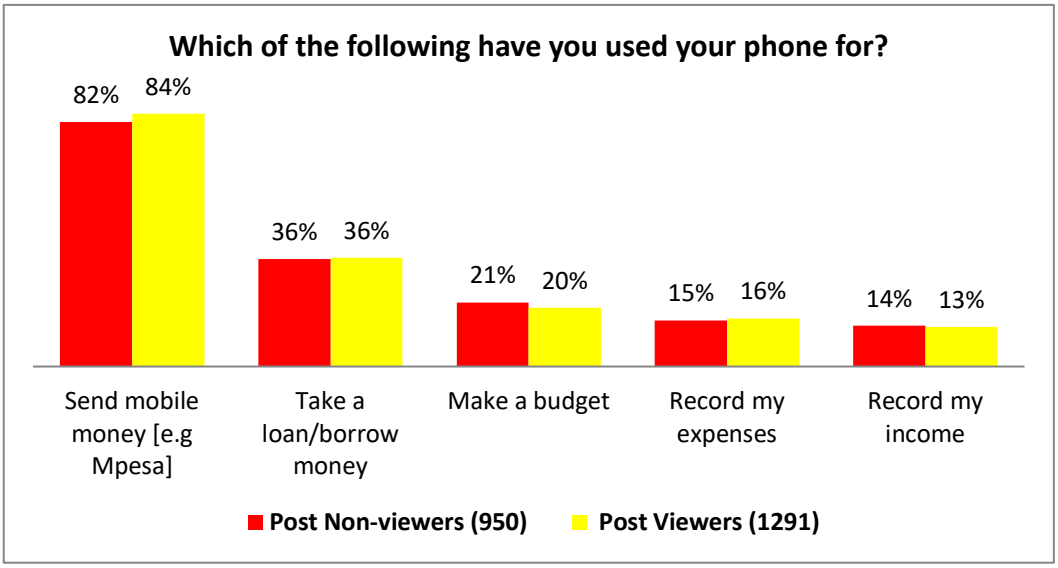
Chart 26: *Financing farm activities*



5.2 Financial literacy

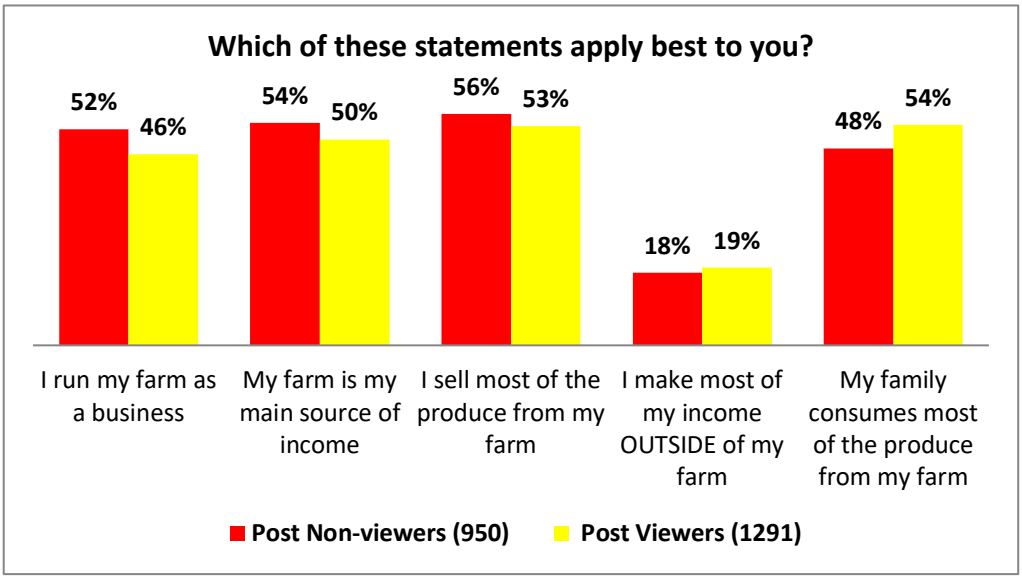
In the post-broadcast survey three questions were asked to ascertain farmers' financial literacy and managing their farms as businesses. The first asked about mobile phone uses and showed that over 80% of farmers – regardless of their viewing to SSU- use their mobile phones to send money (e.g. Mpesa); a third use their phones to borrow money or take a loan and around one in five use their phones to make a budget. Very few use their phones for recording their expenses or their income. There were no differences between viewers and non-viewers in using their mobile phones for financial or money management purposes.

Chart 27: *Financial uses of mobile phones*



In response to a number of pre-coded statements about how farmers run their farms there were only slight differences between SSU viewers and non-viewers. In this survey, slightly more farmers who were SSU viewers said that their families consumed most of the produce from the farm (54% of viewers vs 48% non-viewers), while slightly more non-viewers (52%) than viewers (46%) said they run their farms as a business and that their farm (54% v 50%) is their main source of income. The findings suggest that more messages, information and content around the financial and business aspects of farming are required to advise and help more farmers understand and exploit the business aspects of their farming activities.

Chart 28: *Farming as a business*



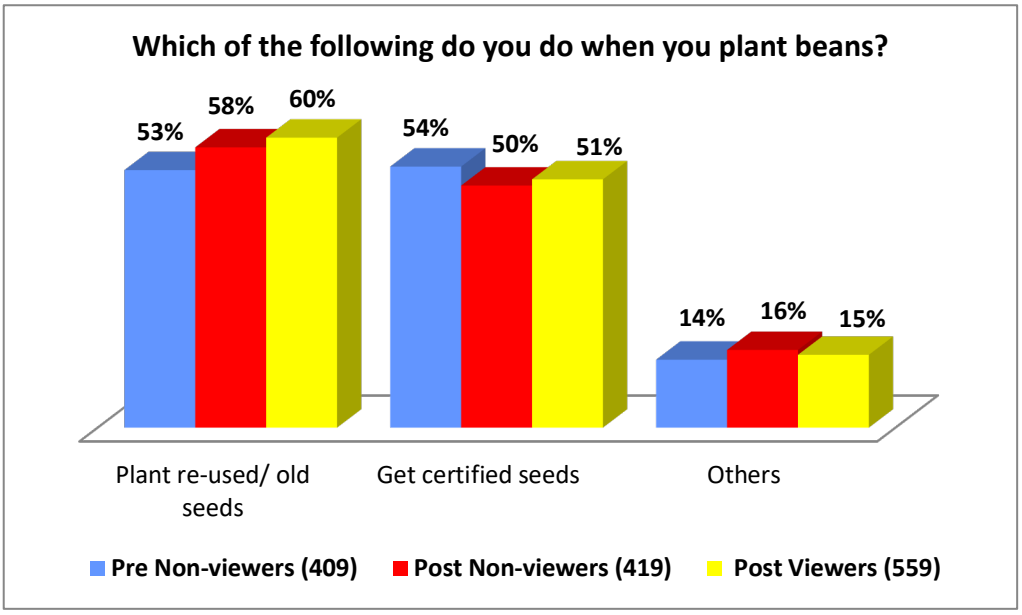
Two-thirds of the post-broadcast samples (63% of both viewers and non-viewers) said they just grow their crops or keep their livestock in the hope that they will find a market when the time comes. 39% of viewers and 38% non-viewers said that they plan ahead and know where they will sell their produce.

It would seem, from these data that the financial, planning and budgeting capacity of farmers is still not very advanced and that more needs to be done to improve farmers' financial management and marketing acumen.

5.3 Crop management

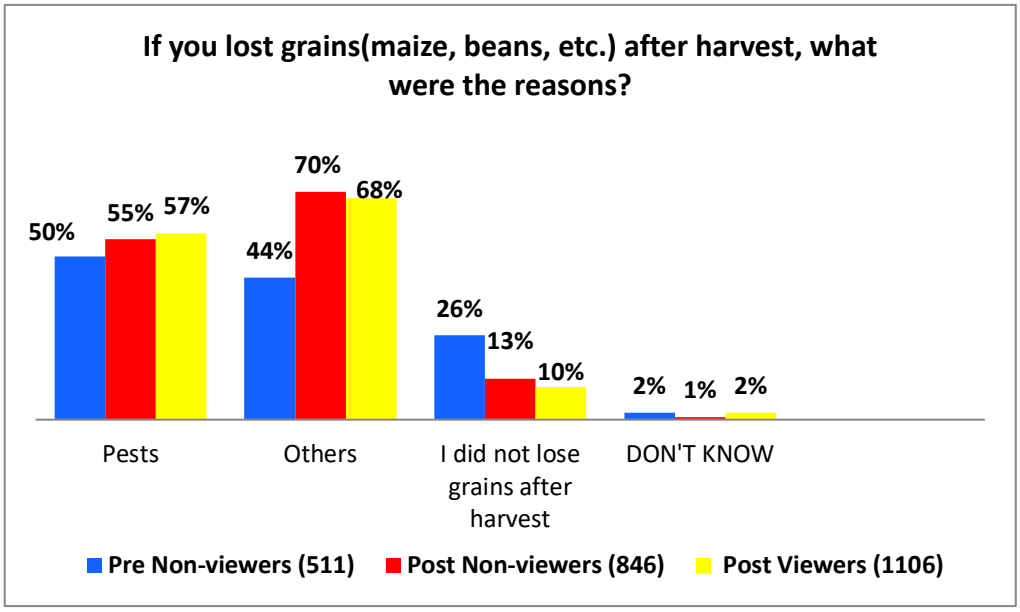
When planting beans farmers tend to re-use old seeds or get certified seeds. Slightly more SSU viewers said they would plant using old seeds or re-use seeds than would their non-viewing counterparts. Half of all the farmers surveyed said they would get certified seeds when planting beans.

Chart 29: *Seeds used for planting beans*



Most farmers said they lost grains after harvest (75% pre-broadcast respondents: 87% post-broadcast non-viewers and 90% of post-broadcast viewers). Pests account for losses for over one half of farmers with other reasons such as rotting, dampness and theft accounting for very high proportions. With so many farmers experiencing losses more content around protecting post-harvest crops would be useful.

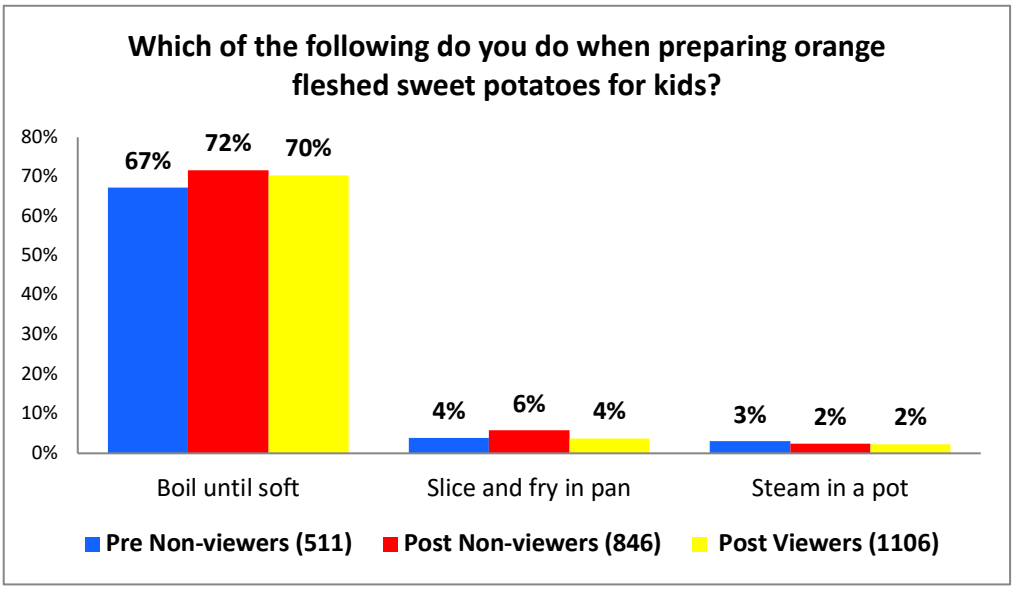
Chart 30: ***Reasons for lost grains***



5.4 Orange fleshed sweet potatoes

When asked how they prepared orange fleshed sweet potatoes for children there were no real pre-broadcast and post-broadcast/ viewer and non-viewer differences with a large majority saying they would 'boil them in a pan until soft'. Frying and steaming hardly featured as a method of preparation.

