

Shamba Shape Up: Series One Evaluation

Report August 2012



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EXECUTIVE SUMMARY

- *Shamba Shape Up* is a “make over” educational television series made up of 12 programmes, targeted primarily at rural people and small scale farmers. The format of the series involves visiting small scale farms and identifying the problems faced by the farmer, then with the help and advice from experts and other resources, the farmers are helped to overcome their problems and advised as to how to develop their farms into viable going concerns. The series attracted an estimated 3.5 million viewers.
- Radio and television are the two main sources and the most useful of information about agriculture and farming for the majority of farmers interviewed during the course of this research
- *Shamba Shape Up* has significantly increased the importance of television as a source of information for agriculture and farming, with 57% of farmers mentioning television as a source for information after the series was transmitted, compared with 27% before hand
- When viewers were asked if they had changed any of their farming practices as a result of viewing the programme (s) just over one third (36%) said they had. This is a significant *behaviour change impact* after the first series of the programme and if this figure translates into actual behaviour change among small scale farmers it could be argued that the series is making a major contribution to the farming practices and the financial performance of this important sector of the economy, positively impacting the lives of some of the poorest people in the country
- Series One focused on 13 main themes: Soil Fertility, solar lighting, poultry farming, seed procurement, maize production, potato planting, tomato planting, banana planting, calliandra, use of pesticides and chemicals, fake chemicals, dairy cattle and financial education for farmers
- Although the themes were covered in varying amounts of coverage and detail there is a significant body of evidence from the research that knowledge, attitudes and practice increased as a result of *Shamba Shape Up*
- Soil fertility:
 - Low awareness and practice of soil testing
 - Increased knowledge and propensity to carry our soil testing among viewers
 - The use of fertiliser is common – however, viewers have a greater propensity to use it than non-viewers
 - Benefits of using and mixing fertilisers showed marked increases after Series One and especially among viewers
 - The benefits and practice of good compost making also showed increases among Series One viewers
- Solar Lighting
 - Unlike the population of farmers at large, the majority of the farmers surveyed had access to television (as a pre-requisite to qualifying for interview). As such, intention to purchase solar lighting products did not show any marked increase as a result of the series

- However, there was knowledge transfer in terms of the disadvantages of kerosene and the advantages of solar lighting
- Poultry farming
 - There were significant improvements in knowledge and intended practice among chicken farmers who saw the series. Especially in relation to good practice in keeping and making money from chickens, through to better housing for chickens, husbandry and chicken feed.
 - More viewers than non-viewers bought Unga chicken feed
- Seed procurement
 - Most farmers reported buying their main crop seeds from a seed provider
 - Slightly more farmers who had seen the series said they would buy a different variety of seeds from those they have bought during the past two seasons
 - There was almost no recall of the KEPHIS SMS facility
- Maize production
 - Shelling maize by hand, as recommended in the series, showed a marked difference between viewers and non-viewers as did the wearing of protective clothing when applying insecticide – all strong messages communicate in Series One
 - The correct method of storage and planting also showed positive shifts in knowledge and intended behaviour between the two survey periods
- Potato planting
 - Viewers were more likely than non-viewers to apply fungicides correctly to potatoes and to plant their potatoes with the correct spacing and depth
 - The surveys evidenced a greater use of fertilisers in the planting process among viewers, a clear sign of knowledge acquisition and intended behaviour change
- Tomato planting
 - The number of tomato planters was too small to report on with any degree of accuracy
- Banana planting
 - A significantly higher proportion of viewers than non-viewers said they bought new young plants rather than take a sucker from an existing plant as recommended in Series One
- Calliandra
 - The surveys illustrated very low awareness of calliandra among both viewers (10%) aware and non-viewers (6%) aware

- Use of pesticides
 - There were high levels of awareness of the dangers of using pesticides, but there was an increase in both knowledge and the use of protective clothing among viewers

- Fake chemicals
 - A higher proportion of viewers than non-viewers claimed to know what fake chemicals are and said they would check the packaging to guard against buying fake chemicals
 - Awareness of Gladiator was universally low and most farmers could not tell the difference between an example of a fake and a genuine package

- Dairy cattle
 - There was compelling evidence that dairy farmers who had seen the series were more knowledgeable about the correct feeding of dairy cows, but that awareness of the value of napier and the tumbukiza method of growing it remained very low
 - Knowledge of the use, benefits and how to make silage was generally higher among viewers than non-viewers
 - Knowledge about the housing of cattle and identifying mastitis also improved among viewers

- Financial education
 - It is clear from the research that farmers need to understand more about the benefits of keeping financial records and making business plans and that the series did not make significant in-roads into this complicated subject

- In broad conclusion, the results from the pre and post broadcast surveys show very positive results in communicating knowledge and good practice to farmers. Although the pre and post changes are not uniform across all areas of content – a reflection of the amount of coverage given to the different topics, the technical nature of some of the information and its relevance – there is sufficient evidence in these results to be able to conclude that the first series of *Shamba Shape Up* has had a positive impact on improving awareness and knowledge of better farming practices

INTRODUCTION

Shamba Shape Up is a “make over” educational television series made up of 12 programmes, targeted primarily at rural people and small scale farmers. The format of the series involves visiting small scale farms and identifying the problems faced by the farmer, then with the help and advice from experts and other resources, the farmers are helped to overcome their problems and advised as to how to develop their farms into viable going concerns.

Series One of *Shamba Shape Up* was broadcast on Citizen Television from March 11th 2012 to June 10th 2012 at 1.30pm on Saturdays in English and 1.30pm on Sundays in Swahili. Citizen Television has the highest audience reach of all the local Kenyan television channels and the highest share of viewing in both urban and rural areas of the country.

Series One (and the accompanying online and printed materials) covered the following broad topics:

1. Soil Fertility
2. Solar lighting
3. Poultry farming
4. Seed procurement
5. Maize production
6. Potato planting
7. Tomato growing
8. Banana planting
9. Calliandra
10. Use of pesticides and chemicals
11. Fake chemicals
12. Dairy cattle
13. Financial Education

The findings in this report are based on two surveys, Wave One was conducted in March 2012 immediately prior to the broadcast of the series and Wave Two was conducted in June/ July 2012 immediately after the last of the 12 programmes in the series was transmitted. The report includes a selection of the data and charts in support of the narrative. However, the study generated many charts, too many to include in this document, there is a separate deck of the complete set of charts which accompanies this report.

Where possible the results from the two sample surveys have been compared to highlight any pre and post series changes in awareness, knowledge, attitudes and (current and intended) practices reported by farmers. In addition, viewers of the series have been compared with non-viewers wherever possible to identify the effectiveness of specific messages and pieces of advice.

Pre and Post Survey Methodology

The surveys were conducted by an independent Kenya research firm – Research Guide Africa. The data were collected under strict Quality Control procedures as laid out in the ESOMAR guidelines. The surveys were conducted using pen and paper fully structured questionnaires (appended to this report) among selected samples of farmers living and working in rural areas representing high and low potential farming areas across the southern part of the country

Those eligible for interview were selected based on the following criteria:

1. In a household the person primarily responsible for farming and the primary decision-maker on farming matters (farmer workers were not eligible)
2. Eligible households qualified if they cultivate 0.5 to 10 acres of land at the place where the household is located (which was the place of interview)
3. All eligible households must have relied on crops from farm or livestock outputs/livestock sales in the past 12 months as their MAIN source of livelihood
4. All households must have a TV (this means that households with access to electricity are over-represented in the sample)
5. To qualify for interview in Wave Two, around 50% of the sample had to be *Shamba Shape Up* viewers in the past 4 weeks and to know the television channel and the days on which the programme is aired

The geographic coverage targeted the same areas for Wave One and Wave Two, with achieved samples of 802 farmers in Wave One and 820 farmers in Wave Two. The data were collected by fully trained Research Guide Africa enumerators and captured using double entry Epidata. The analysis was conducted using SPSS

Details of the numbers of interviews achieved in the survey geography are in Figure 1, divided into the high and low potential farming areas.

Fig. 1: Sample distribution by high and low potential areas for Wave One (W1) and Wave Two (W2)

High Potential areas								
Total	Embu	Limuru	Thika	Kikuyu	Kisii	Kakamega	Busia	Bungoma (10-20km from town)
(W1) 512	62	65	60	75	62	61	63	64
(W2) 518	63	64	66	75	63	60	63	64

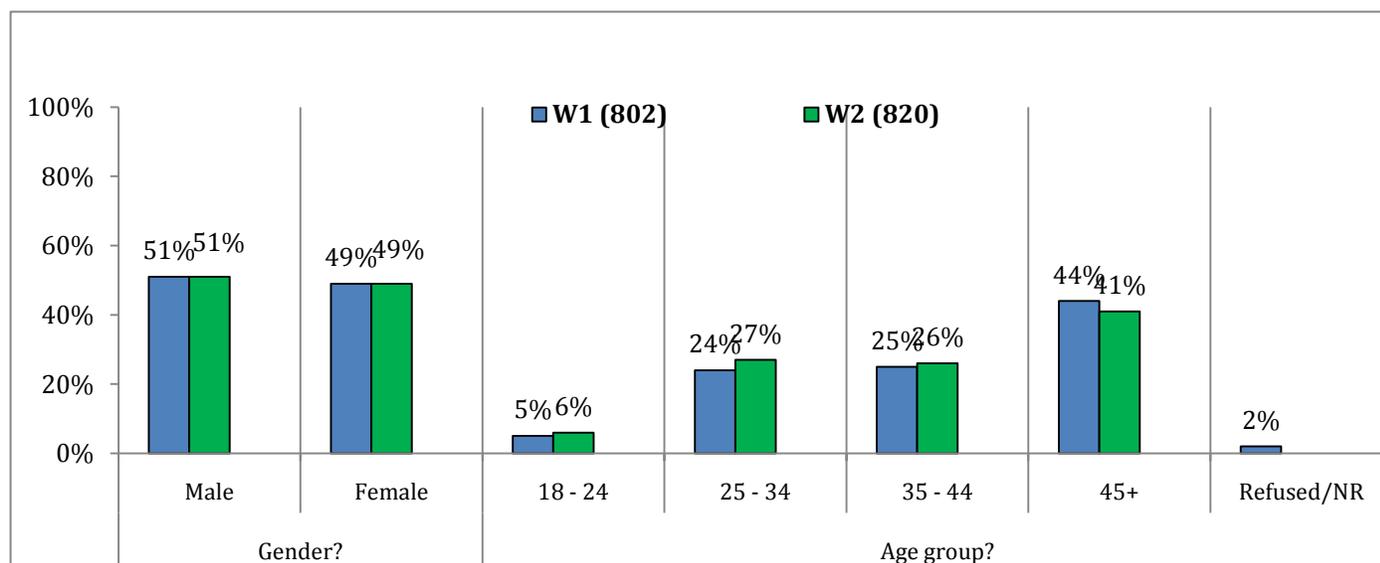
Low Potential					
Total	Homabay	Machakos	Makueni	Kangundo,	Naivasha
(W1) 290	61	64	61	45	59
(W2) 302	61	67	61	50	63

Demographic profile of the Wave One and Wave Two samples

The demographic profiles of the pre broadcast and post broadcast samples in terms of gender, age, level of education and size of farm were well controlled to yield almost matched demographic profiles.

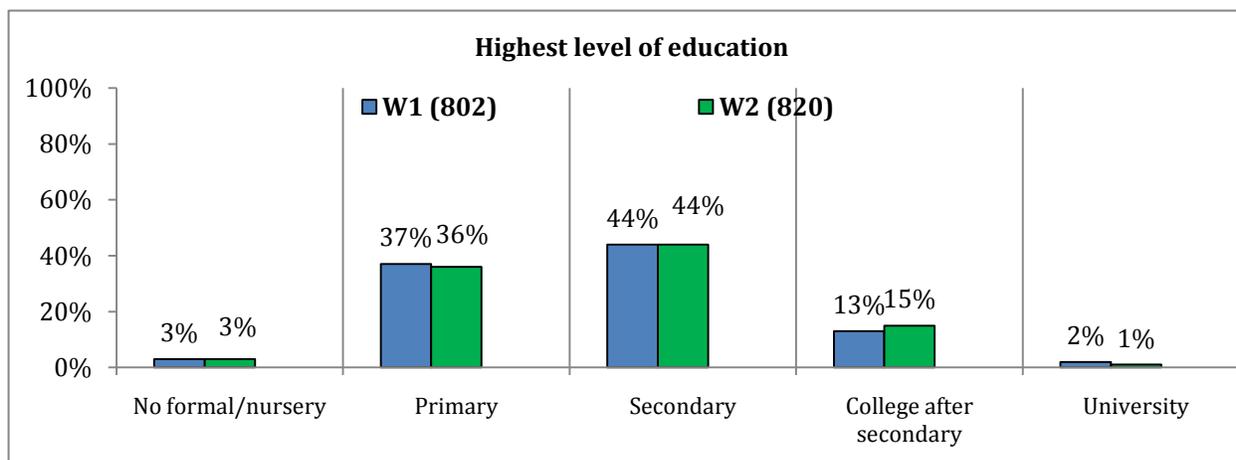
In terms of gender the two samples were identical (51% male; 49% female). There were slight, but not statistically significant differences, in the age profile of the two samples – with marginally more younger farmers in Wave Two than in Wave One.