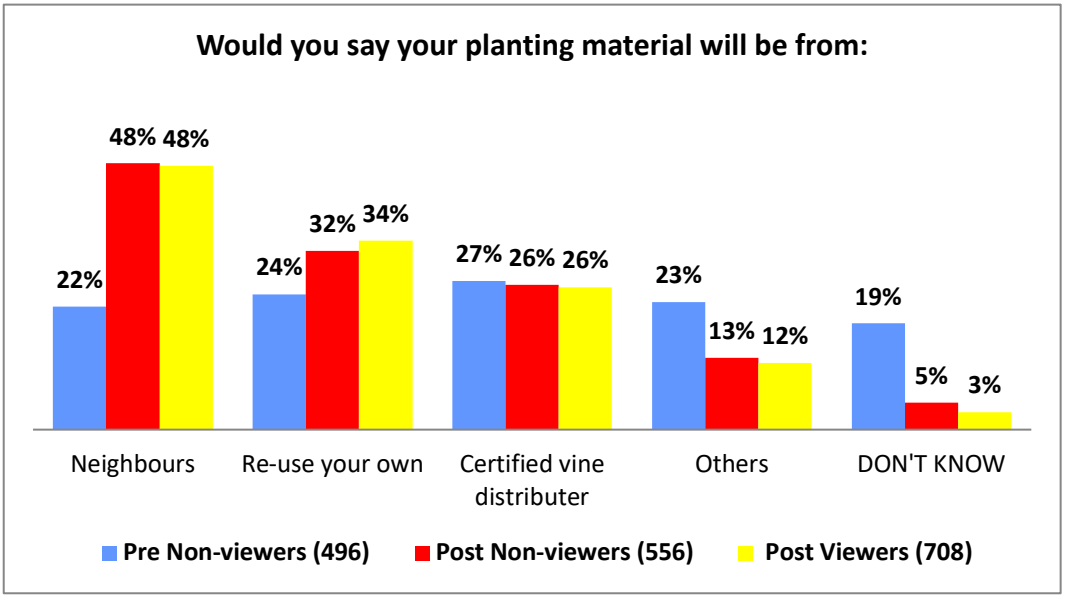
Chart 31: ***Preparing fleshed sweet potatoes***



When planting and growing orange fleshed sweet potatoes – relatively few (around 20%) of the post-broadcast samples said they would plant them because there is a good market value for them – the decision to plant was more out of habit – they usually plant them (40% of post-broadcast non-viewers compared with 36% of viewers).

More farmers – and especially those in the post-broadcast samples will plant using materials from their neighbours (just under 50%), than from re-using their own planting materials or using a certified distributor. SSU recommended using planting materials from a certified distributor, but the message has not yet been fully taken up by viewers. One can speculate as to the reasoning for this. Access to certified distributors or financing of quality planting materials could be part of the reason.

Chart 32: *Source of planting material*



iShamba Traffic: Orange Fleshed Sweet Potato

The iShamba platform saw 148 queries come relating to orange fleshed sweet potatoes throughout the broadcast period. One third of these evolved around growing sweet potato and sweet potato varieties. This was followed by nearly one third querying source of vines (30%) and multiplying of vines (13%).

Topic	SMS	WhatsApp	Percentage
Growing sweet potatoes & Sweet potato varieties	44	3	32%
Source of vines	39	5	30%
Multiplying Vines	19	0	13%
Value addition	18	0	12%

General questions (Management, Suitable conditions, what is a vine)	7	3	7%
Maturity Period	8	0	5%
Market	2	0	1%
Total	**137**	**11**	**100%**
Grand Total	**148**		

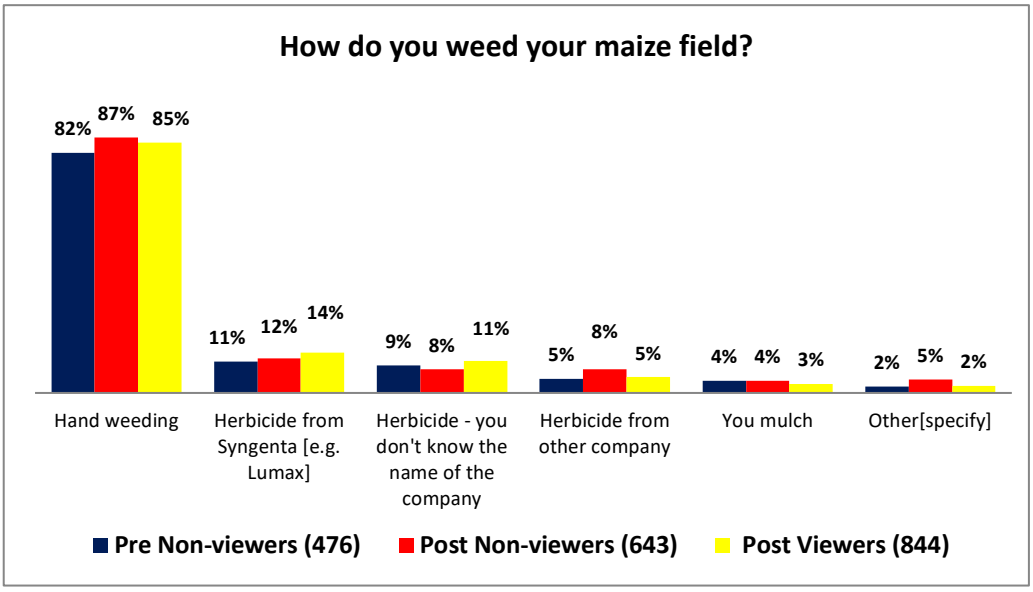
Figure 4: iShamba traffic on orange fleshed sweet potato across SSU broadcast period

6 PESTS AND DISEASE MANAGEMENT

6.1 Pest control

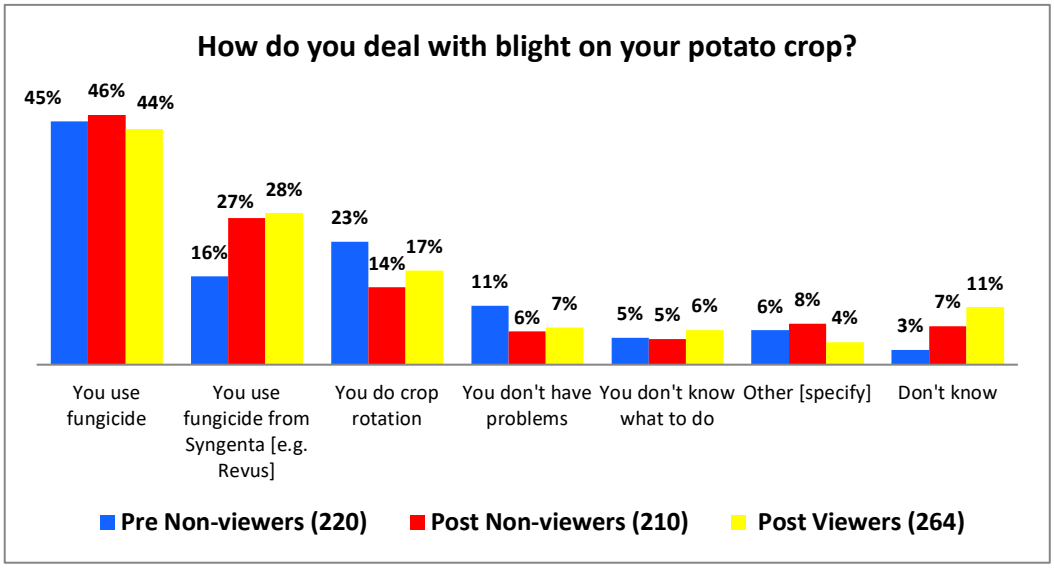
Minimal differences in weeding maize fields and managing pests were recorded between the pre and post-broadcast surveys. The vast majority (over 80%) of smallholder farmers hand weed their maize fields, with very few claiming to use herbicides. Using herbicides from Syngenta was mentioned by around 10% at all waves, with no significant differences between SSU viewers and non-viewers.

Chart 33: *Weeding maize fields*



When dealing with blight on potatoes, just under one half of the samples at each wave said they used fungicides, with Syngenta fungicide being specifically mentioned by post-broadcast viewers and non-viewers. Slightly more post broadcast viewers (17%) than post broadcast non viewers (14%) said the practiced crop rotation to deal with blight.

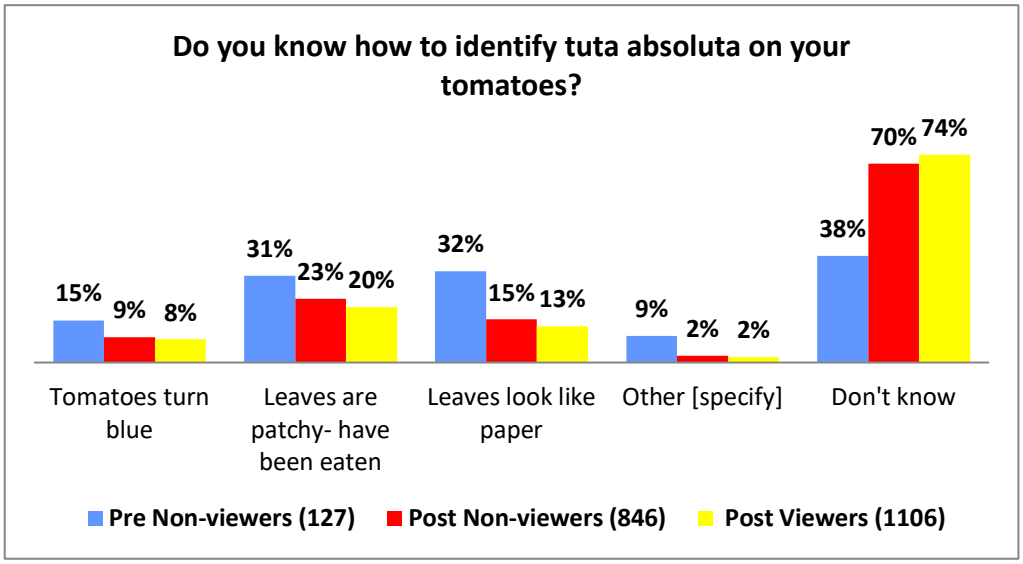
Chart 34: *Dealing with potato blight*



6.2 Identifying tuta absoluta in tomatoes

This topic was covered in the series once only. Over seven in ten post-broadcast viewers and non-viewers said they did not know how to identify it. The pre-broadcast and post-broadcast differences are significant, but it is unclear as to why.