Fig. 2: Gender and age profiles of the Wave One (W1) and Wave Two (W2) samples



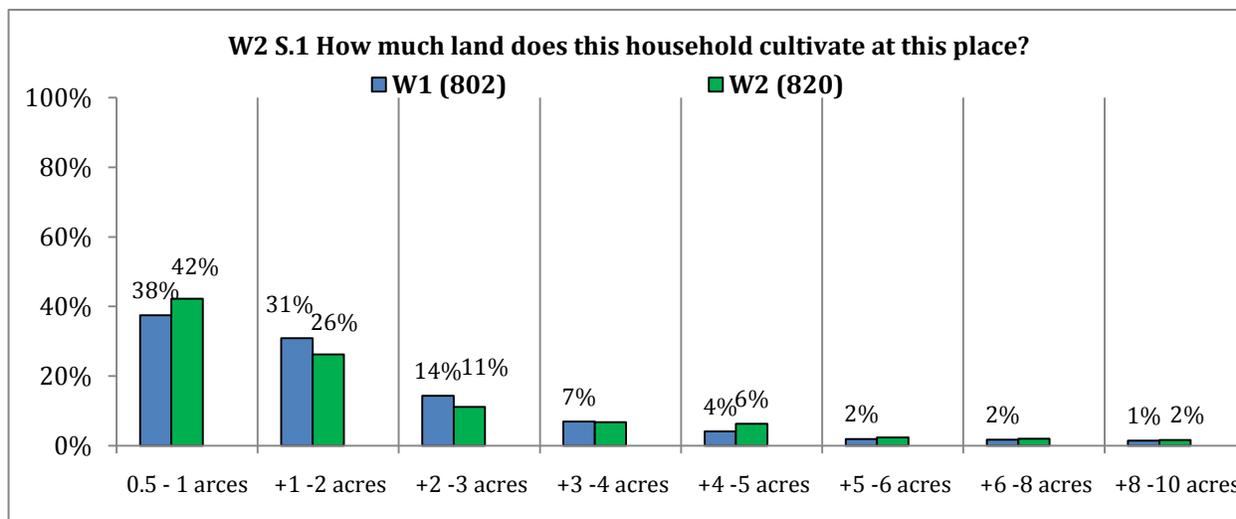
In terms of level of education, the two samples were very closely matched and reflective of the educational profile of the rural population of Kenya

Fig. 3: Education profile of the Wave One (W1) and Wave Two (W2) samples



In terms of the size of farms, the two samples were a good match with only marginally more farmers of smaller plots (0.5 to 1 acre) in Wave Two – 42% of the sample compared with 38% in Wave One, and marginally fewer in the one to two and two to three acre brackets.

Fig. 4: Size of farm profile of the Wave One (W1) and Wave Two (W2) samples



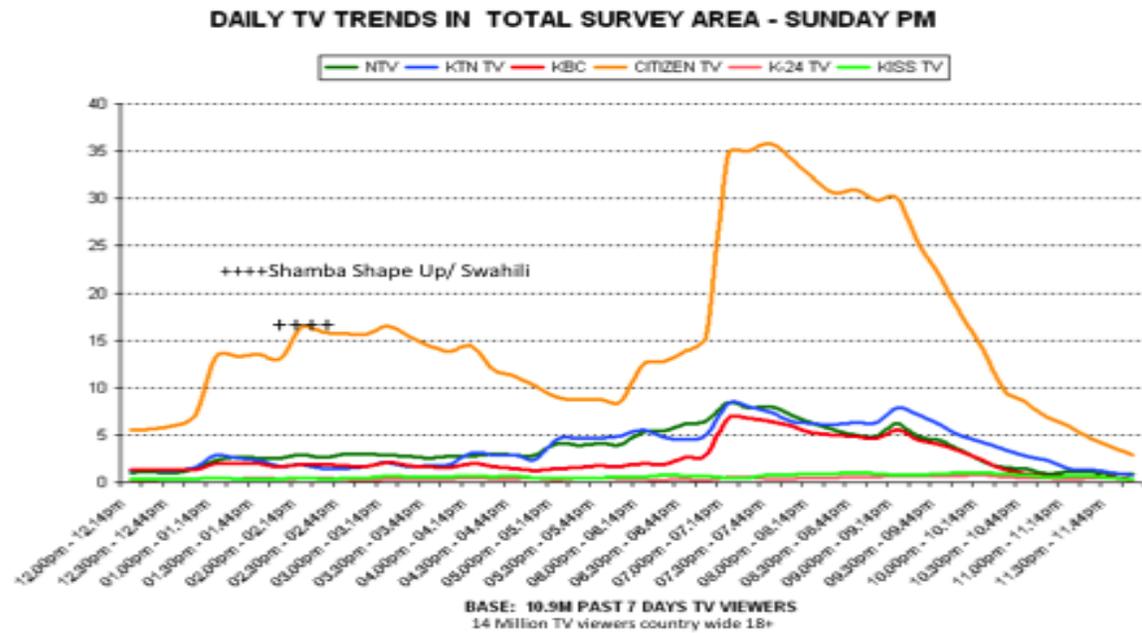
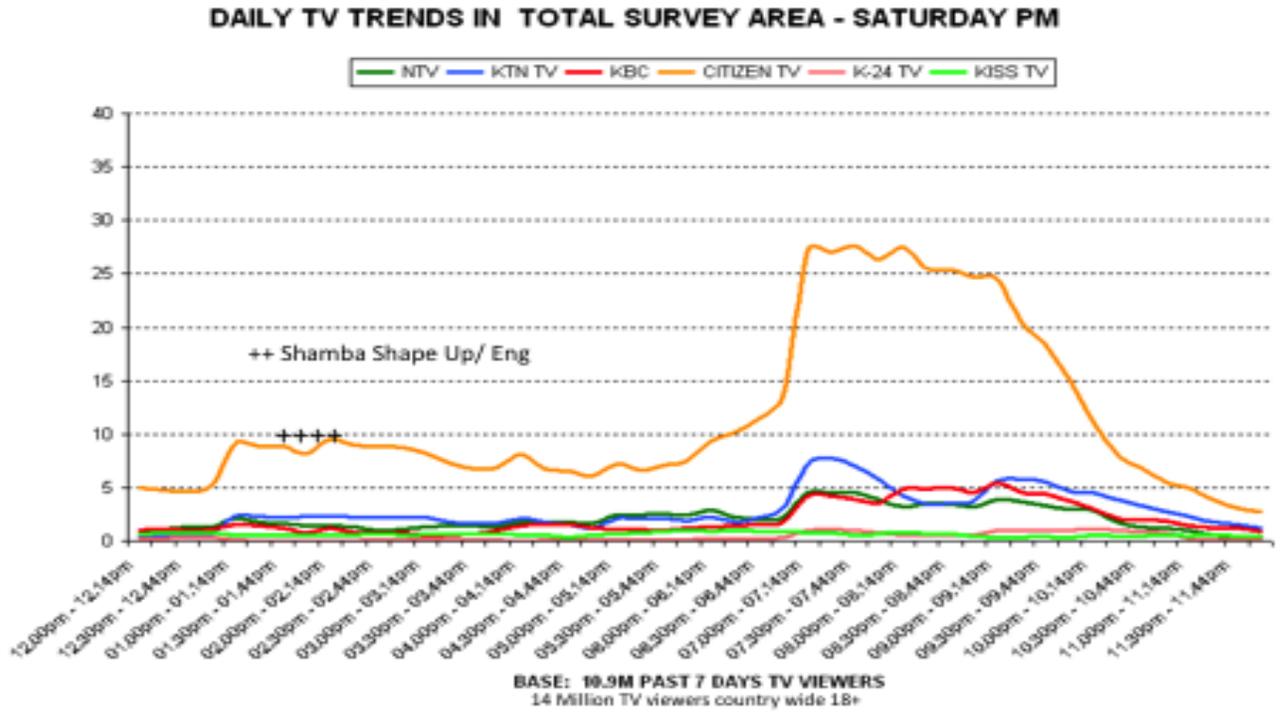
Based on the geographic and demographic profiles of the Wave One and Wave Two samples it is technically acceptable to compare the estimates derived from both samples, where the sample size permits. In this report the minimum sample size used for comparative purposes is n=30.

VIEWING TO *SHAMBA SHAPE UP*

The official, industry viewing data from the Kenya Advertisers' Research Foundation (KARF) for the period April to June 2012 were not available for inclusion in this report. However, it is possible to estimate the numbers of viewers from data and reports from Royal Media Services (Citizen TV). Citizen TV observed an increase in the number of SMS/Phone- in responses received by the channel during the period of broadcast. On the basis of that activity and such data as they have available Citizen TV estimates that *Shamba Shape Up* improved their audience delivery on Saturdays and Sundays during the months of broadcast. There are an estimated 14 million television viewers in an average month.

- On Saturdays during English version the overall reach during the time *Shamba Shape Up* was aired was an estimated 9% representing an audience of some 1.26 million
- On Sundays during Swahili version the overall reach was estimated at 16% representing an audience of some 2.24 million
- Although there may have been some overlap in viewing between the English and Swahili versions, it is highly unlikely that this would have been significant. Therefore, combining the two audience estimates the series reached an estimated 3.5 million television viewers

Figs. 5 and 6 TV Viewing on Saturday and Sunday Afternoons



True viewing figures are hard to come by as these figures - derived from self-completion diaries kept by viewers - demand that the user is literate and a 'Past Seven Days' television viewer. As such, a true picture of rural viewers is unlikely to be well represented by these data. However, an estimate of a minimum of 3.5 million viewers is likely.

Fig 7: *Shamba Shape Up* Viewers by Survey Area

(based on households with 0.5 - 10 acres a focused on areas with high probability of having electricity)

		Frequency	Yes	%	No/No response	%
Valid	Bungoma	109	33	30%	76	70%
	Busia	136	37	27%	99	73%
	Embu	78	34	44%	44	56%
	Homabay	92	35	38%	57	62%
	Kakamega	74	31	42%	43	58%
	Kangundo	46	26	57%	20	43%
	Kikuyu	84	40	48%	44	52%
	Kisii	87	43	49%	44	51%
	Limuru	87	29	33%	58	67%
	Machakos	75	35	47%	40	53%
	Makueni	62	29	47%	33	53%
	Naivasha	78	35	45%	43	55%
	Thika	81	33	41%	48	59%
	Total	1089	440	40%	649	60%

For inclusion in Wave Two of the survey, there was a minimum quota imposed for *Shamba Shape Up* viewing of 50%. In other words, of the total number of 820 sampled farmers, 50% had to have viewed some of the series in order to qualify for interview. As Fig. 7 shows, only 1089 interviews was required to achieve this 50% quota.

This is a very good indicator of the series reach among small scale farmers in the selected geographies - **40%**. While this indicative reach figure among the series target audience cannot be extrapolated nationally, it is nevertheless an impressive figure for Series One.

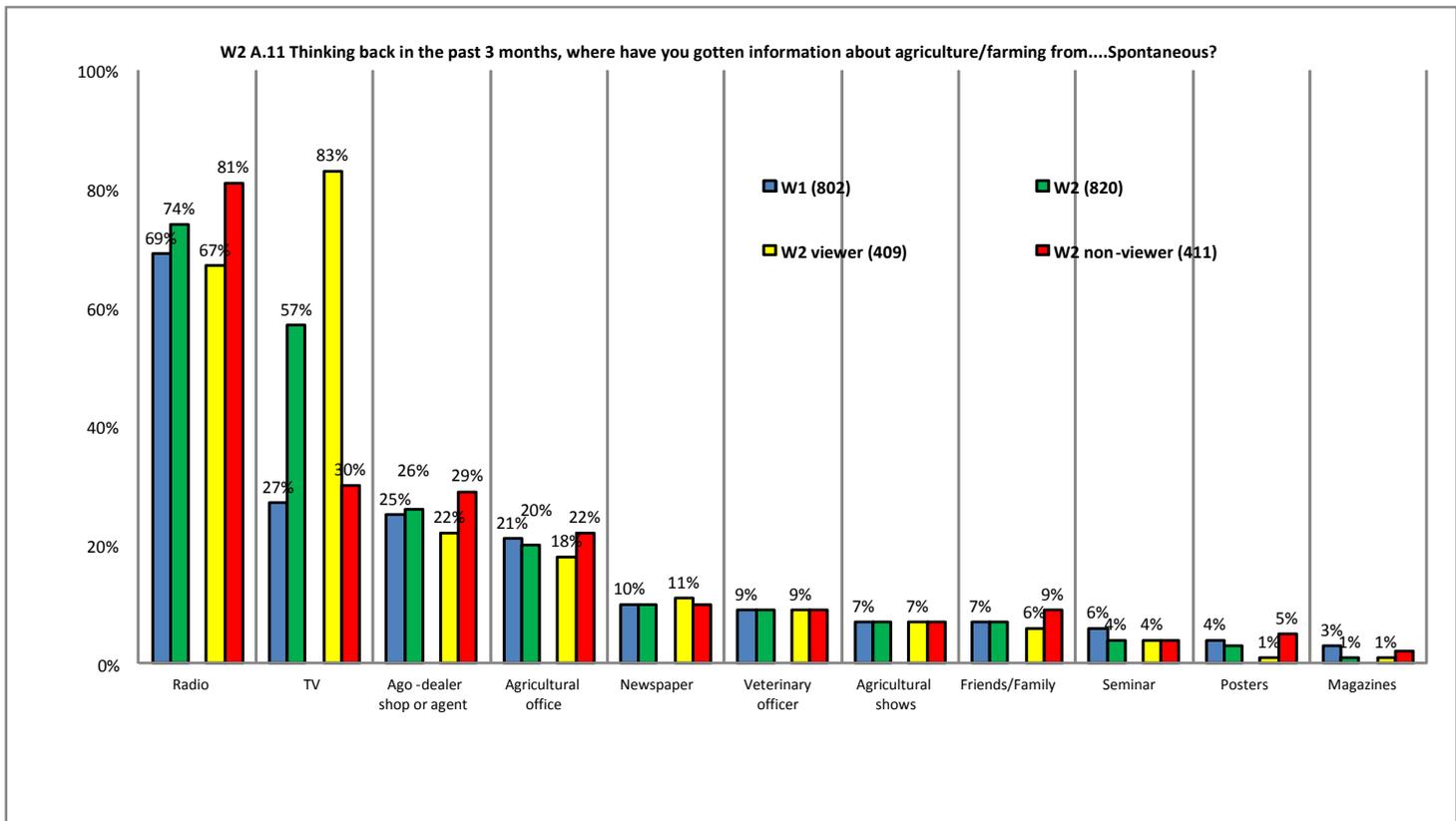
SOURCES OF INFORMATION ON AGRICULTURE

Sources used in the past three months

Radio and television are the two main sources of information about agriculture and farming for the majority of farmers interviewed during the course of this research.