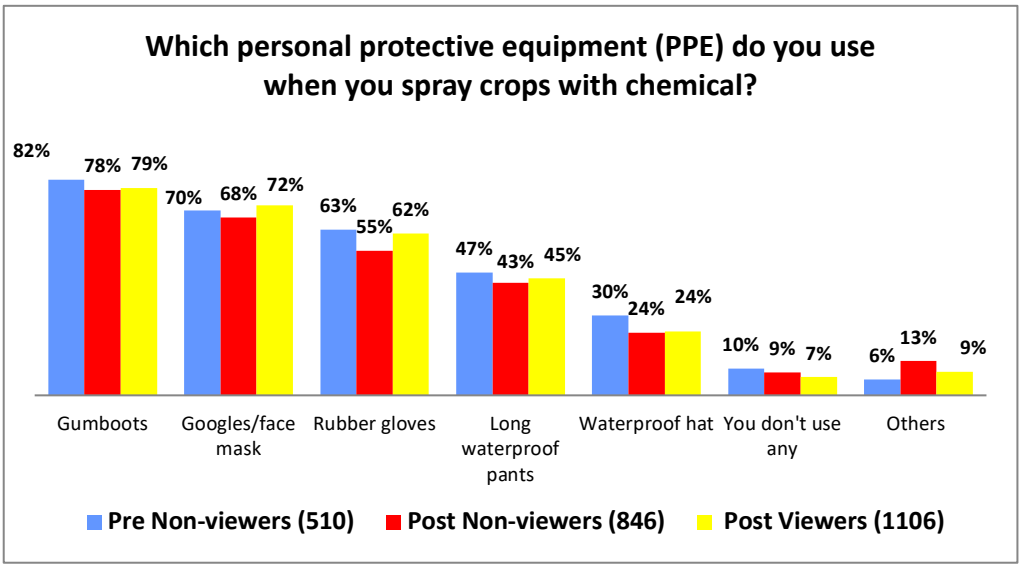
Chart 35: *Identifying tuta absoluta on tomatoes*



6.3 Identifying tuta absoluta in tomatoes

When crop spraying most small-scale farmers use gumboots (around eight in ten), wear goggles or a face mask (around seven in ten) and wear rubber gloves (around six in ten). The data showed no significant pre/ post-broadcast differences or differences between viewers and non-viewers (the only significant difference is in the use of rubber gloves – 55% non-viewers and 62% viewers).

Chart 36: ***Use of PPE when spraying crops***



iShamba Traffic: Pests & Diseases

The iShamba platform saw a significant interest on the topic of pest and diseases over the broadcast period. Topics that generated most interest were fungicides (26%), insecticides (24%) and seed varieties (16%). These are areas, which the programme makers could concentrate future programming on.

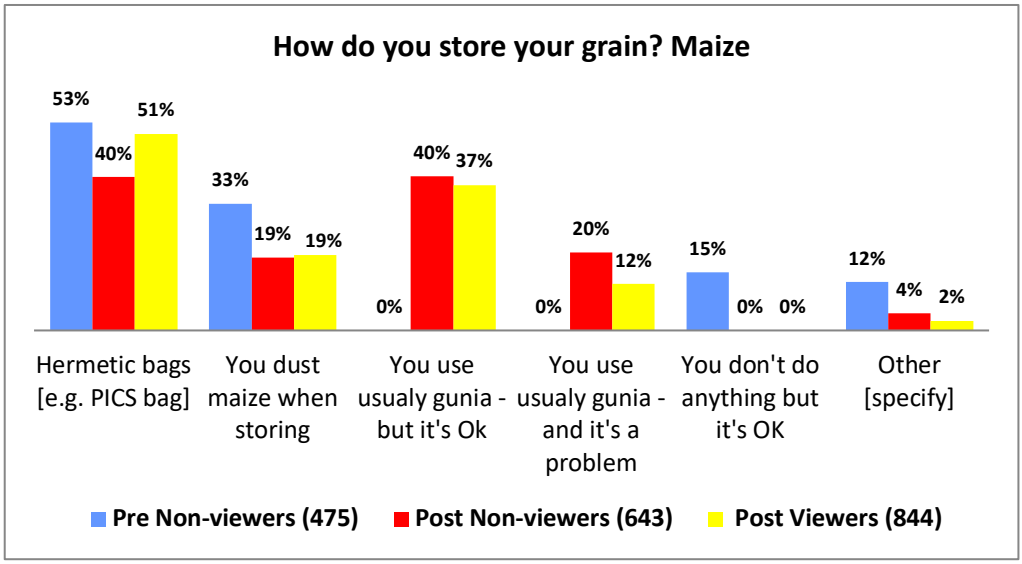
Topic	SMS	WhatsApp	Percentage
Fungicides	66	23	26%
Insecticides	61	21	24%
Seed Variety	53	2	16%
Pesticides	42	8	15%
Herbicides	29	6	10%
Grain preservation	19	2	6%
General questions	4	1	2%
Total	**274**	**63**	**100%**
Grand Total	**337**		

Figure 5: iShamba traffic on pest & diseases across SSU broadcast period

6.4 Maize storage and use of push-pull

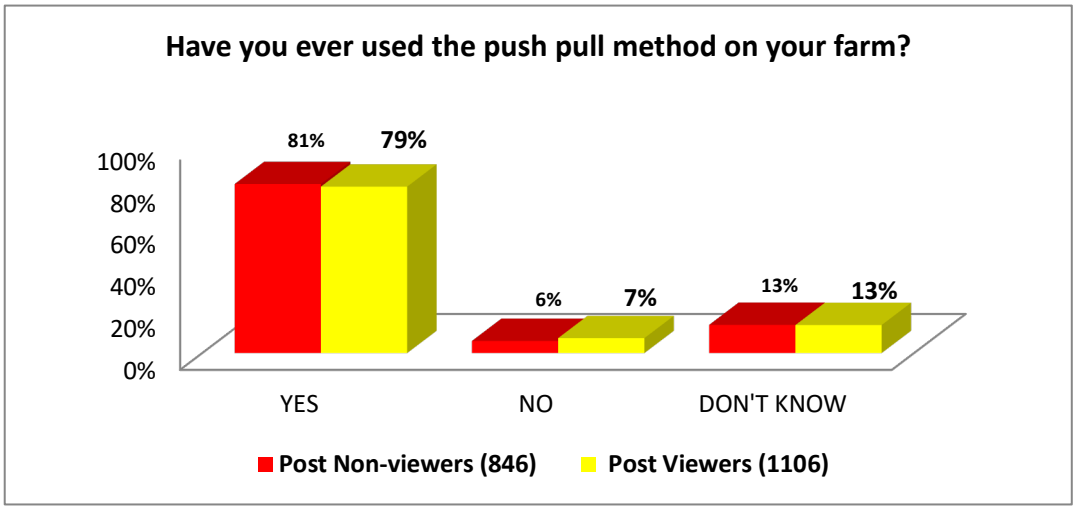
In the storage of maize around one half of pre-broadcast non-viewers and viewers said they used hermetic bags. Viewers of the programme showed 10% higher usage of hermetic bags compared to post-broadcast non-viewers (40%), which can indicate that this message was taken up by viewers of SSU. The use of gunia was not a read-out option in the pre-broadcast wave of the study which is why there are no figures for its use in the chart, but post-broadcast around 40% said they used gunia and it was OK with half as many saying they used gunia, but it was a problem.

Figure 37: Storing maize



The vast majority of the post-broadcast farmers (around 80%) said that they had never used the push-pull method on their farm. There were no differences in reported use of this practice between SSU 11 viewers and non-viewers.

Chart 38: *Use of the push pull method*

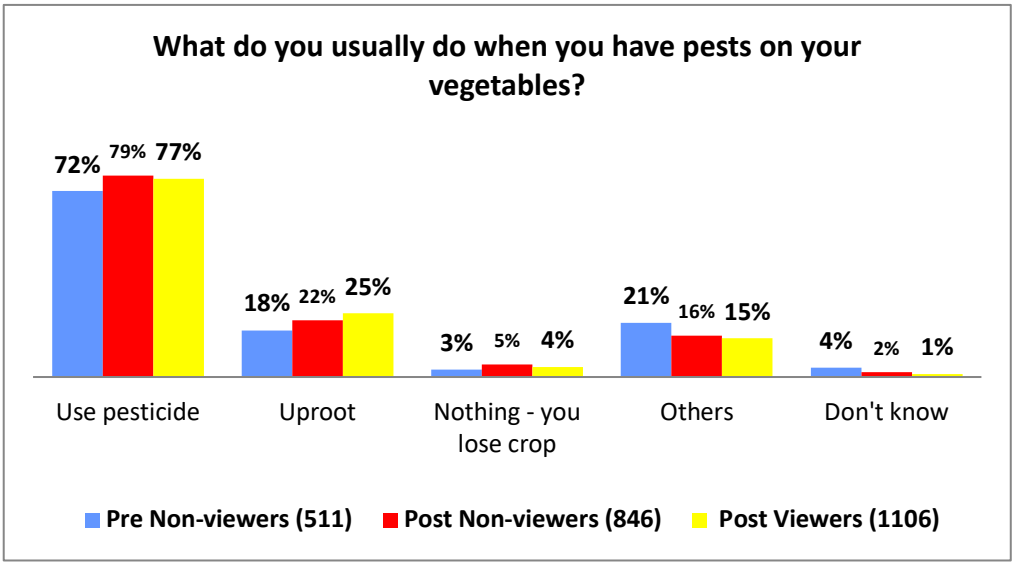


Among the few who did mention using push-pull, the use was for vegetables (around 60% of viewers and non-viewers alike) and for striga weed (34% viewers and 31% non-viewers)

6.5 Dealing with pests on vegetables

The most common method of dealing with pests on vegetables is to use pesticides (over 70% of all surveyed). A slightly higher proportion of SSU 11 viewers (than pre-broadcast non-viewers) said they would uproot their vegetables when pests attacked them.

Chart 39: *Dealing with pests on vegetables*



iShamba Traffic: Push Pull

There were two episodes broadcast on the topic of push pull as a way of controlling fall army worm on vegetables. There were only 29 inquiries following this topic. This is in line with general research over the past 10 years of Shamba Shape Up, which shows that the more a topic is communicated, the higher the uptake. Most (41%) inquiries related to the episode on push pull for fall army worm attack.

Topic	SMS	WhatsApp	Percentage
Push-Pull on FAW attacks	12	0	41%
Push-Pull on Vegetable farms	7	3	35%
Push-Pull on Striga weeds	5	1	21%
Source of Desmodium	1	0	3%
Total	**25**	**4**	**100%**
GRAND TOTAL	**29**		

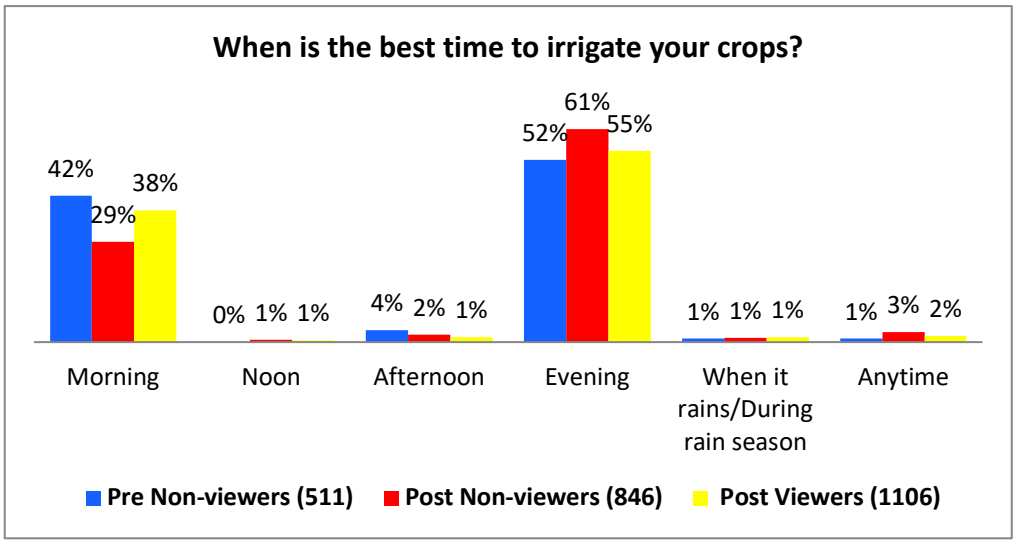
Figure 6: iShamba traffic on push pull across SSU broadcast period

7 IRRIGATION

7.1 Best times to irrigate crops

When asked about the best time to irrigate crops, the times of the day which elicited any responses were morning and evenings. Over a half opted for evenings and around a third opted for mornings and there were no significant differences between viewers and non-viewers in this practice. This is a good result, as mornings and evenings are generally the recommended times for irrigating crops. It looks like this is a practice that is already widely adopted amongst farmers and as result need little less repetition in future programming.