- In June 2012, almost three quarters (74%) mentioned radio as a source they have used and as many as (almost) six in ten mentioned television
- *Shamba Shape Up* has significantly increased the importance of television as a source of information for agriculture and farming, with 57% of farmers mentioning television as a source for information after the series was transmitted, compared with 27% before hand. This huge increase elevates television as a close contender to radio as a key source of agricultural information for farmers
- Agro dealers and Agricultural Offices are mentioned by around a quarter of farmers while print in the form of newspapers, posters and magazines barely feature

Fig. 8 Sources of information for agriculture and farming

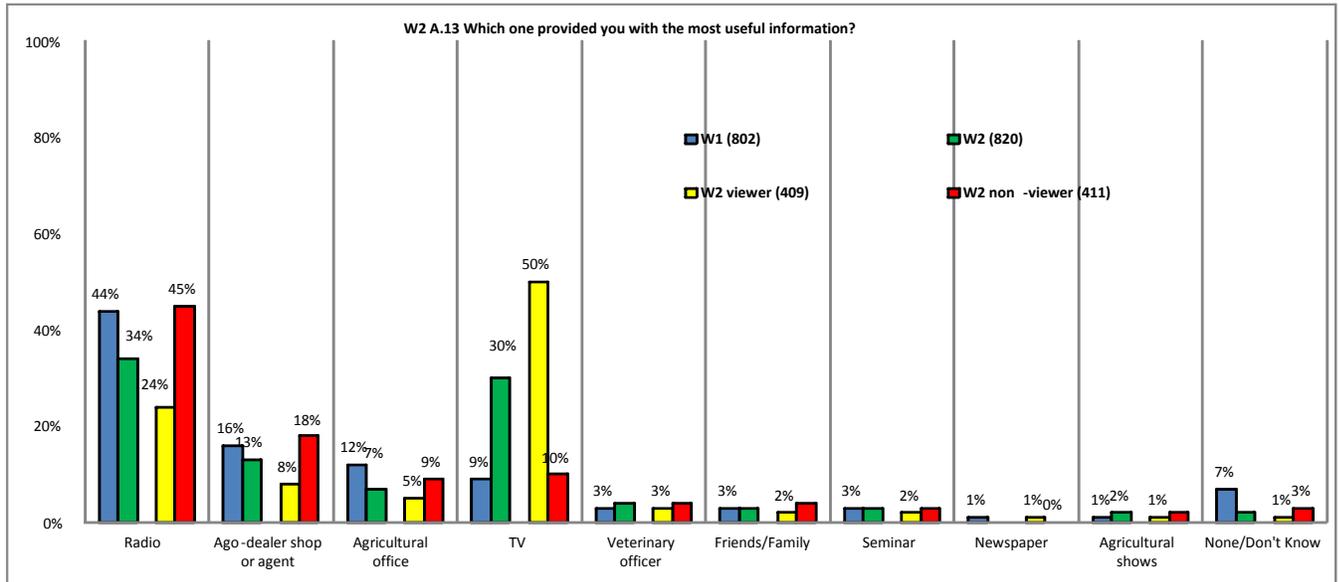


In addition to being the most used sources, radio and television are also seen to provide the most useful information for farmers

- Between Wave One and Wave Two radio dropped by ten percentage points in terms of its perceived usefulness as a source for agricultural and farming information, while over the same period television’s perceived usefulness rose significantly from 9% to 30%.
- The difference in television’s perceived usefulness as a source for this type of information was as high as 50% among *Shamba Shape Up* viewers – this compares with only 10% for non-viewers

- These data provide compelling evidence of the value and usefulness *Shamba Shape Up* viewers placed on the information and advice in the programme

Fig. 9 The source which provides the most useful information

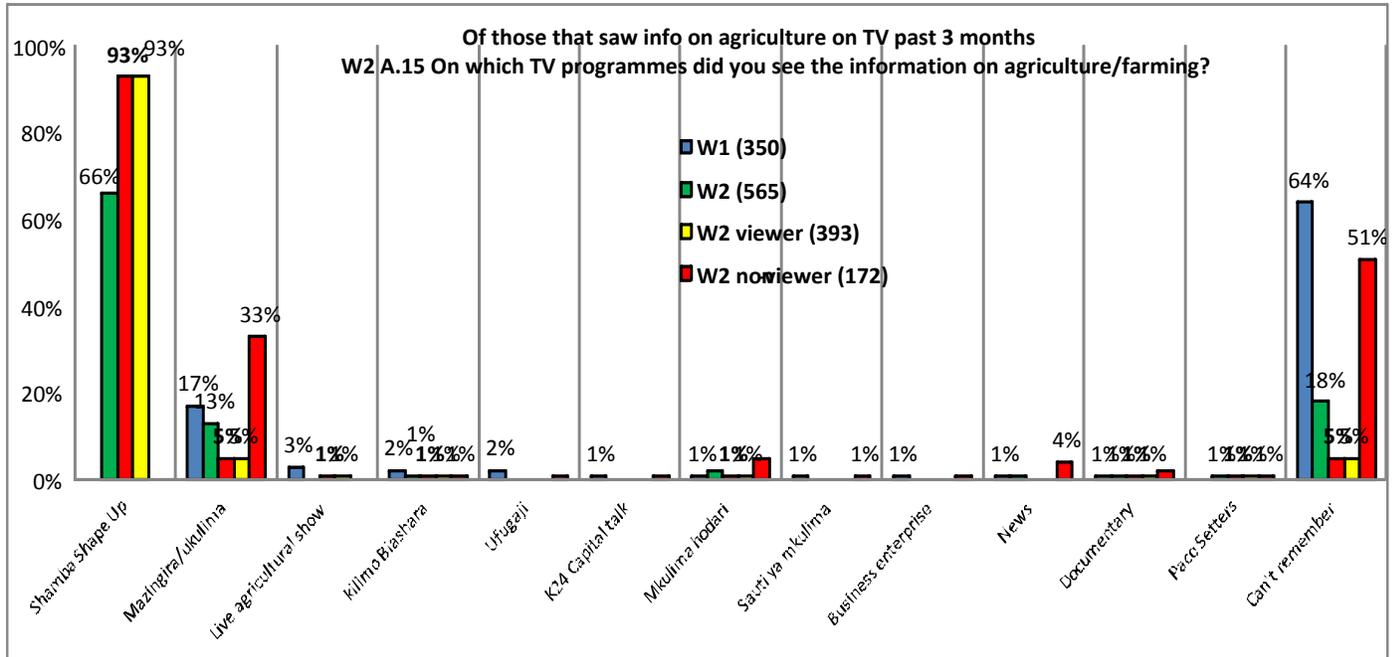


Shamba Shape Up as a source of information

Farmers who said they had seen information of agriculture on television in the past three months were asked to say on which programmes they had seen the information

- In Wave One there were mentions of Mazingira/Ukulima (17%) and Live Agricultural Shows (3%), but the majority (64%) could not name a specific programme
- In Wave Two *Shamba Shape Up* was mentioned by 66% of the sample, with no other programme being mentioned by more than 13%
- While these data make a very strong case for the role of *Shamba Shape Up* in providing useful information and for having strong series recall, it must be pointed out that to qualify for inclusion in Wave Two 50% of all respondents had to have viewed the series and be able to correctly name it and say when and on which channel it aired

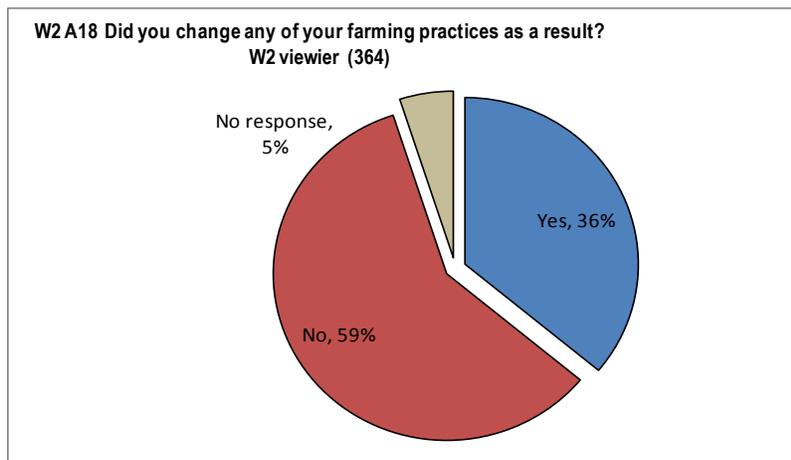
Fig.10 Recall of television programmes on agriculture/farming



Overall impact of *Shamba Shape Up* among viewers

When viewers were asked if they had changed any of their farming practices as a result of viewing the programme (s) just over one third (36%) said they had. This is a significant *behaviour change impact* after the first series of the programme and if this figure translates into actual behaviour change among small scale farmers it could be argued that the series is making a major contribution to the farming practices and the financial performance of this important sector of the economy, positively impacting the lives of some of the poorest people in the country.

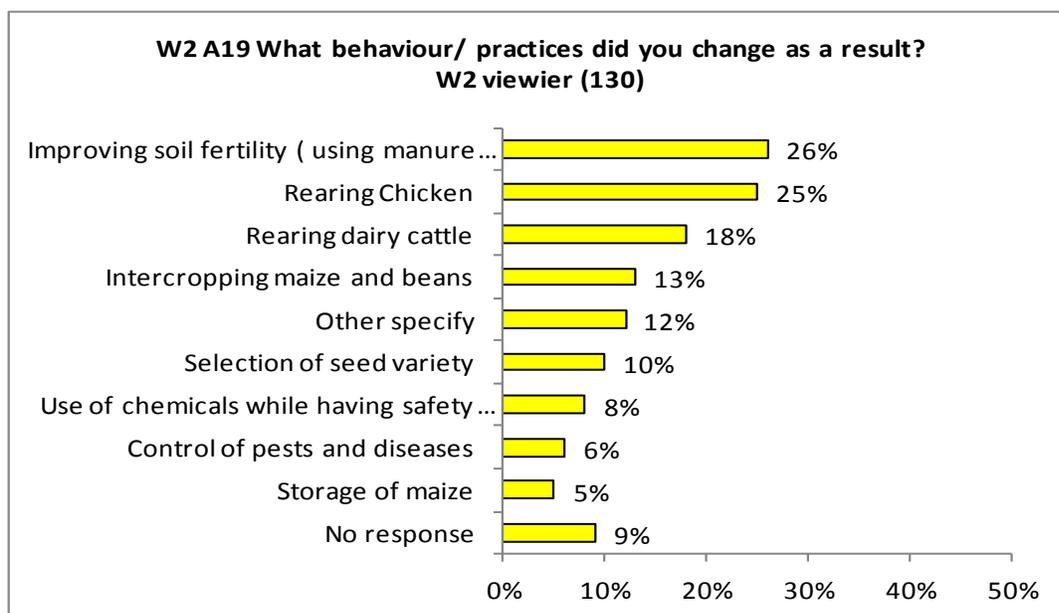
Fig. 11 Impact of *Shamba Shape Up* on changing farming practices



Further, the individual practices farmers said they had changed were in line with the amount of coverage the topics received in Series One, namely:

- 1) Crops: Soil Fertility leading to increased yields in food and for sale, with a focus on maize, beans, potatoes,
- 2) Livestock: Small holder Dairy and new breed and management with chickens as the featured content areas

Fig. 12 Impact on specific farming practices



The findings from the research have also highlighted those areas of information and advice that farmers would like to see more of in future programmes in order to improve their farms and the income they derive from their farms. This information has been shared with the programme producers for inclusion in future series, and is not presented in this report. There is also an SMS facility for farmers to interact with the programme makers, this provides almost instant feedback on the series as it is aired and offers a forum for suggestions for future content areas.

The volume of SMS messages received by the production team and the numbers of brochures requested and despatched each week are further evidence that Series One is engaging farmers and that there is a real need and appreciation for information directed at helping them improve their farms and their incomes. The two-way dialogue fostered by the programme appears to be an attractive approach in the communication of information, and the evidence to date suggests that it is having a positive effect on the knowledge and skills building of small scale farmers.

SOIL FERTILITY

Key Programmatic Themes

There were three main themes in relation to the topic of Soil Fertility, a topic which received considerable coverage in Series One. The information covered in the programme and the accompanying online and offline materials was as follows:

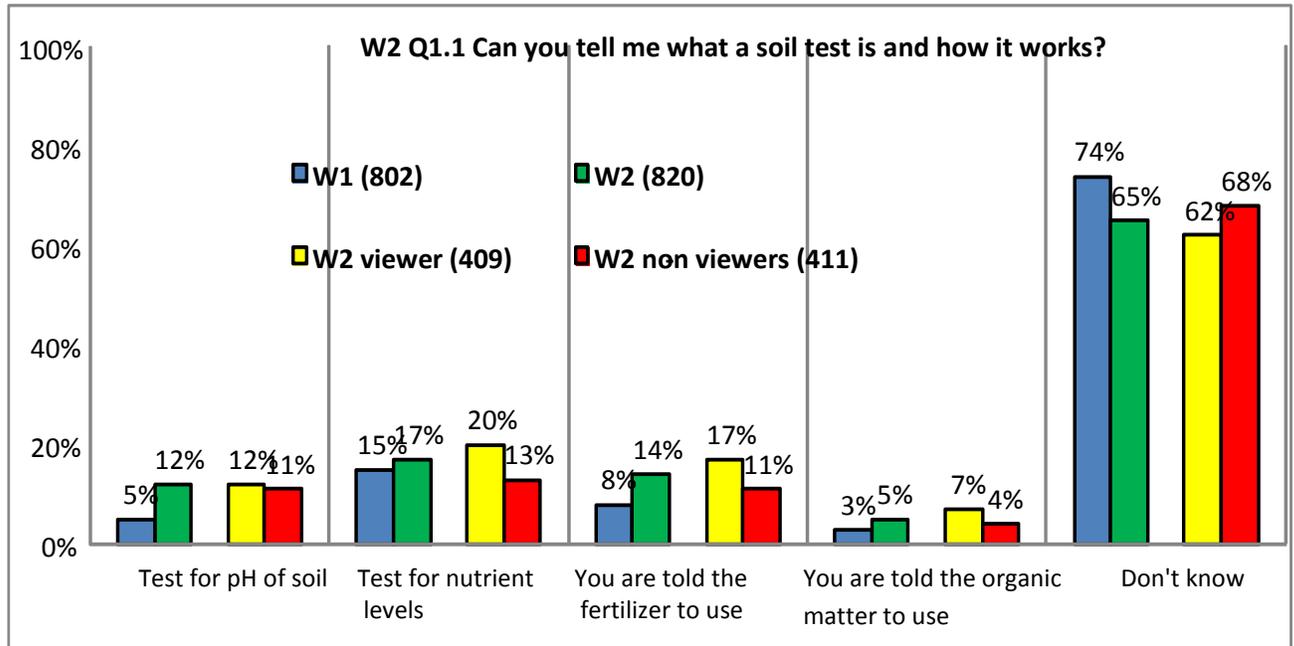
1. Soil Testing
 - what soil tests are and the reasons why soil tests should be carried out
 - how and where to get soil tests done with details and costs of public and private laboratories
 - Interpreting soil test results with recommendations
2. Use of fertilisers
 - Use of fertiliser and manure in land preparation and the planting process
3. Use of compost pits
 - Reasons for building compost pits
 - Composition of compost pits

Soil Testing

Awareness and Knowledge:

- Among the farmers interviewed over the two survey periods there was clear evidence of widespread lack of knowledge, awareness and the benefits of soil testing - ranging from the very basic knowledge of what soil tests are to the more practical knowledge of how they work, the reasons why they should be carried out to awareness of the benefits of having a soil test done
- In Wave One, as many as three quarters (74%) of farmers did not know what a soil test is. However, by Wave Two this had dropped by a significant ten percentage points to 65% as illustrated in figure 10. The data provide robust evidence that the series contributed to increasing farmers' knowledge of the basics of soil tests
- Further evidence that the television series had a positive impact on increasing farmers' knowledge about soil testing is supported by the slightly higher levels of knowledge about 'how it works' among *Shamba Shape Up* viewers across all of the knowledge attributes

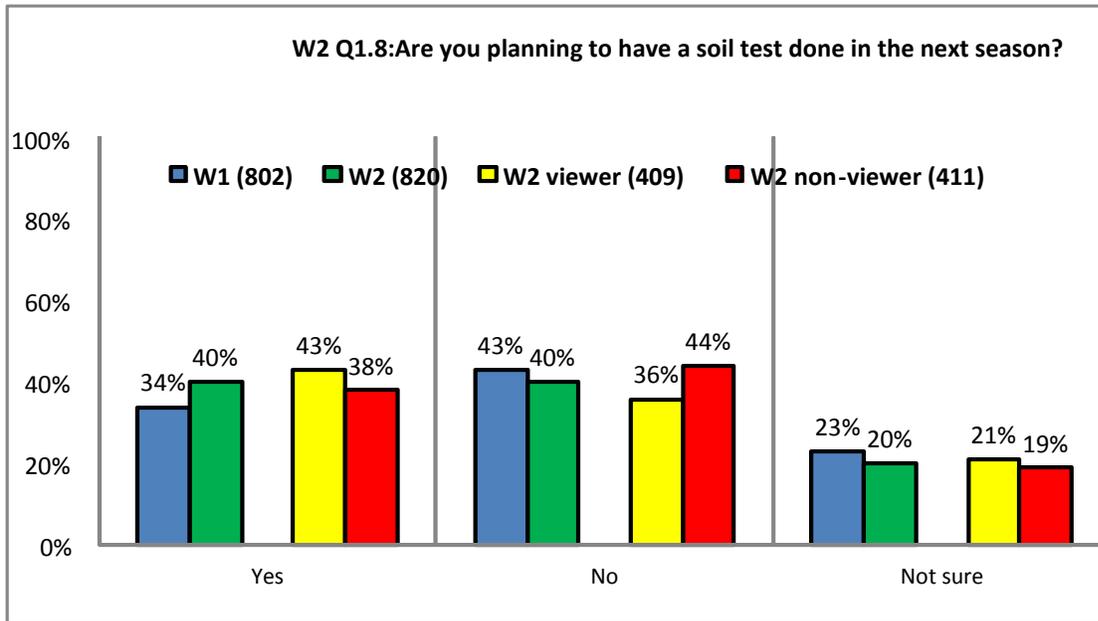
Fig. 13 Knowledge of soil testing



Current and Intended Practice:

- Almost all the farmers interviewed (95%) said they had never carried out a soil test, but encouragingly, as many as one third (34%) said they intended to have a test done before the series was broadcast, rising to one in four (40%) after the series. This points to the likelihood of *future behaviour change* as farmers become more educated as to the benefits of treating their soil
- Further, there is evidence to suggest that viewers of the series were more positively disposed to carrying out a soil test (43%) than their non-viewing counterparts (38%). Slightly fewer viewers, than non-viewers, cited cost as a reason for not intending to carry out a soil test and many – both viewers and non-viewers – said they needed more information
- Very few farmers know what a soil test actually costs, but after the programme one in five (21%) viewers knew that KARI was the place to go for soil tests, compared with just over one in ten non-viewers (12%)

Fig. 14 Intention to carry out a soil test

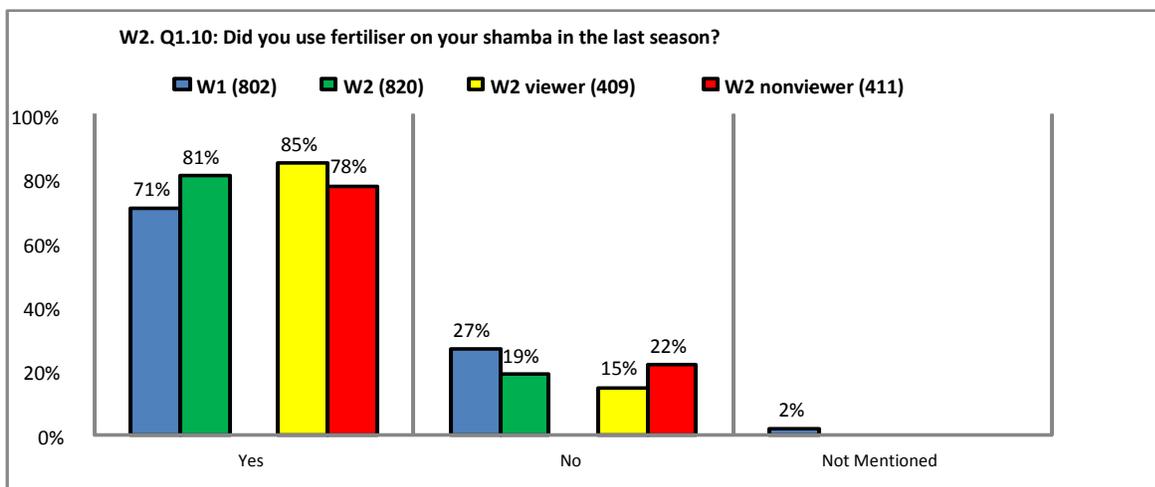


Using Fertiliser

Knowledge and Current Practice:

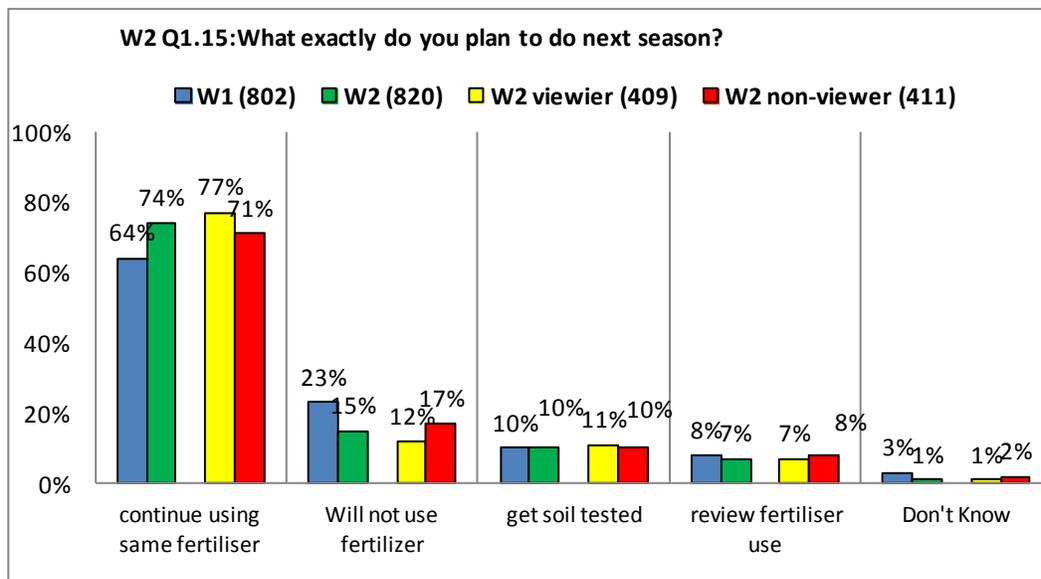
- The overwhelming majority of farmers said that they had used fertiliser on their shambas in the past year. In Wave One seven in ten (71%) said they had used fertiliser, rising to eight in ten after the series was broadcast (81%)
- Further, there was a difference in fertiliser usage of 7 percentage points between viewers (85%) and non-viewers (78%), suggesting that the messages about the benefits of using fertiliser in the series are leading to greater usage

Fig. 15 Current use of fertiliser



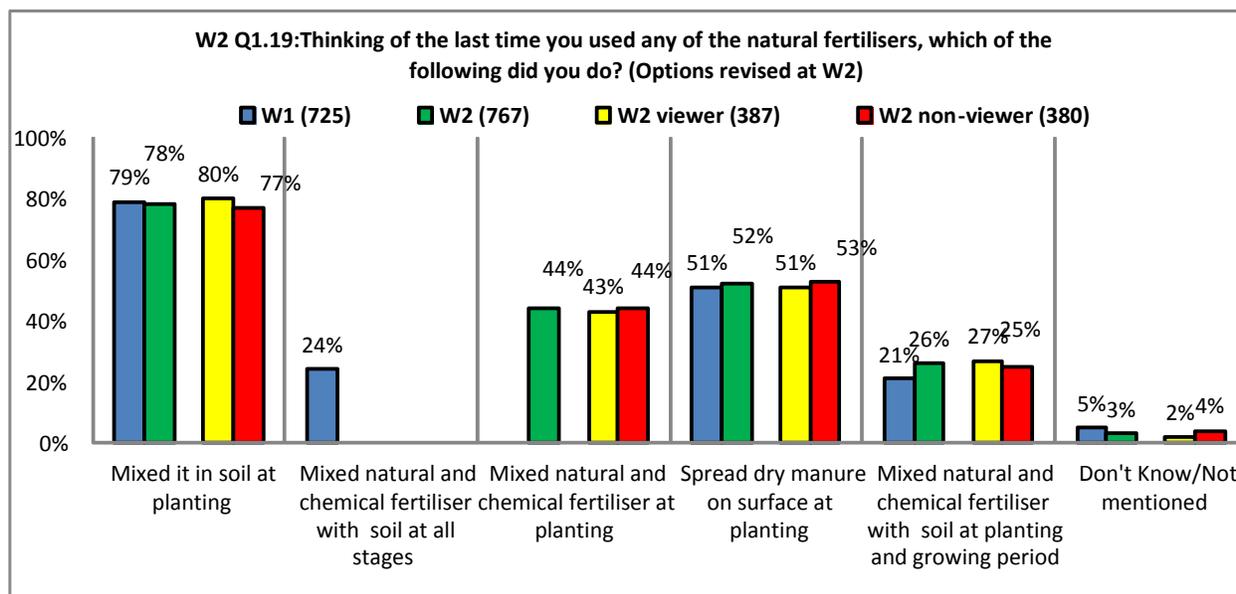
- Almost all fertiliser using farmers said they used DAP (89%) and or CAN (75%), none of the other types asked about in the survey achieved more than 8%. DAP was specifically recommended for use in the series
- Cash is king when it comes to paying for fertilisers (in over 90% of cases) and this remains farmers' future intentions
- Future intentions with regards to purchasing fertiliser was, for the majority, limited to use the same fertiliser as they are using now – this intention was higher after the series had aired – from 64% pre to 74% post and with a difference of 6 percentage points between viewers (77%) and non-viewers (71%) as illustrated in figure 16