Chart 40: *Best times to irrigate crops*

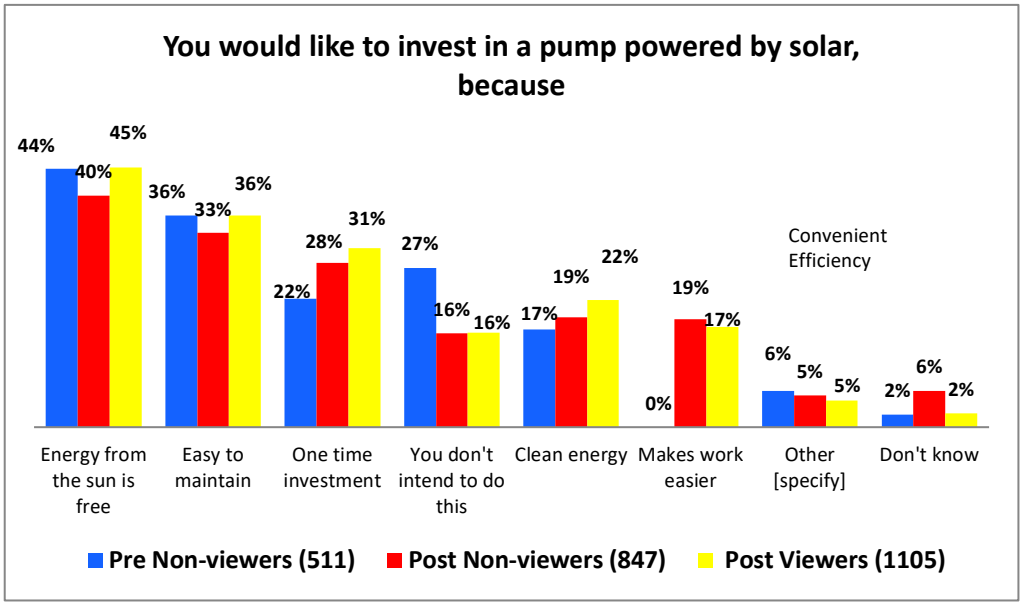


Most irrigate by manually fetching water (around 60%) with a minority (at all waves) saying they rely on rainfall or a diesel pump.

7.2 Investing in a solar pump

More post-broadcast viewers (84%) would like to invest in a solar pump than pre-broadcast non-viewers (73%) would like to invest in a solar pump for irrigation. All farmers surveyed recognised the benefit of capturing free energy from the sun and their easy maintenance. Viewers were somewhat more persuaded by the one-off investment opportunity and the fact that solar pumps were clean energy sources.

Chart 41: Investing in a solar pump



iShamba Traffic: Solar powered irrigation

The topic of solar powered irrigation elicited a significant response of a total 250 SMS, WhatsApp and E-mail queries on the iShamba platform. A large part (40%) of question evolved around sourcing the kit, an additional 12% asked specifically for contacts of SPIS suppliers. One third of questions evolved around understanding what SPIS is, what the water use is and general set up.

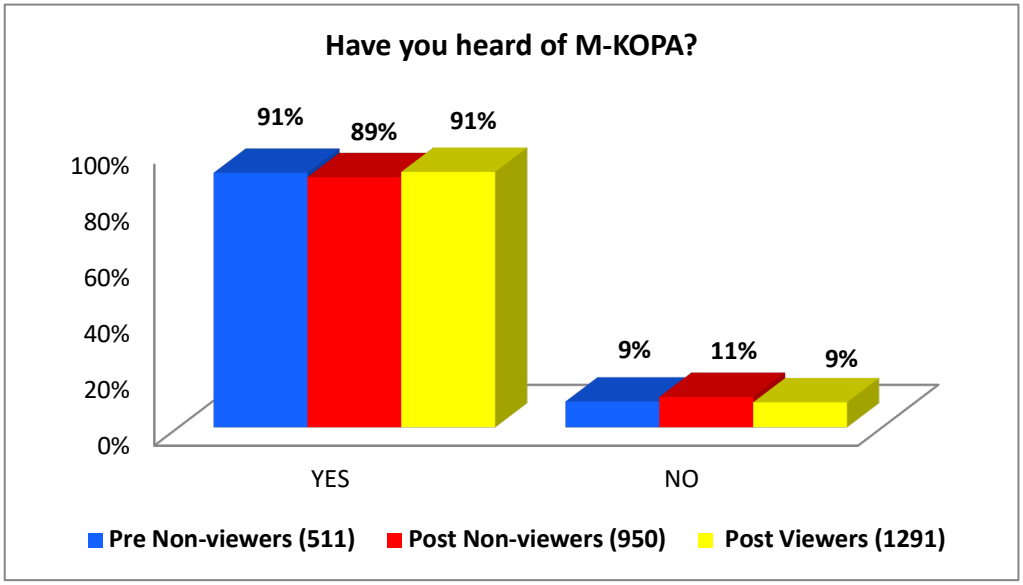
Topic	SMS	WhatsApp	Percentage
Source of the irrigation Kit	93	6	40%
General questions (What is SPIS, How it works, More information on the system)	70	4	30%
Cost of Setting up	42	1	17%
Installation	3	1	2%
Supplier Contact	26	4	12%
Total	**234**	**16**	
Grand Total	**250**		**100%**

Figure 7: iShamba traffic on solar irrigation across SSU broadcast period

7.3 M-KOPA brand awareness and ownership of a water tank

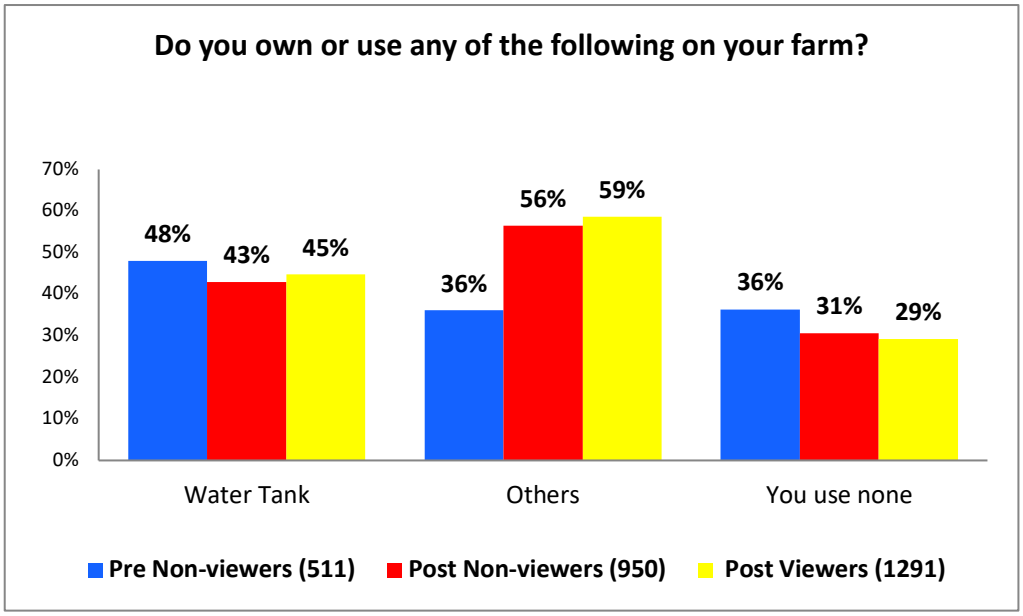
M-KPOA brand awareness was very high, across the board at around 90%.

Chart 42: *Awareness of M-KPOA*



Water tanks are owned by just under half of all farmers.

Chart 43: *Ownership of water tanks*



iShamba Traffic: Mkopa Brand

The three episodes broadcast elicited much interest on the water tanks. 97% of the 165 queries that came in to iShamba platform evolved around the water tank, with most persons asking how to obtain the tank. In these instances, iShamba referred persons to the Mkopa customer service.

Topic	Total	%
Water tank	160	97
Farmer phone	5	3
Total	**165**	**100%**

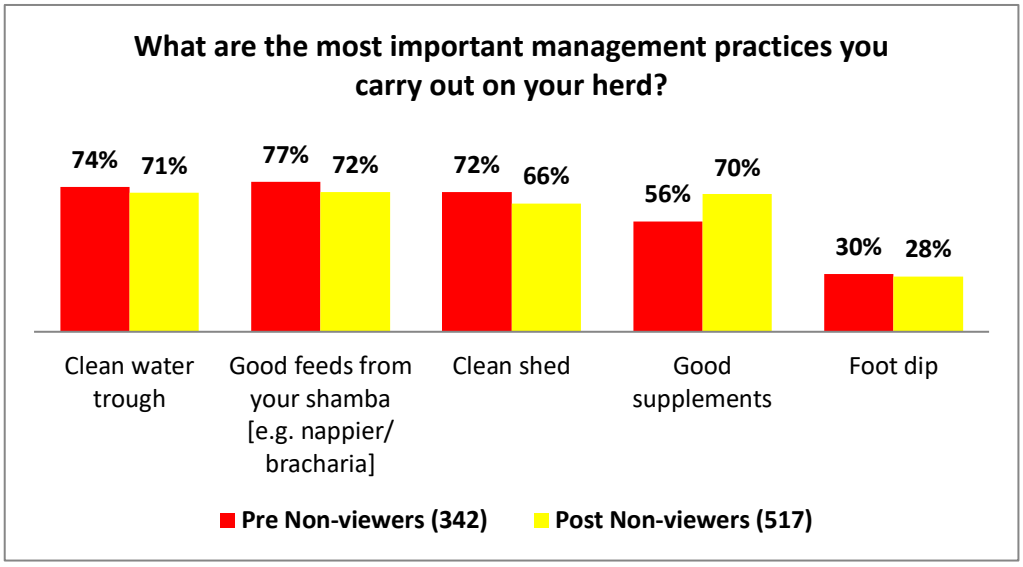
Figure 8: iShamba traffic on Mkopa products across SSU broadcast period