Fig. 16 Intended use of fertiliser



- The vast majority of farmers said they used natural fertiliser in the form of livestock manure (over 80% in both surveys and among viewers and non-viewers)
- In terms of the actual use of fertiliser, the overwhelming majority of all the samples – pre and post; viewers and non-viewers (around 80%) said they ‘mixed it with soil and used it at planting time’. Around 50% across all the different sample groups said they ‘spread dry manure on the surface at planting time and around 40% of all the sample groups said ‘they mixed natural and chemical fertiliser at planting time’
- Around 7 in 10 said they applied combined natural (organic) and chemical fertilisers on maize either ‘at planting’ or ‘just before’

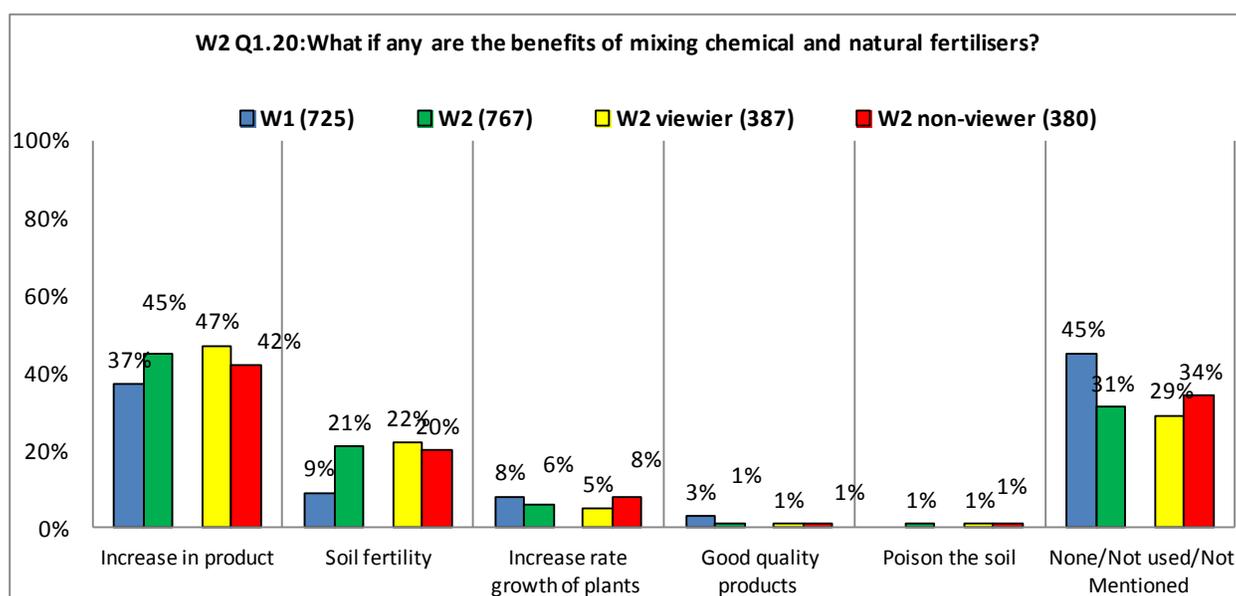
Fig. 17 Methods of using fertiliser



Attitudes and Intended Practice:

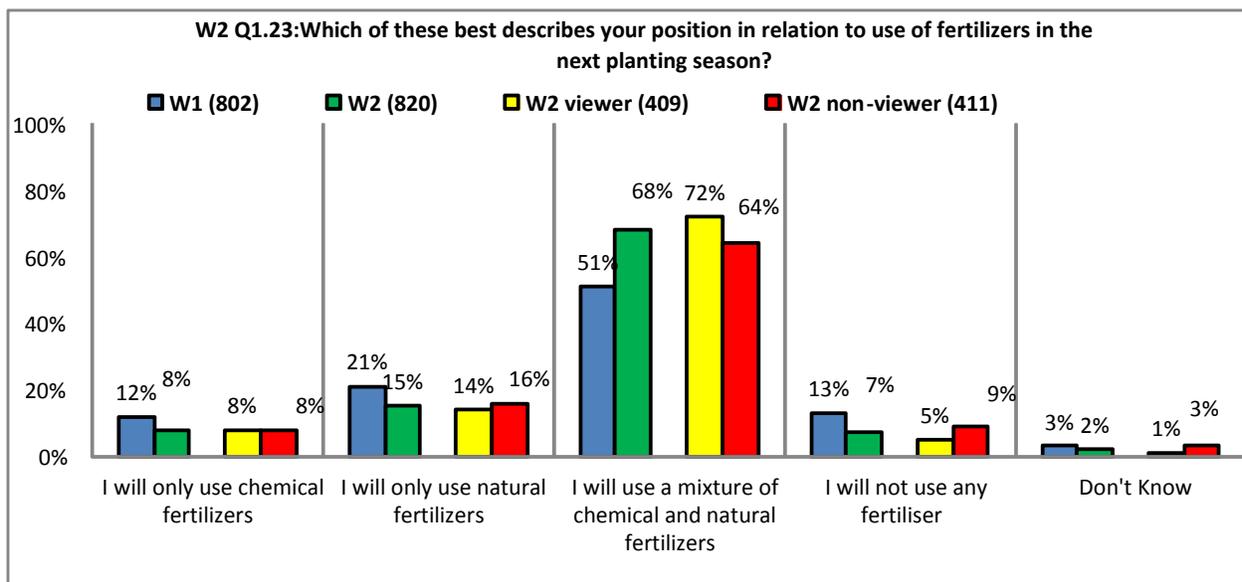
- The benefits of mixing chemical and natural fertilisers appear to have been well communicated by the programmes. As figure 19 shows, the messages about ‘increasing productivity’ and ‘improving soil fertility’ showed marked differences between Wave One and Wave Two - an uplift from 37% to 45% and from 9% to 21% respectively. There were small, but observable differences in knowledge benefits between viewers and non-viewers

Fig. 18 Benefits of mixing chemicals and natural fertilisers



- In terms of future behaviour it was very clear from the surveys that there was a significant increase in the numbers of farmers claiming that in future they would use a mixture of chemical and natural fertilisers – over the two survey periods there was a significant increase of 17 percentage points from 51% to 68% with a difference of eight percentage points between viewers (72%) and non-viewers (64%)
- Messages about the importance and correct use of fertilisers were well communicated and improved both knowledge and good practice

Fig. 19 Intended use of fertilisers in the next season

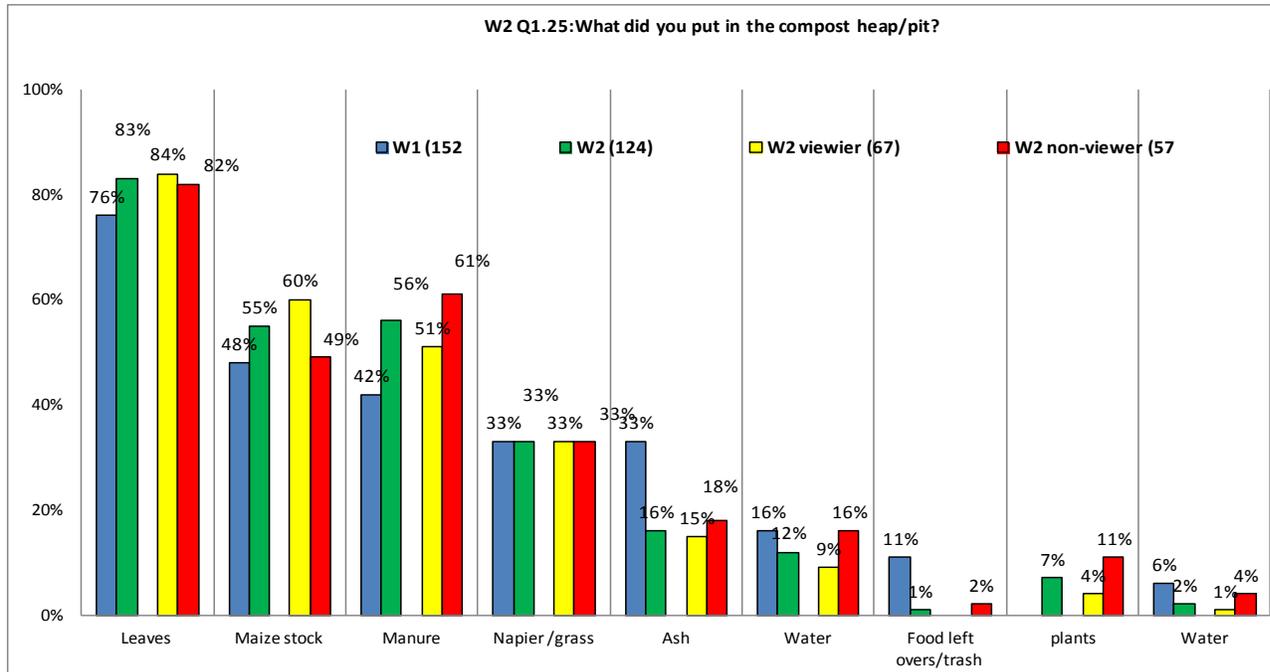


Compost making

Current knowledge and practice:

- Almost six in ten farmers said they had made a compost pit; with a significant ten percentage point difference between viewers (64%) and non-viewers (53%) – a strong indication that the messages about compost pit building were communicated to viewers of the series
- Further indications of successful messaging are evidenced by the materials farmers said they were building their compost pits out of - leaves (viewers 84%; non-viewers 82%), maize stock (viewers 60%; non-viewers 49%) and manure an overall Wave One to Wave Two increase from 42% to 56%

Fig. 20 The contents of a compost heap



Observations:

- The data suggest that the series has made a modest but positive contribution to increasing knowledge and intended behaviour with regards to soil testing and a more significant contribution to better understanding, awareness and use and benefits of fertilisers
- Changing the ‘long held’ attitudes and behaviours of farmers with regards to testing their soil is likely to require a more long term communication strategy in order to persuade farmers to behave in a way most of them have never done before.

SOLAR POWER

Key Programmatic Themes

The key messages in the programmes were focused around the disadvantages of using Kerosene as a lighting and power source, against the more advantageous use of solar lighting

- Kerosene is expensive, a health risk because of the fumes, the lighting is poor and there is a risk of fire
- Solar is cheaper, delivers a bright light and is time saving and safe
- The programme also showcased d.light solar products and provided information about how to find local stockists via SMS

Lighting

Access to and use of lighting and power sources:

- The majority of farmers in the Wave One and Wave Two surveys have access to electricity (69% and 74% respectively). Since the qualifying households were selected to have television sets, the sample was skewed in favour of households with a high propensity to have access to electricity
- However, these samples are not representative of access to electricity as a source of power among the small farming community at large which is estimated to be between 30% and 40%
- Average expenditure per week on lighting among these samples was between 100 and 200 Ksh

Knowledge of the advantages and disadvantages of kerosene and solar as lighting sources:

- The key programmatic messages about the disadvantages of kerosene: cost, quality of light and the risk of fire were demonstrably communicated to viewers of the series; however, messages about the damage from the fumes were not so clearly communicated
- The advantages of solar lighting were known equally to viewers and non-viewers – with the fact that it is cheaper to run being known by three quarters of viewers and non-viewers alike. Other benefits, namely safety issues, quality of lighting and the health benefits associated with solar were mentioned by much smaller proportions of respondents
- Awareness of portable solar lanterns was higher among viewers (44%) than non-viewers (37%) and television was attributed as the source of awareness by 35% of viewers, compared with 18% of non-viewers who were more likely to cite friends and family as their source of awareness. Printed sources, such as newspapers, inserts and magazines

did not feature at all as sources of information. Information through television, word of mouth and – to a lesser extent, radio are key to driving up awareness and knowledge about solar lighting per se and the products available in the market-place

- Intention to purchase solar lanterns was split almost 50/50, with non-viewers (who might be expected to have a higher propensity to purchase than viewers – with access to electricity) marginally more likely to express positive intention to purchase