8 LIVESTOCK AND FODDER

8.1 Livestock management practices

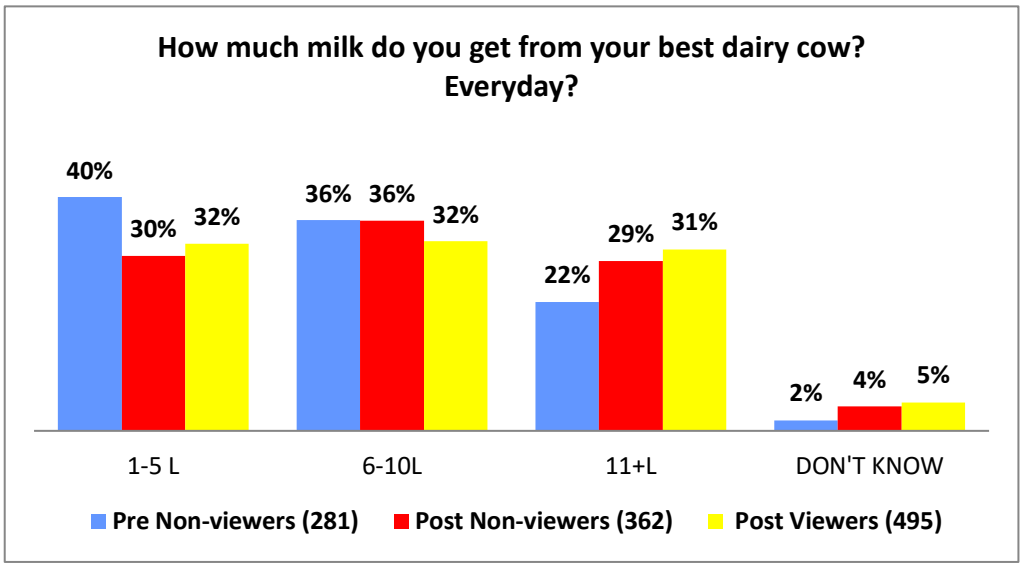
A series of questions was asked about livestock management practices and at each wave those farmers who said they did not keep livestock have been removed from the reporting base. At the midline and endline livestock farmers were asked about the most important management practices they adopted on their farms and the results are presented in the chart below. Just over seven in ten viewers and non-viewers alike keep clean water troughs, give their livestock good feeds from their shambas and keep clean cattle sheds. **However, a substantially greater proportion of SSU 11 viewers said that they gave their cattle good supplements. This is a key message in the series and one that is clearly resonating with livestock farmers.**

Chart 44: *Livestock management practices*



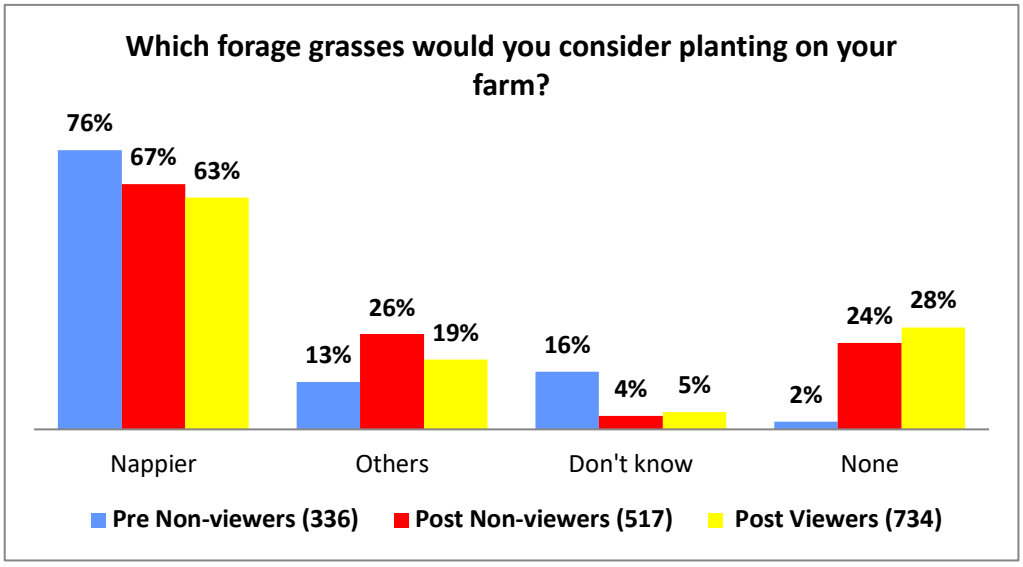
The data evidence shows some differences in daily milk yields (from the farmers' best dairy cow), which may be related to supplements although it is not possible to directly attribute this to the giving of supplements or good husbandry tips in the programmes. During and after the series, viewers and non-viewers alike reported higher milk yields than their pre-broadcast non-viewing counterparts – especially at the lower and upper end of the milk yield spectrum. More pre-broadcast non-viewers milked between 1 and 5 litres per day and more post-broadcast viewers and non-viewers milked 11+ litres per day.

Chart 45: *Milk yields*



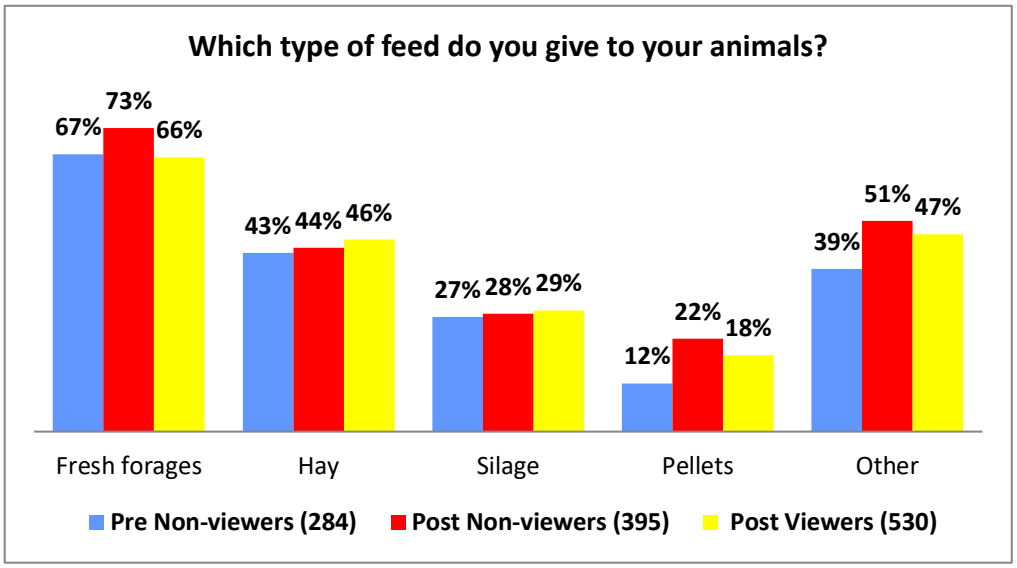
Most livestock farmers would consider planting napier grass as forage on their farms and around half believe that manure or fertiliser determine the quality of forage. There were minimal differences between viewers and non-viewers in response to questions about the types of forage they would consider planting and the factors that determine the quality of forage.

Chart 46: *Forage grasses*



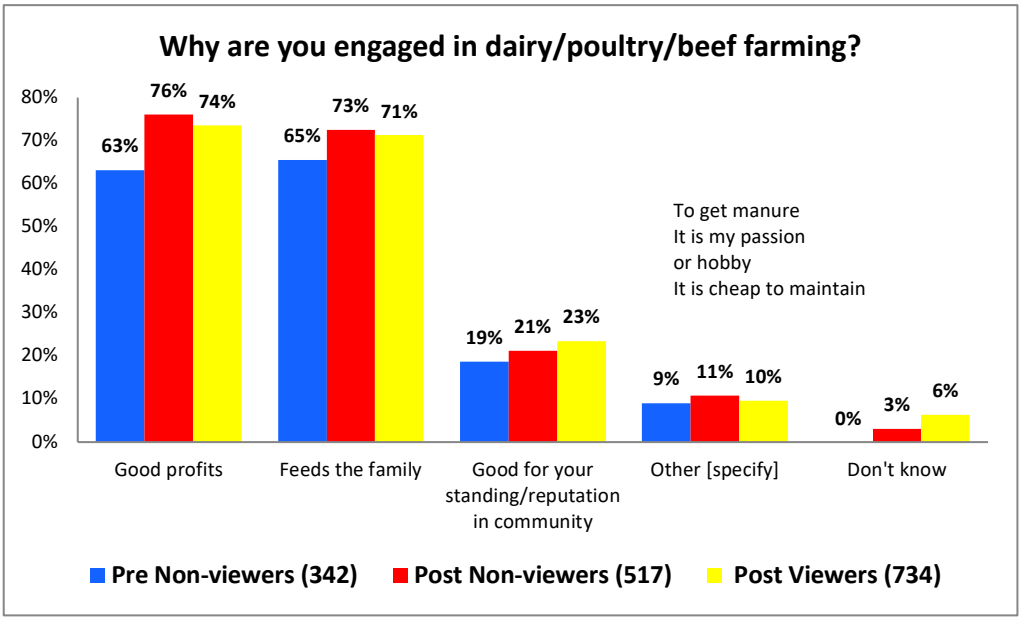
Similarly, most livestock farmers give fresh forages to their animals (around seven in ten) with just under one half saying that they give them hay. Silage and pellets were only mentioned by around one in four or five and again there were no observable differences between SSU 11 viewers and non-viewers. Livestock farmers tend to source their forage planting materials from splits or cuttings from neighbours (around a third at each survey wave) and around one quarter said that they re-used their own seeds. There were no observable differences between viewers and non-viewers in the sources of planting materials.

Chart 47: *Feeding livestock*



Most livestock farmers are engaged in the activity for profit or to feed their families and the data show a slight uplift between the pre-broadcast livestock farmers and post-broadcast farmers, although little difference between viewers and non-viewers.

Chart 48: *Reasons for farming livestock*



The barriers livsetock farmers face to being able to improve their livestock farming are mainly to do with their lack of access to finance to make the requiremed improvements. More SSU 11 viewers than non-viewers mentioned their lack of access to finance (61% vs 54/57% non-viewers) and their need for more information (41% viewers vs 21/34% non-viewers). Interestinglight, more Viewers (52%) than Non Viewers (42%) stated that they seek out information in order to overcome these barriers. This indicatd that viewers are generally interested in accessing information as a way of finding solutions to their problems. Information is more important for viewers than non-viewers and may explain why they watch SSU

Chart 49: *Barriers to improving livestock farming*

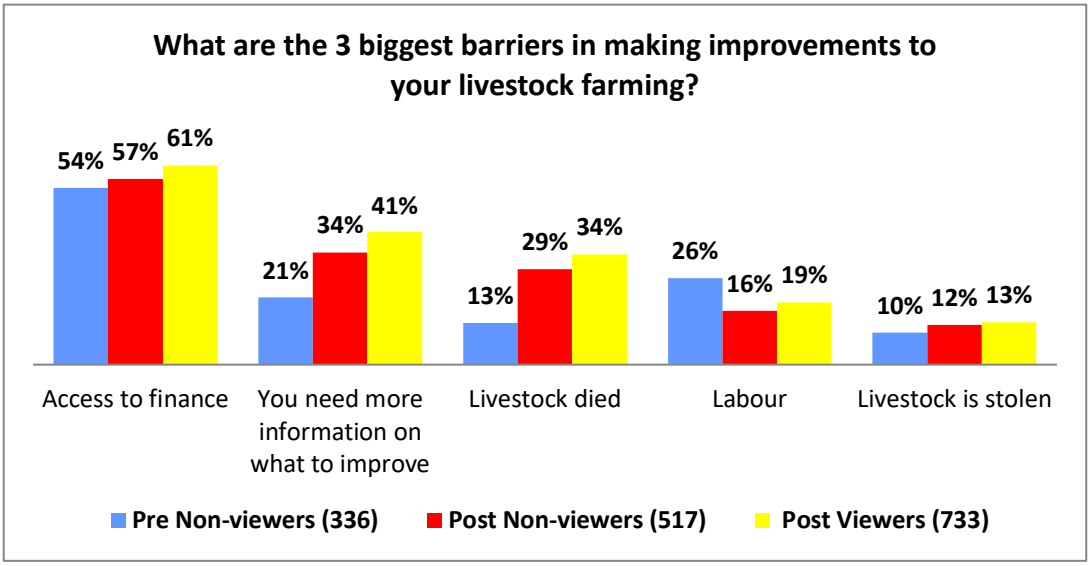
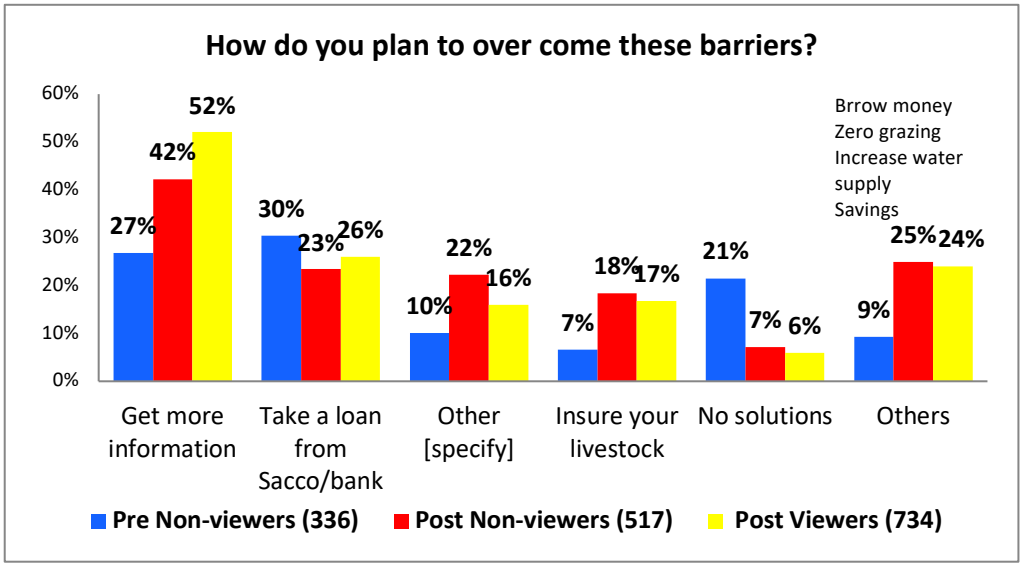


Chart 50: *Strategies for overcoming barriers*



iShamba Traffic: Livestock

The traffic generated on iShamba through SMS and WhatsApp around livestock during the broadcast period was significant, with 16,194 total SMS and WhatsApp inquiries. Significantly, over half (51%) of the inquiries evolved around poultry keeping, which was a topic that was not covered in this Series of Shamba Shape Up. Clearly, there is a huge interest for poultry keeping and the makers of the programme might consider featuring it in future series. Calf management elicited nearly one third of the traffic, followed by dairy feeding.

Topic	SMS	WhatsApp	Percentage
Poultry keeping (Feeding, Management, Housing, Vaccination)	8,243	54	51%
Calf Management	4,195	13	26%
Dairy feeding	2,479	18	15%
Parasites, diseases & Vaccination	594	38	4%
Fertility, Steaming up & Drying off	234	4	2%
Breeds and breeding	217	11	1%
Beef cattle	187	3	1%
Housing & Hygiene	37	13	0%
Record Keeping	8	1	0%
Totals	**16,194**	**155**	
Grand total	**16,349**		**100%**

Figure 9: iShamba traffic on livestock across SSU broadcast period

Looking at questions that arose immediately after broadcast of a livestock related episode, over one third centred in internal parasites, followed by fertility and steaming. The internal parasite questions were predominately about worms, how to deworm, control worms and what drugs work best across a variety of livestock. How to prepare cows for birth was a popular question.

Topic	Total	%
Internal parasites	165	33%
Fertility, Steaming	109	22%
Breeding, Nutrition	93	19%
Calf nutrition	48	10%
Breeding	42	8%
Dairy Hygiene, Mastitis prevention, dairy hygiene	33	7%
Beef Cattle, Poultry	11	2%
Totals	**501**	**100%**

Figure 10: iShamba traffic on livestock immediately after broadcast of livestock episode during SSU broadcast period

iShamba Traffic: Fodder

Episodes on fodder management elicited 80 queries immediately following broadcast. Of these over one third (35%) was on the topic of forages for economic empowerment, followed by growing fodder on slowed (28%) and alternatives to Napier grass (18%).

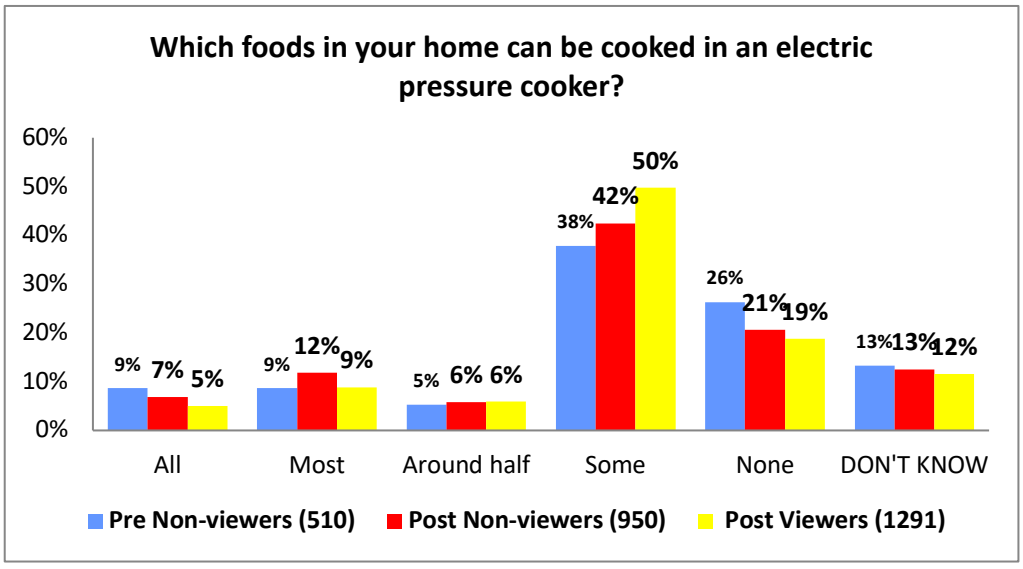
Topic	SMS	WhatsApp	Percentage
Forages for economic empowerment	22	6	35%
Growing on slopes	20	2	28%
Alternatives to Napier grass	11	3	18%
Optimal feeding	3	1	5%
Forage conservation	3	0	4%
Splits propagation	2	1	4%
Uproot Napier (burn), manage Brachiaria, make hay	3	0	4%
Forage planning /budgeting.	2	0	3%
Planting panicum nursery, benefits.	0	1	1%
Total	**66**	**14**	
Grand total	80		100%

Figure 11: iShamba traffic on fodder immediately after broadcast of fodder episode during SSU broadcast period

9 MODERN COOKING PRACTICES

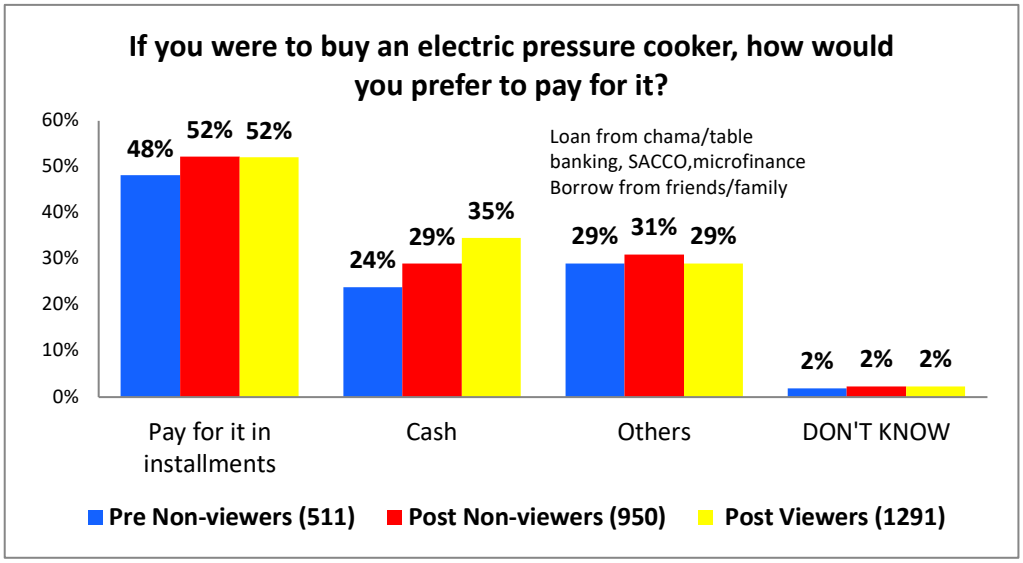
A series of questions was asked about the types of foods that can be cooked in an electric pressure cooker to understand knowledge of and attitudes towards more modern, cleaner and energy efficient cooking appliances. Very few respondents thought that most of the food they cook at home could be cooked in an electric pressure cooker – most felt that only some of the food they cook would be appropriate for an electric pressure cooker.

Chart 51: *Cooking in a pressure cooker*



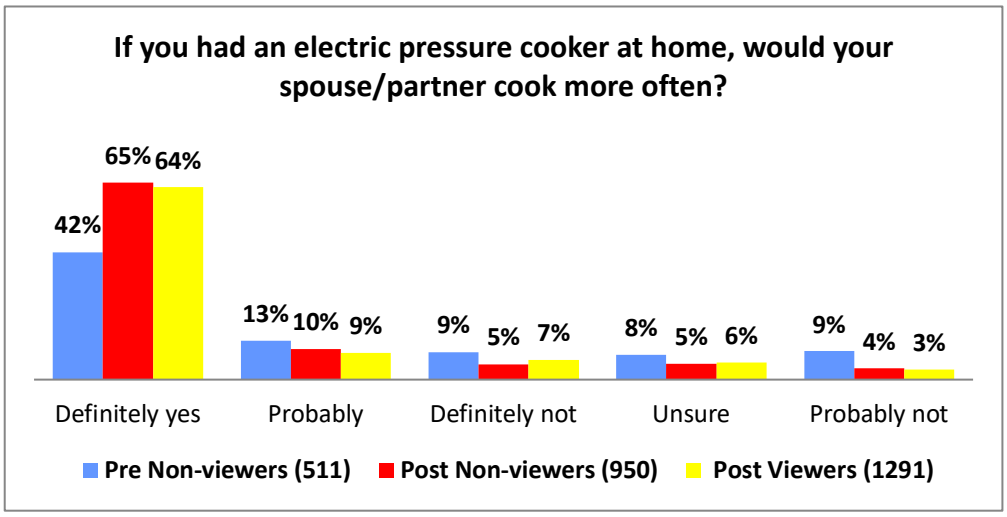
However, only a very small number (around 10%) thought they might not like to buy one and payment preferences were clearly for paying in instalments, although a significantly higher proportion of SSU 11 viewers (35%) said they would prefer to use cash compared to under 30% of non-viewers.

Chart 52: ***Paying for an electric pressure cooker***



A considerably higher proportion of viewers and non-viewers post-broadcast (65%) said that they thought their spouses would cook more often if they had an electric pressure cooker than at the pre-broadcast stage (42%).

Chart 53: ***Spouses cooking with a pressure cooker***



iShamba Traffic: Cooking

Interaction on the iShamba platform regarding the electric pressure cooker immediately after broadcast was low with 27 inquiries. Of those, the majority were directed towards the source of the pressure cooker.

Topic	SMS	WhatsApp	Percentage
Source of cooker	17	5	81%
Price of cooker	5	0	19%
Total	**22**	**5**	**100%**
GRAND TOTAL	**27**		

Figure 11: iShamba traffic on the electric pressure cooker immediately after SSU broadcast

Facebook Traffic: Cooking

In contrast, interactions on Facebook on promotion of the episodes with electric pressure cooker elicited a high response of 591 engagements.