Fig. 21 Problems of using kerosene

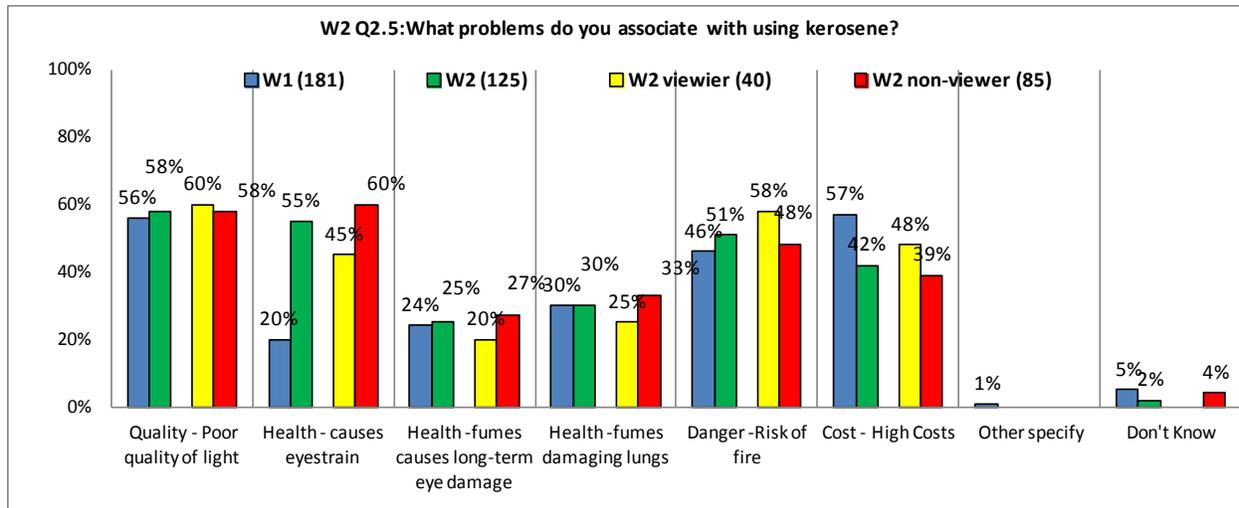
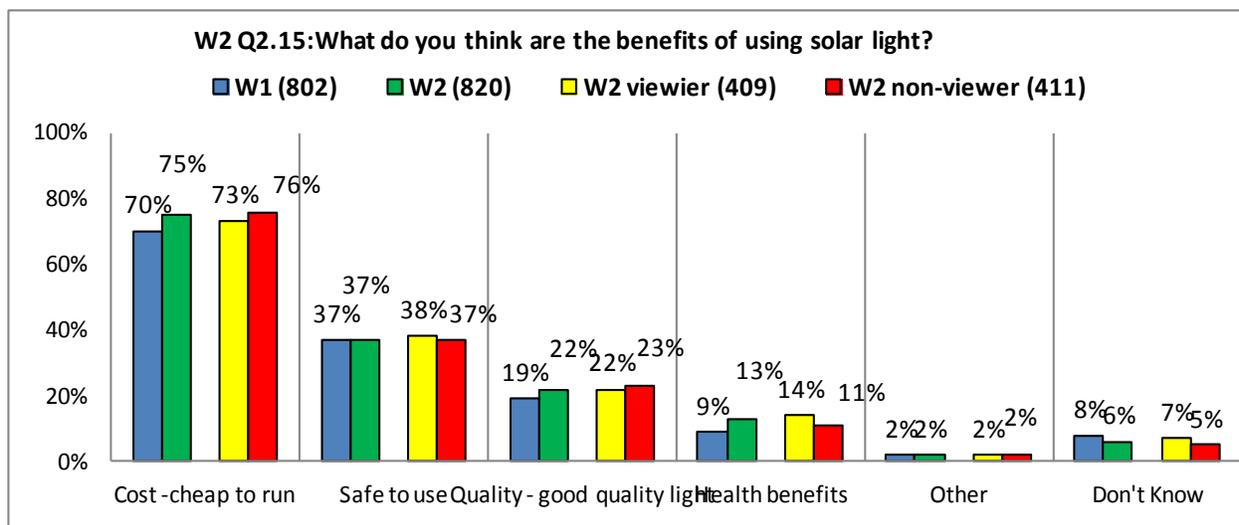


Fig. 22 Benefits of solar light



POULTRY

Key Programmatic Themes

Information about housing, breeding, feeding and the health of chickens was covered in many of the programmes in Series One. Specifically:

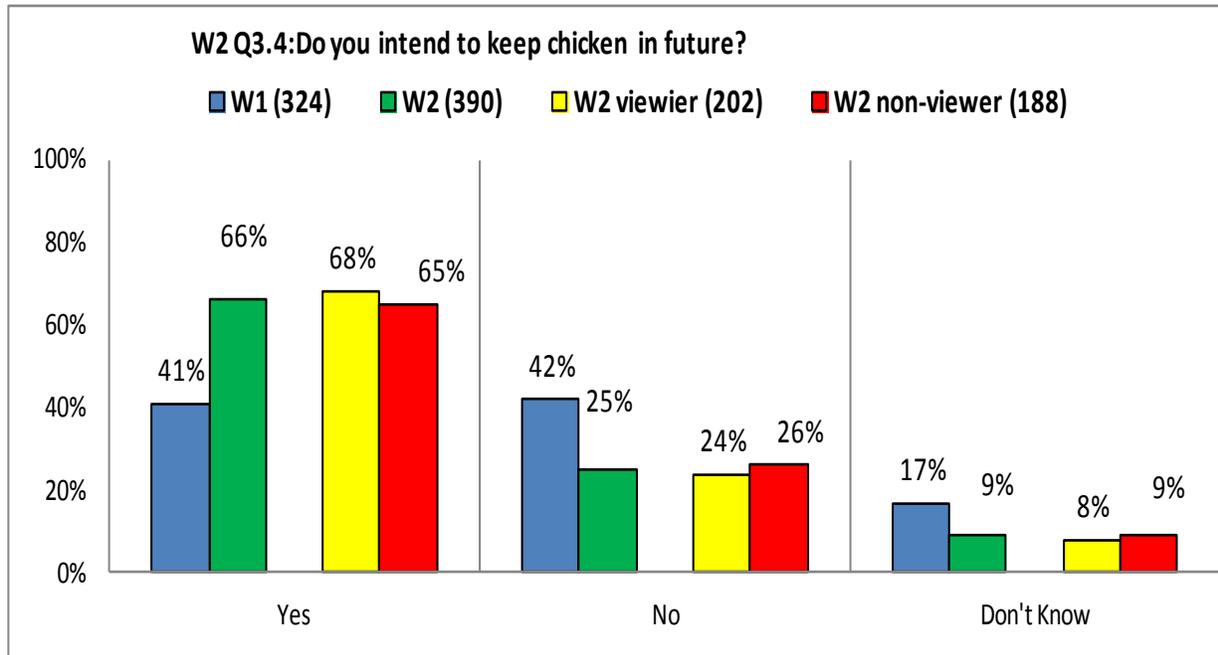
- The economic benefits of keeping chickens
- Housing chickens – hen house features, use of disinfectant and nest boxes
- Poultry husbandry and feeding

Keeping and making money from chickens

Knowledge and awareness:

- Around half of the farmers interviewed in both the pre and the post surveys said that they kept chickens, with 38% saying that they kept them to make money prior to the airing of the series; rising to 48% who said they kept them to make money at the end of the series. A comparison between viewers and non-viewers suggests that the series successfully conveyed the monetary benefits of keeping chickens (50% of viewers said they kept chicken to make money compared with 45% of non-viewers). Future intention to keep chickens rose by as much as 25 percentage points, from 41% to 66% over the course of Series One
- When it came to the question of the best way of making money from chickens the survey data showed significant differences between the two waves of the survey, but only small differences between viewers and non-viewers. The differences between Wave One and Wave Two for the total samples were:
 - Keeping layers only: 45% pre rising to 54% post
 - Keeping broilers separately from layers: 14% rising to 21% post
 - Keeping broilers and layers together: A decrease from 15% pre to 10% post
 - Keeping broilers only: A decrease from 15% pre to 10% post

Fig. 23 Keeping chickens in future



Chicken housing

Knowledge and practice:

- In both waves of the survey, around six in ten of all who keep chickens said that they had a chicken house. There are no differences in any of the sample groups.
- However, there are significant differences between the sample groups in terms of the features of the chicken houses they have. Very many more of the post series sample and, especially of viewers to the series, had chicken houses with open sides.
- Covering the open sides at different times of the day varied between the two survey waves, with wave two respondents showing an increase of nine percentage points over wave one, but with little discernable difference between viewer and non-viewers
- The advice given was to protect the chickens from weather by covering the open-sides with readily available materials – such as sacking. There is evidence from the surveys that this message was well communicated and that it resulted in behaviour change. For example, 27% of viewers (compared with 16% non-viewers) said they were now covering the sides of their chicken houses with nylon sacks and 25% viewers (16% non-viewers) said they were using sisal sacks.
- Only 10% of chicken farmers who viewed the series were not covering the sides of their chicken houses, compared with 26% of non-viewers
- Messages about the correct items to have in a chicken house clearly resonated with viewers and have positively impacted behaviour with regards to the better housing and rearing of chickens. (Figures 24 and 25)
- When it came to applying dawa to chicken feathers there was no discernable difference between viewers and non-viewers; around 50% of both groups of farmers said they

applied dawa to chicken feathers. Viewers were more likely than non-viewers to apply dawa once a month and they were more likely to apply dudu dust (42% viewers, compared with 29% non-viewers)

Fig.24 Features inside the chicken house

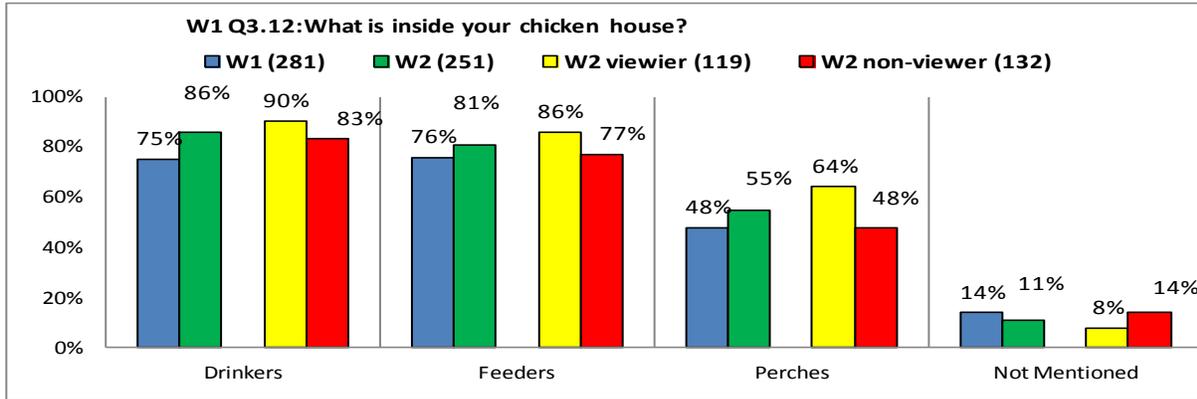
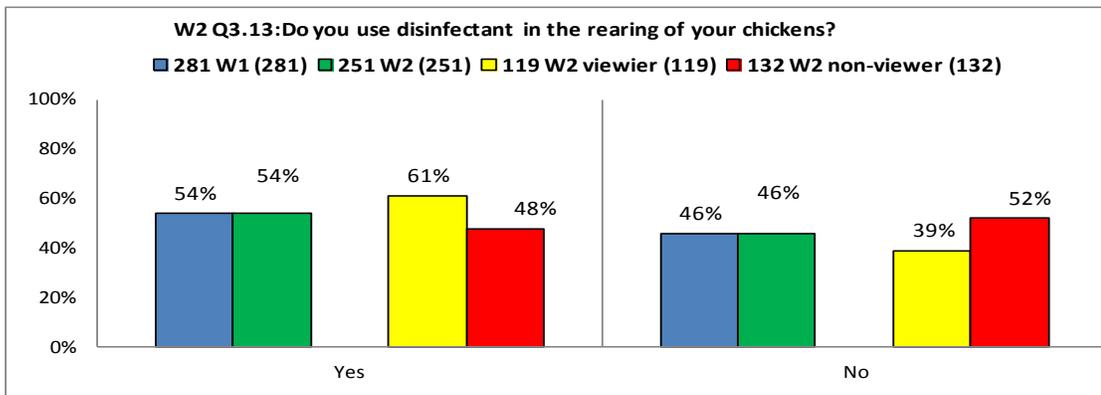


Fig. 25 Using disinfectant in the rearing process

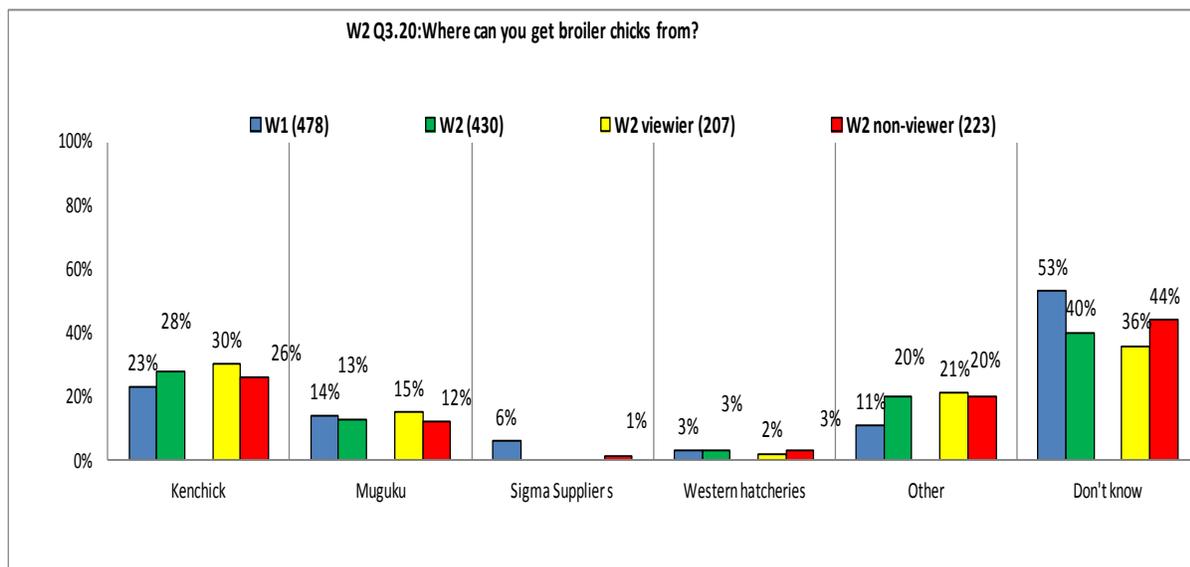


Keeping broilers

Knowledge and practice:

- Those proportion of farmers who kept broiler chickens who did not know where they got them from declined over the time the series was aired from 53% to 40% and conversely, a higher proportion of viewers (than non-viewers) said they sourced them from Kenchick and/ or Mgulu

Fig. 26 Sourcing broilers

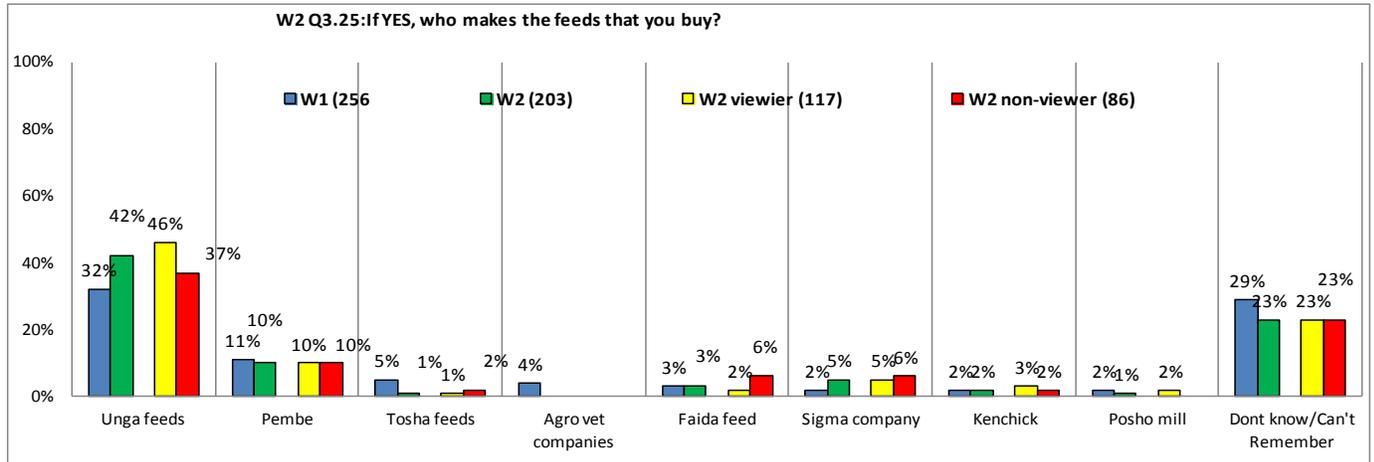


Chicken feed

Knowledge and practice:

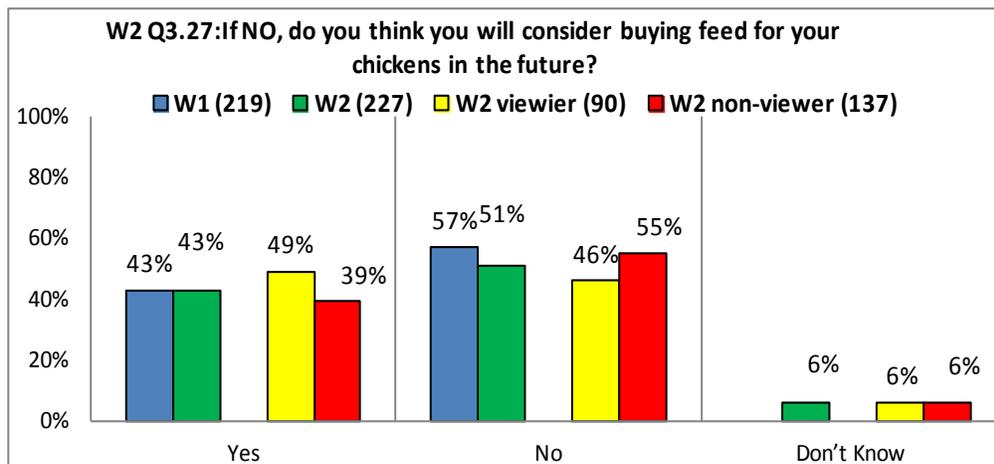
- A significantly higher proportion of viewers (57%) than non-viewers (39%) buy feed for their chickens and of those who do, Unga is the preferred maker of the chicken feed: 46% viewers who buy chicken feed, compared with 37% of non-viewers who buy chicken feed
- *Shamba Shape Up* appears to have contributed to an uplift in Unga's brand presence in that over eight in ten viewers (85%) had heard of Unga chicken feed compared with 74% of non-viewers and for around 50% viewers Unga was considered the main chicken feed provider in the country, compared with 33% for non-viewers
- Additionally, a much greater proportion of viewers who do not currently buy chicken feed (49%) intend to buy it in the future; compared with 39% of non-viewers
- The benefits of buying chicken feed changed little over the course of the series, with three quarters of viewers and non-viewers alike citing 'productivity, speeds up growth' and six in ten citing 'productivity, lay more eggs'

Fig. 27 Brands of chicken feeds purchased



- Additionally, a much greater proportion of viewers who do not currently buy chicken feed (49%) intend to buy it in the future; compared with 39% of non-viewers
- The benefits of buying chicken feed changed little over the course of the series, with three quarters of viewers and non-viewers alike citing ‘productivity, speeds up growth’ and six in ten citing ‘productivity, lay more eggs’

Fig. 28 Intention to buy chicken feed



SEED PROCUREMENT

Key Programmatic Themes

Information about buying and using seeds focused on buying new seeds (not using seeds from the last crop), buying seeds from seed companies and buying different varieties of seeds.

Seed usage and purchase points

Knowledge and practice:

- Over three quarters of all the farmers interviewed in both wave one and wave two said that they bought their main crop seeds from a seed provider. Only a small minority (around 10%) said that they used seeds from the last crop.
- For the overwhelming majority, buying new seeds from a company was seen to be the best practice
- Slightly more viewers (48%) than non-viewers (42%) said they had bought a different variety of seeds from those they typically use during the past two seasons
- Around a quarter of both viewers and non-viewers intend to change the seed variety they plant for their main crop in the coming year.
- Significantly more farmers in Wave Two said they would buy seeds from Kenya Seed Company in the coming year: 52% versus 30%. That being said, there was no difference between viewers and non-viewers with 52% in each group saying they would buy seeds from the Kenya Seed Company
- Although there was mention of KEPHIS in the series, there was almost no awareness of the KEPHIS SMS facility for information about the correct seeds for specific areas of the country

Fig. 29 Sources for main crop seed

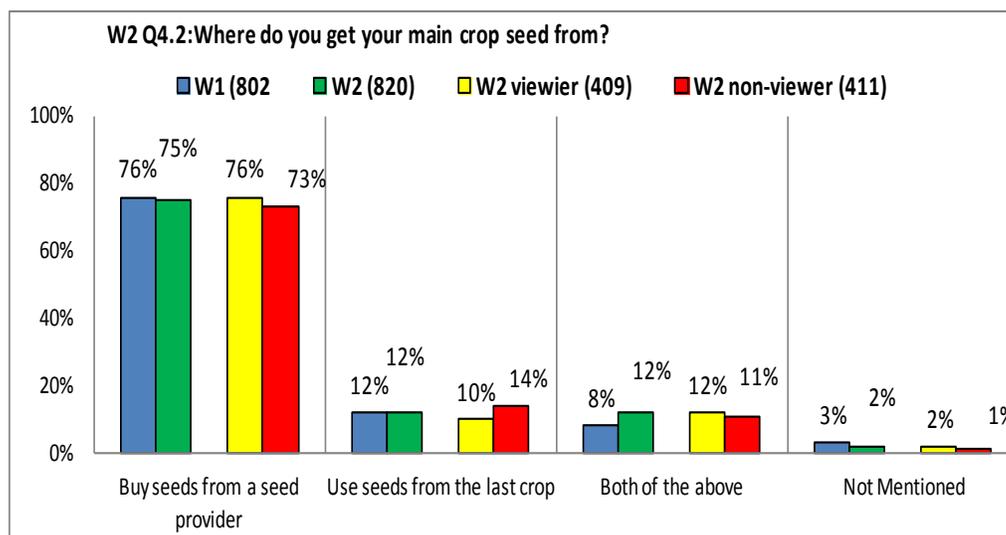
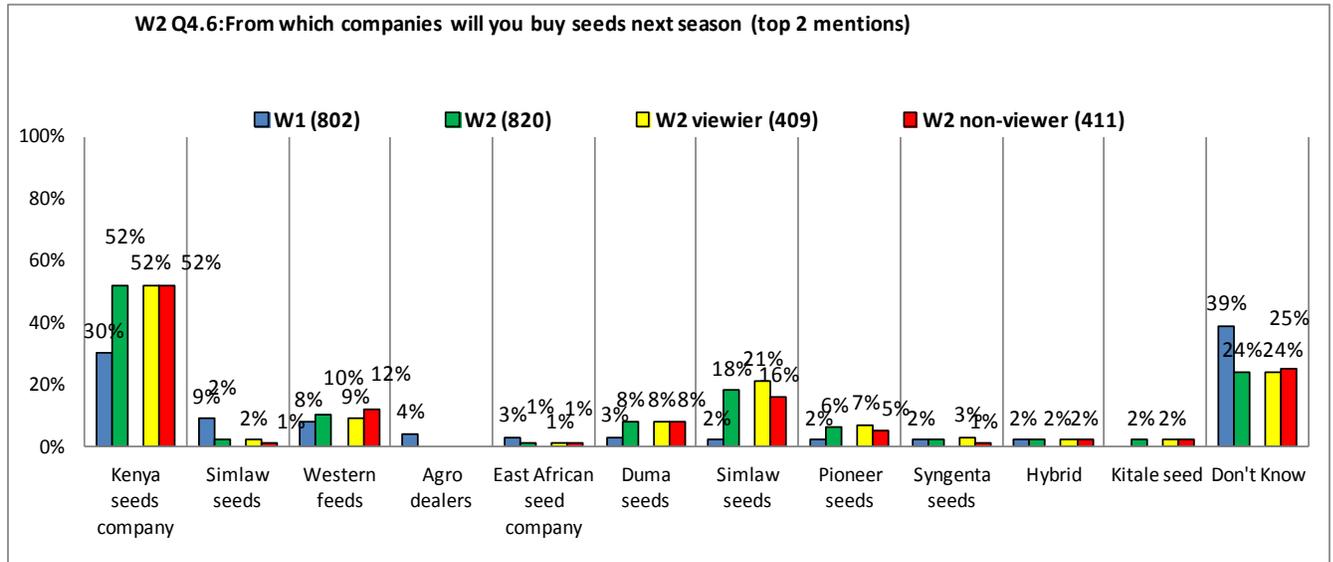


Fig. 30 Companies for sourcing next season's seeds



MAIZE

Key Programmatic Themes

The key messages focused on:

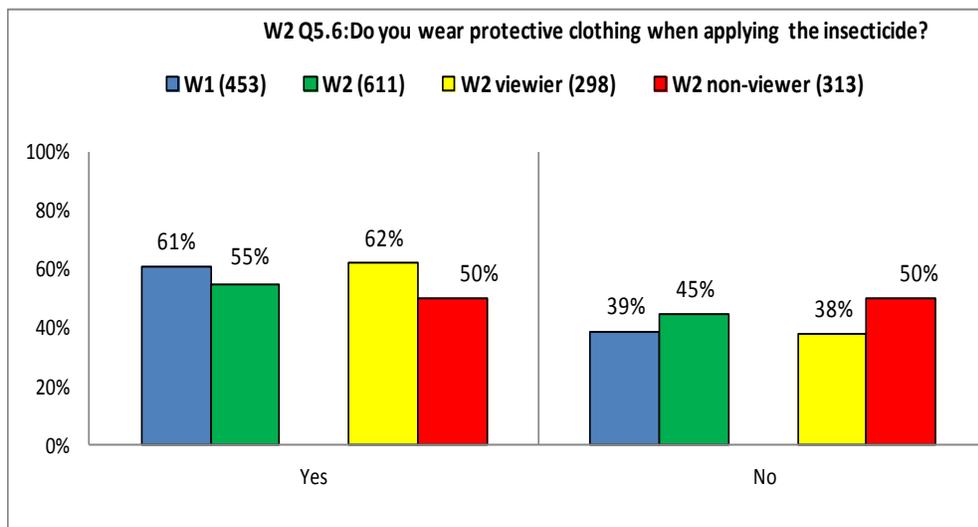
- Shelling maize by hand
- Applying insecticide and storing maize horizontally and in sacks
- Planting, correct spacing between the rows (2 feet apart) and 1 foot between each plant in a row
- Intercropping