Topic	Reach	Engagements
Cooking with electric pressure cooker.	3,038	147
Cooking with electric pressure cooker.	2,866	90
Benefits of using Electric Pressure Cooker.	3,707	103
Cooking with electric pressure cooker.	4,981	128
Cooking with electric pressure cooker.	3,983	123
TOTAL	**18,575**	**591**

Figure 12: Facebook engagements on promotion of EPC episodes

10 CONCLUSIONS

The main conclusion to be drawn from this KAP study is that the series continues to make progress in providing useful and actionable information to farmers and that it is an important vehicle for promoting change in farming practices. The format is successful in that it demonstrates good practice which farmers can adopt and follow. Clearly though, some types of content resonate more easily with farmers. Financial matters – insurance, running farms as businesses, record keeping, understanding markets and planning all remain a challenge and changes will most likely take place over a lengthy period of time as smallholder farmers are naturally slow to change and somewhat risk-averse. Other topic areas such as soil conservation, seedling sourcing, irrigation, livestock husbandry and the use of solar energy are all making inroads into farmers' attitudes and behaviours.

The future for *Shamba Shape Up* after eleven years' on-air remains positive. The series clearly has a very important role to play in providing useful and actionable information, influencing positive attitudes and promoting improved practices. The production team might wish to consider more coverage to promote improved financial literacy, financial management and planning in order to help small holder farmers realise the monetary value of their produce.

Appendix 1: Weekly Viewing Figures (GeoPoll)

The Audience Measurement survey is conducted daily among a representative sample of adults aged 16+ across Kenya and uses GeoPoll's SMS survey technology. Working with the Kenya Bureau of Statistics to translate the weekly audience averages into weekly audience reach figures resulted in a total weekly reach of at least **6 million adults aged 16+ in Kenya.**

Citizen TV Viewership - January 2021 - October 2021 Saturday 1:30PM - 2:00PM	
Date	**Average Audience**
30 October 2021	1,432,000
23 October 2021	1,298,000
16 October 2021	1,884,000
9 October 2021	1,249,000
2 October 2021	3,035,000
25 September 2021	1,836,000
18 September 2021	1,930,000
11 September 2021	1,812,000
4 September 2021	2,101,000
28 August 2021	1,314,000
21 August 2021	2,576,000
14 August 2021	1,908,000
7 August 2021	1,650,000
31 July 2021	2,094,000
24 July 2021	1,153,000
17 July 2021	1,559,000
10 July 2021	1,816,000
3 July 2021	1,605,000
26 June 2021	1,832,000
19 June 2021	1,719,000
12 June 2021	1,869,000
5 June 2021	1,469,000
29 May 2021	1,532,000
22 May 2021	1,878,000
15 May 2021	1,489,000
8 May 2021	1,376,000
1 May 2021	1,759,000
24 April 2021	1,208,000

Citizen TV Viewership - January 2021 - October 2021 Sunday 1:30PM - 2:00PM	
Date	**Average Audience**
31 October 2021	2,154,000
24 October 2021	1,692,000
17 October 2021	1,174,000
10 October 2021	2,281,000
3 October 2021	1,801,000
26 September 2021	2,780,000
19 September 2021	2,153,000
12 September 2021	3,041,000
5 September 2021	1,796,000
29 August 2021	1,640,000
22 August 2021	2,501,000
15 August 2021	1,348,000
8 August 2021	2,259,000
1 August 2021	2,469,000
25 July 2021	1,931,000
18 July 2021	1,337,000
11 July 2021	1,940,000
4 July 2021	1,952,000
27 June 2021	1,765,000
20 June 2021	1,790,000
13 June 2021	2,309,000
6 June 2021	1,281,000
30 May 2021	1,179,000
23 May 2021	1,231,000
16 May 2021	1,698,000
9 May 2021	1,719,000
2 May 2021	1,241,000
25 April 2021	2,209,000

17 April 2021	1,414,000
10 April 2021	1,668,000
3 April 2021	1,532,000
27 March 2021	1,554,000
20 March 2021	1,871,000
13 March 2021	1,197,000
6 March 2021	1,764,000
27 February 2021	1,513,000
20 February 2021	1,356,000
13 February 2021	1,657,000
30 January 2021	1,254,000
23 January 2021	2,091,000
16 January 2021	1,712,000
9 January 2021	1,252,000
2 January 2021	1,707,000
Total*	**1,672,674**

18 April 2021	1,275,000
11 April 2021	1,257,000
4 April 2021	1,345,000
28 March 2021	1,592,000
21 March 2021	1,729,000
14 March 2021	1,580,000
7 March 2021	1,228,000
28 February 2021	1,316,000
21 February 2021	1,721,000
14 February 2021	1,702,000
7 February 2021	1,764,000
31 January 2021	1,412,000
24 January 2021	1,321,000
17 January 2021	1,346,000
10 January 2021	2,012,000
3 January 2021	1,531,000
Total	**1,745,500**

** Calculations made to account for co-viewing, gives a total weekly reach of at least 6 million adults aged 16+.*

Appendix 2: iShamba Traffic

iShamba Traffic during Broadcast Period

Table 1: Audience Interaction

Timeframe: 20th March 2021- 11th September 2021

Episode	Date of broadcast	SMSes received following broadcast	Incoming calls following broadcast	Average Call Duration	Total Traffic (SMS and Calls)	New customers following broadcast
		Span of 1 week	*Span of 1 week*	*(secs)*	*Span of 1 week*	*Span of 1 week*
1	20/03/2021	110	890	38	1,000	682
2	27/03/2021	774	269	31	1,043	654
Repeat of Ep 2	03/04/2021	451	184	47	635	448
3	10/04/2021	262	124	37	386	274
4	17/04/2021	6,434	70	88	6,504	1,590
5	24/04/2021	1,297	74	44	1,371	371
6	01/05/2021	352	74	38	426	210
7	08/05/2021	901	95	55	996	200
8	15/05/2021	3,679	103	18	3,782	995
9	22/05/2021	460	90	33	550	234
10	29/05/2021	2,402	149	43	2,551	1,768
Re-edits	05/06/2021	2,402	68	43	2,470	268
Re-edits	12/06/2021	4,003	74	52	4,077	731
11	19/06/2021	1,138	144	51	1,282	1,643
12	26/06/2021	1,771	227	46	1,998	1,269
13	03/07/2021	5,086	147	34	5,233	5,983
14	10/07/2021	813	68	53	881	722
15	17/07/2021	1,246	144	75	1,390	489
16	24/07/2021	409	61	52	470	223
Repeat of Ep 14	31/07/2021	447	66	35	513	286
17	07/08/2021	3,078	156	31	3,234	720
18	14/08/2021	4,600	95	36	4,695	1,109
19	21/08/2021	1,316	68	52	1,384	502
20	28/08/2021	2,915	52	71	2,967	710
21	04/09/2021	1,837	69	65	1,906	550
Total		**48,183**	**3,561**	**1,168**	**51,744**	**22,631**
	Average	**1,927**	**142**	**47**	**2,070**	**905**

Table 2: Summary iShamba Traffic

Captured Timeframe: 20th March 2021 - 11th September 2021

SMS Received (Total)	48,183
Incoming Calls (Total)	3,561
WhatsApp Questions (Total)	9,549
Total	**61,293**

SMS Questions per week (Average)	1,927
Incoming calls per week (Average)	143
WhatsApp Questions per week (Average)	222
Total	**2,292**

Table 3: iShamba Total Subscriptions

Updated 1/12/2021

Subscription Type	**No. of Subscribers**
Freemium Farmers (Total)	509,457
Premium Farmers (Active)	2,370
Total	**511,827**

Appendix 3: iShamba Traffic by Partner

World Food Programme

Episode 1. Crop Rotation & Tree planting - 15, 16th May
Episode 2. Agroforestry - 3rd, 4th July
Episode 3. OFSP, Honey, Savings & loans - 24th, 25th July
Episode 4. Agroforestry Management Soil Cover - 14th, 15th Aug
Episode 5. OFSP, Honey, Grass - 21st, 22nd Aug
Episode 6. Min Till Mechanised - 28th, 29th Aug

BEE KEEPING - TOPICS THAT AROSE	Total	%
Harvesting questions	38	40%
Other/specific questions	19	20%
Where to buy specifics for bee keeping	17	18%
General info request	6	6%
Failing bees - advice needed	4	4%
Preservation/quality/storage of honey	4	4%
Equipment required for harvesting	3	3%
Financial assistance for bee keeping	2	2%
Health benefits of honey	2	2%
Total	**95**	**100%**

40% of the questions around bee keeping were concentrated on harvesting e.g. how long until honey is ripe to harvest? How do I harvest honey? How do I know when the honey is ripe? 20% of the questions were very specific e.g. can you practise bee keeping in cities? Which is the best pesticide to use against ants invading bee hives? How much is a tin of honey?

Topic	SMS	WhatsApp	Percentage
Growing sweet potatoes & Sweet potato varieties	44	3	32%
Source of vines	39	5	30%
Multiplying Vines	19	0	13%
Value addition	18	0	12%
General questions (Management, Suitable conditions, what is a vine)	7	3	7%
Maturity Period	8	0	5%
Market	2	0	1%
Total	**137**	**11**	**100%**
Grand Total	**148**		

Plant Village

Episode 1. Intercropping: Maize/Beans - 20th & 21st March
Episode 2. Rain water harvesting - 27th & 28th March

Responses generated: 25

Topics that arose	Total	%
Intercropping: Maize/Beans	18	72%
Rain water harvesting	7	28%

A few example questions around intercropping include 'Can I plant maize on the same field with my vegetables?' and questions around which crops can be grown together.

Plant and Food Research & Olivado

Planting Avocado trees - 27th & 28th March
Irrigation - 10th & 11th April
Use of Legumes for Nitrogen - 24th & 25th April
Avocado Management - 8th & 9th May
Avocado Harvesting - 26th & 27th June

Responses generated: 224

Topics that arose	Total	%
Source of seedlings	81	36%
Harvesting	79	35%
Management	25	11%
Avocado Varieties	19	9%
Markets	11	5%
Maturity Period	6	3%
Grafting Avocados	3	1%

The questions around sourcing seedlings were mainly focused on where to buy seedlings in general with some people asking where to get the best/certified seedlings from. Harvesting questions were focused on how to harvest. A couple of the management questions from WhatsApp featured photos of avocado trees, which were decaying due to bacteria.

Potsdam Institute for Climate Impact Research (PIK) & Acre Africa

Benefits of crop insurance - 27th & 28th March
Insurance claims process - 24th & 25th April
Debunking myths - 22nd & 23rd May
What steps are undertaken (sign up with phone) - 28th & 29th Aug

Responses generated: 70

Topic	Total	%
Crop insurance	54	77%
Livestock Insurance	6	9%
General Insurance questions	10	14%

The majority of questions on crop insurance, which make up the 77% are: What's crop insurance? How can I get crop insurance? Tell me more about crop insurance?

MKOPA

Water tank - 17th & 18th April
Water Tank - 26th & 27 June
Mkopa Farmer phone - 17th & 18th July

Responses generated: 165

Topic	Total	%
Water tank	160	97
Farmer phone	5	3

The water tank questions mainly comprised of farmers asking how to obtain one.

Modern Energy Cooking Services (MECS) with UK Aid

Cooking with electric pressure cooker - 17th & 18th April
Cooking with electric pressure cooker - 22nd, 23rd May
Benefits of using Electric Pressure Cooker - 29th, 30th May
Cooking with electric pressure cooker - 7th, 8th Aug
Cooking with electric pressure cooker - 4th & 5th September

Responses generated: 27

Topic	SMS	WhatsApp	Percentage
Source of cooker	17	5	81%
Price of cooker	5	0	19%
Total	**22**	**5**	**100%**
GRAND TOTAL 27			

As the table above notes – questions arose about price of a cooker and where to buy one.

International Potato Centre (CIP)

Healthy Baby toolkit - 17th & 18th April
Multiplying Vines - 1st & 2nd May
Healthy Baby toolkit - 26th & 27th June

Responses generated: 148

Topic	SMS	WhatsApp	Percentage
Growing sweet potatoes & Sweet potato varieties	44	3	32%
Source of vines	39	5	30%
Multiplying Vines	19	0	13%
Value addition	18	0	12%
General questions (Management, Suitable conditions, what is a vine)	7	3	7%
Maturity Period	8	0	5%
Market	2	0	1%
Total	**137**	**11**	**100%**
Grand Total	**148**		

Interestingly the healthy baby toolkit generated no questions.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Financing SPIS - 20th & 21st March
Setting Up SPIS - 8th & 9th may
SPIS - 19th & 20th June
What is SPIS, Water use and irrigation & Set up - 26th & 27th June

Responses generated: 250

Topic	SMS	WhatsApp	Percentage
Source of the irrigation Kit	93	6	40%
General questions (What is SPIS, How it works, More information on the system)	70	4	30%
Cost of Setting up	42	1	17%
Installation	3	1	2%
Supplier Contact	26	4	12%
Total	**234**	**16**	**100%**
Grand Total	**250**		

The main questions here were how much do the kits cost? Where can I get solar power irrigation? Requests for more information in general about solar power.

Finance in Motion, Eco Business Fund

Water pan, Buffer zone - 15th & 16th May
Avocado management - 29th & 30th May
Compost manure - 28th & 29th August

Responses generated: 34

Topic	Total	%
Water pan, Buffer zone	5	15%
Avocado management	25	73%
Compost manure	4	12%

The questions regarding avocado management were mainly specific questions around the issues farmers are facing e.g. pests, quality. Compost manure questions were seeking clarification on how to make it. Water pan questions were predominately seeking clarification on measurements e.g. size of holes, plastic liner quantity specification.

CKL Africa

Episode 1. Dairy Hygiene, Mastitis prevention, dairy hygiene - 22nd & 23rd May
Episode 2. Fertility, Steaming - 29th & 30th May
Episode 3. Breeding - 19th & 20th June
Episode 4. Breeding, Nutrition - 3rd & 4th July
Episode 5. Internal parasites - 17th & 18th July
Episode 6. Calf nutrition - 7th & 8th Aug
Episode 7. Beef Cattle, Poultry - 4th & 5th Sep

Responses generated: 501

Topic	Total	%
Internal parasites	165	33%
Fertility, Steaming	109	22%
Breeding, Nutrition	93	19%
Calf nutrition	48	10%
Breeding	42	8%
Dairy Hygiene, Mastitis prevention, dairy hygiene	33	7%
Beef Cattle, Poultry	11	2%
Totals	**501**	**100%**

The majority of livestock in question were cows but other animals included sheep, goats, poultry and rabbits. The internal parasite questions were predominately about worms, how to deworm, control worms and what drugs work best across a variety of livestock. How to prepare cows for birth was a popular question.

International Center for Tropical Agriculture (CIAT)

Episode 1. Optimal feeding - 20th & 21st March
Episode 2. Forage conservation - 27th & 28th March
Episode 3. Splits propagation - 10th & 11th April
Episode 4. Uproot Napier (burn), manage Brachiaria, make hay - 24th & 25th April
Episode 5. Alternatives to Napier grass - 8th & 9th May
Episode 6. Forages for economic empowerment. - 15th & 16th May
Episode 7. Growing on slopes. Expert: Isaac - 22nd, & 23rd May
Episode 8. Forage planning /budgeting. - 7th & 8th Aug
Episode 9. Planting panicum nursery, benefits. - 28th & 29th Aug

Responses generated: 80

Topic	SMS	WhatsApp	Percentage
Forages for economic empowerment.	22	6	35%
Growing on slopes	20	2	28%
Alternatives to Napier grass	11	3	18%
Optimal feeding	3	1	5%
Forage conservation	3	0	4%
Splits propagation	2	1	4%
Uproot Napier (burn), manage Brachiaria, make hay	3	0	4%
Forage planning /budgeting.	2	0	3%
Planting panicum nursery, benefits.	0	1	1%
Total	**66**	**14**	
Grand total	80		100%

Questions mainly consisted on how to plant, planting methods, where to source seeds, types of diseases etc.
Questions about the following promoted improved fodder grasses:

Brachiaria	32
Panicum	23
Napier	9
Total	**64**

Soil testing: Agrocares & Fadhili Africa

Soil testing - 20th & 21st March
Soil testing - 10th &11th April
Soil testing - 24th & 25th April
Soil testing - 8th & 9th May

Responses generated - 88

Topic	Total	%
Soil test	62	71%
Soil/crop nutrition	10	11%
Soil pH	16	18%

Syngenta E.A Limited

Responses generated: 337

Topic	SMS	WhatsApp	Percentage
Fungicides	66	23	26%
Insecticides	61	21	24%
Seed Variety	53	2	16%
Pesticides	42	8	15%
Herbicides	29	6	10%
Grain preservation	19	2	6%
General questions	4	1	2%
Total	**274**	**63**	**100%**
Grand Total	**337**		

International Centre of Insect Physiology and Ecology (ICIPE)

Responses generated: 29

Topic	SMS	WhatsApp	Percentage
Push-Pull on FAW attacks	12	0	41%
Push-Pull on Vegetable farms	7	3	35%
Push-Pull on Striga weeds	5	1	21%
Source of Desmodium	1	0	3%
Total	**25**	**4**	**100%**
GRAND TOTAL	**29**		

Appendix 4: Facebook Engagements

The Shamba Shape Up Facebook page[3] has a total following of 77,524, of which 30% are women and 70% are men. Followers are generally young, with one third (30%) aged 25-34 and another 21% aged 35-44.

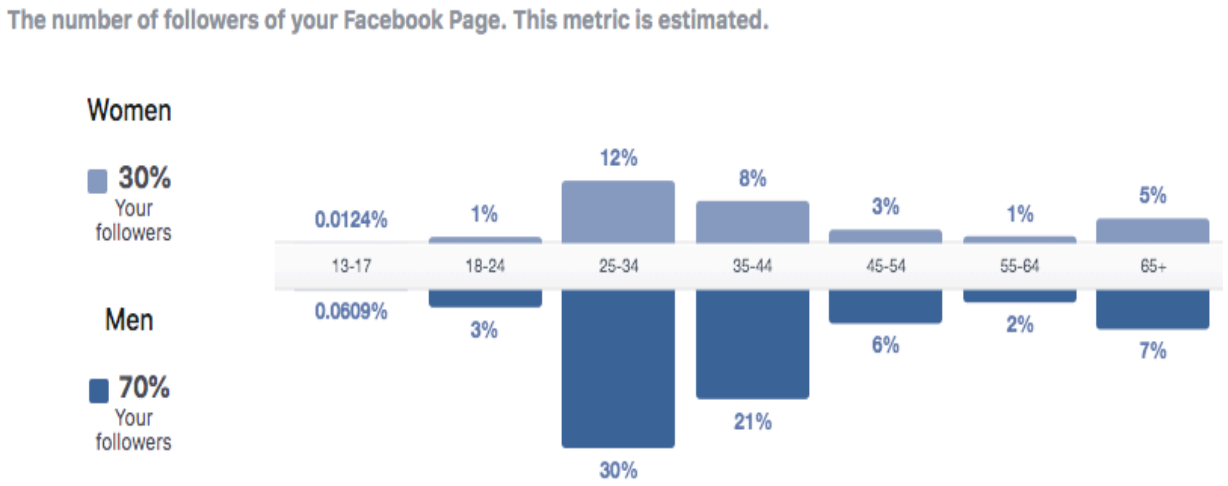


Figure 13: SSU Facebook demographic

Between January 2021 to date, the Shamba Shape Up Facebook page has elicited following engagement (see Figure 12):

- 3,300 new followers (13.6% increase from 2020).
- 2,000 likes with 511,000 engagements (2,626% increase from 2020).
- 1.9M reach (611% increase from 2020).

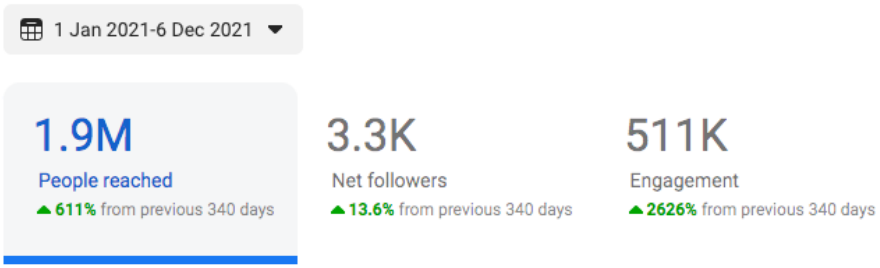


Figure 14: SSU Facebook engagements in 2021

[3] Shamba Shape Up Facebook: https://www.facebook.com/ShambaShapeUp/

Reach of Facebook Episode Promotions

Promotion of Shamba Shape Up Episodes on Facebook prior and post broadcast reached 91,144 persons and elicited 3,321 engagements.

Episode	Topic	Date	Reach	Engagements
1	Pre-broadcast promo	19/03/2021	1069	66
	Post-broadcast promo	23/03/2021	2042	91
2	Pre-broadcast promo	26/03/2021	1946	169
	Post-broadcast promo	29/03/2021	2118	46
3	Pre-broadcast promo	02/04/2021	1775	178
	Post-broadcast promo	14/04/2021	1575	32
4	Pre-broadcast promo	16/04/2021	1138	76
	Post-broadcast promo	19/04/2021	1959	73
5	Pre-broadcast promo	23/04/2021	1108	55
	Post-broadcast promo	26/04/2021	1400	29
6	Pre-broadcast promo	30/04/2021	936	39
	Post-broadcast promo	03/05/2021	1678	37
7	Pre-broadcast promo	07/05/2021	1189	51
	Post-broadcast promo	10/05/2021	1599	41
8	Pre-broadcast promo	14/05/2021	934	46
	Post-broadcast promo	17/05/2021	1974	84
9	Pre-broadcast promo	21/05/2021	1234	68
	Post-broadcast promo	24/05/2021	1728	22
10	Pre-broadcast promo	28/05/2021	1434	55
	Post-broadcast promo	31/05/2021	2411	49
11	Pre-broadcast promo	04/06/2021	1897	107
	Post-broadcast promo	08/06/2021	2693	97
13	Pre-broadcast promo	17/06/2021	3187	280
14	Pre-broadcast promo	24/06/2021	1923	98
	Post-broadcast promo	29/06/2021	3954	74
15	Pre-broadcast promo	02/07/2021	2178	119
	Post-broadcast promo	05/07/2021	3726	78
16	Pre-broadcast promo	08/07/2021	2132	89
	Post-broadcast promo	12/08/2021	3538	140
17	Pre-broadcast promo	15/07/2021	2347	128
	Post-broadcast promo	19/07/2021	4254	71
18	Pre-broadcast promo	22/07/2021	2017	67

	Post-broadcast promo	26/07/2021	3003	88
19	Pre-broadcast promo	06/08/2021	1993	81
	Post-broadcast promo	09/08/2021	3532	59
20	Pre-broadcast promo	12/08/2021	2184	74
	Post-broadcast promo	16/08/2021	2745	31
21	Pre-broadcast promo	19/08/2021	1410	57
	Post-broadcast promo	24/08/2021	2193	28
22	Pre-broadcast promo	26/08/2021	1452	79
	Post-broadcast promo	31/08/2021	2824	33
23	Pre-broadcast promo	02/09/2021	1360	67
	Post-broadcast promo	07/09/2021	3355	69
		Total	**91,144**	**3,321**