Maize growing and storing

Knowledge and practice:

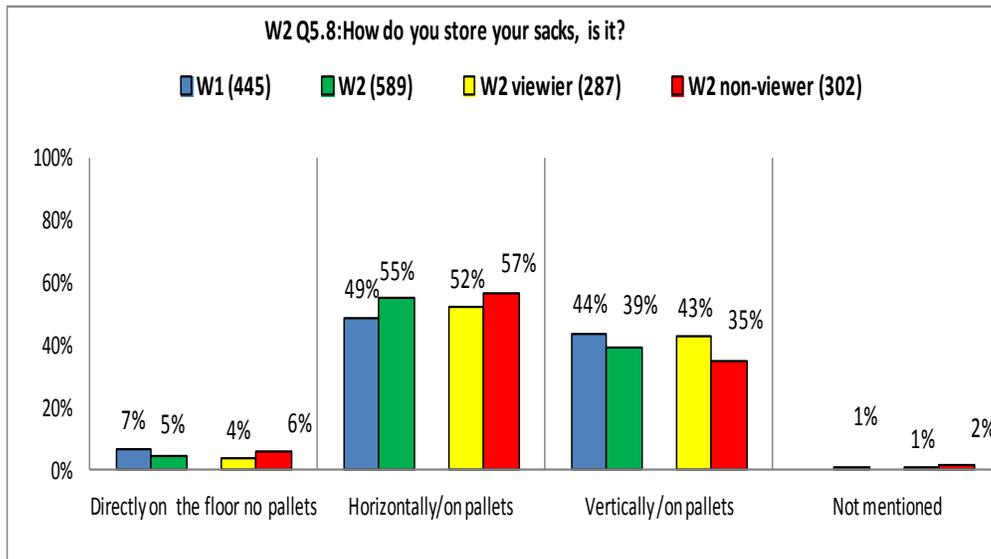
- Two thirds of maize farmers shell their maize by hand as recommended in the series. Those saying they shelled their maize with a stick reduced from 43% in wave one to 32% in wave two.
- As many as three quarters in wave two (up from 61% in wave one) said they applied insecticide to dried maize
- As shown in figure 31 significantly more viewers (62%) than non-viewers (50%) said they wore protective clothing when applying insecticide – this was a key message in the programme and the data suggest message cut through, leading to a change in behaviour, for this important safety measure

Fig 31 Wearing protective clothing



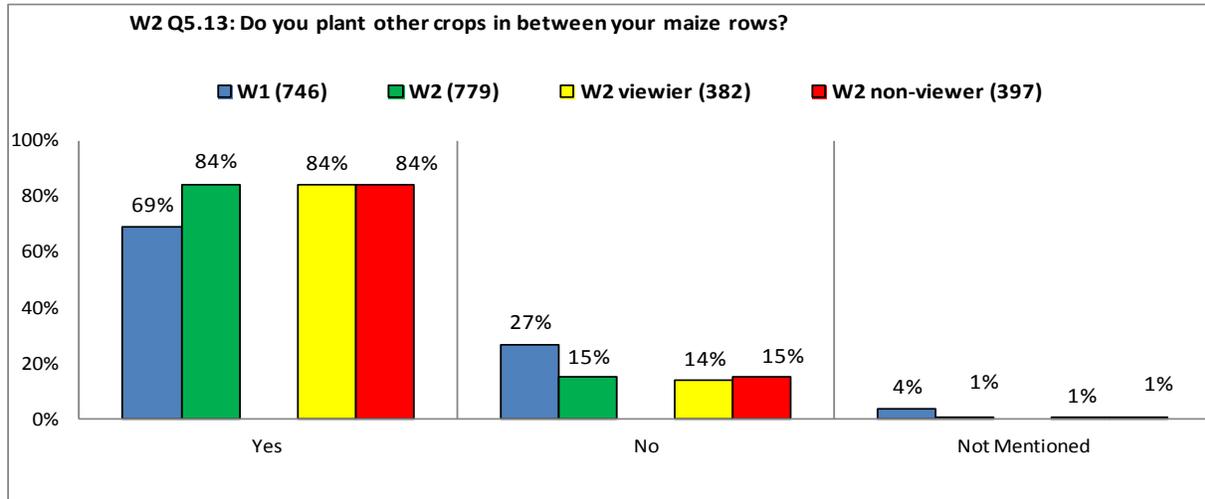
- Almost all maize farmers store their maize in sacks and around one half correctly store it horizontally – an increase of six percentage points from 49% pre broadcast to 55% post broadcast

Fig. 32 Storing maize sacks



- In terms of the spacing used when planting maize, the wave two data showed a slight increase in the correct two foot spacing (44% to 47%) and a slight decline in the incorrect one foot spacing (42% to 35%)
- Six in ten maize farmers claimed to use one foot spacing between each plant within a row after the series, up from 51% pre broadcast
- The proportions of maize farmers who used intercropping after the series rose considerably from those intercropping before the series – a rise from 69% to 84%; with beans being the intercrop of preference for the vast majority intercropping with maize

Fig. 33 Maize intercropping



POTATO PRODUCTION

Key Programmatic Themes

The key messages focused on:

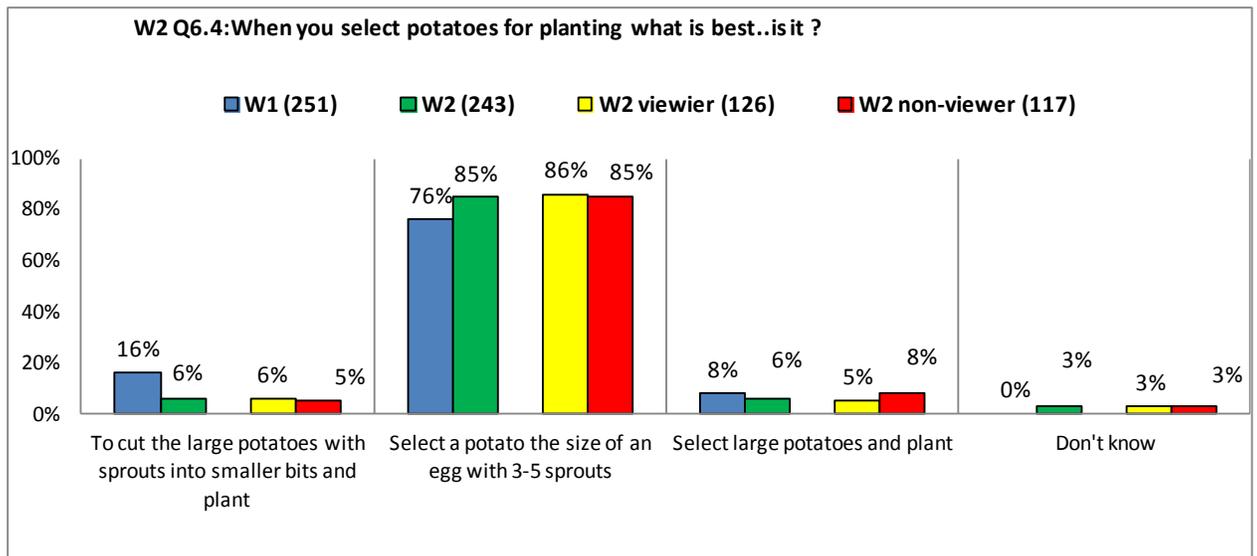
- The selection of potato seeds
- The correct identification of potato diseases and application of fungicides
- Planting process – spacing and fertiliser use

Potato Production Process

Knowledge and practice:

- Three quarters of potato farmers used last season's potatoes for their potato seed – an increase from 59% from the wave one survey. This appears to be a well established practice – 74% of viewers and non-viewers alike say that they have always done this
- In terms of selecting the correct potatoes for planting there was a nine percentage point increase between Waves One and Two (76% to 85%) in the correct selection of a potato the size of an egg with three to five sprouts

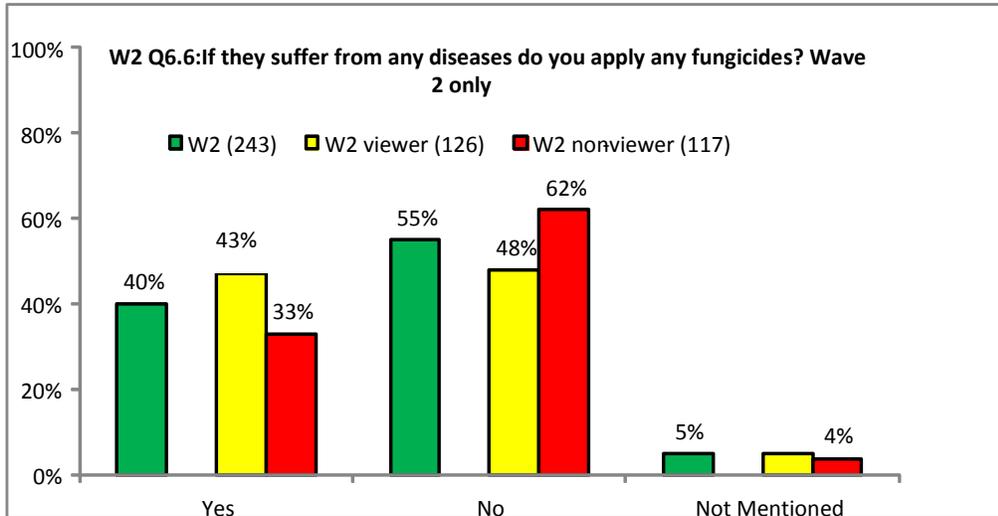
Fig. 34 Selecting potatoes for planting



- Around 90% of potato farmers report that their potatoes from diseases, the most commonly reported were blight (around 60%), rot of the tubers (around 40%) and wilt (25% among viewers/ 15% among non-viewers)

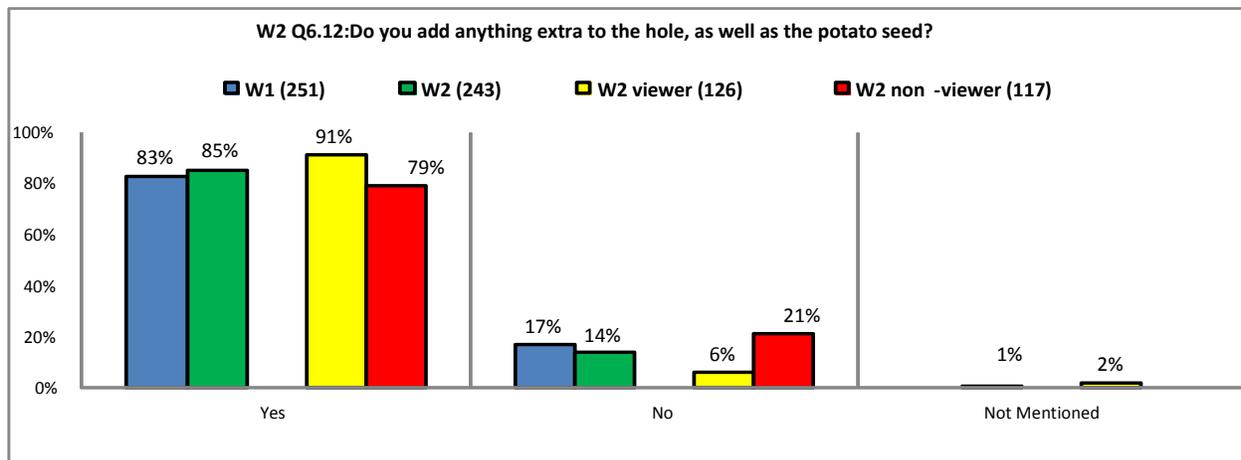
- Viewers of the series are 10% more likely to apply fungicide to diseased potatoes than their non-viewing counterparts (43%; 33%). This is an important indicator of behaviour change

Fig. 35 Applying fungicide



- Viewers are somewhat more likely than non viewers to apply the fungicide at 2 weeks and are significantly more likely to apply Ridomill (31% compared with 23%)
- Planting behaviour with regards to the spacing between rows showed a marked increase in 1.5 feet between wave one and wave two (an uplift from 18% to 42%); similarly there was a significant uplift in the correct answer of 1 foot in the spacing between the holes (40% to 64%) and in the depth of each hole (66% to 76%). This is strong evidence that the specific messages about good planting practices both reached and were remembered by potato farmers
- Significantly higher numbers of viewers (91%) than non-viewers (79%) said they added either fertiliser or manure to the potato hole. With manure being the additive of choice for eight in ten potato farmers

Fig. 36 Adding extras to the potato planting hole



TOMATO PLANTING

Key Programmatic Themes

The key messages focused on:

- The use of insecticides
- The correct use of fertilisers in the planting process

Tomato growing

Knowledge and practice:

- The numbers of tomato growers identified in both waves of the survey was low (n=47 and n=61 respectively). As such Wave One and Wave Two – viewer and non-viewer survey differences are difficult to draw. The sample bases are too small to present charted data in this section
- With that caveat, it appears that tomato planters know that their plants suffer from disease (80%) and that they recognise that it is a good idea to apply insecticide (around 80%)
- Some six in ten apply insecticide when they grow seeds in the nursery and a range of brands of insecticide is used, from Rindomil at the top of the list of many other mentions. Significantly though, around a quarter of tomato planters do not know which insecticides they use
- Most tomato planters apply fertiliser as the plants grow (over 80%), every two or three weeks

BANANAS

Key Programmatic Themes

The key messages focused on:

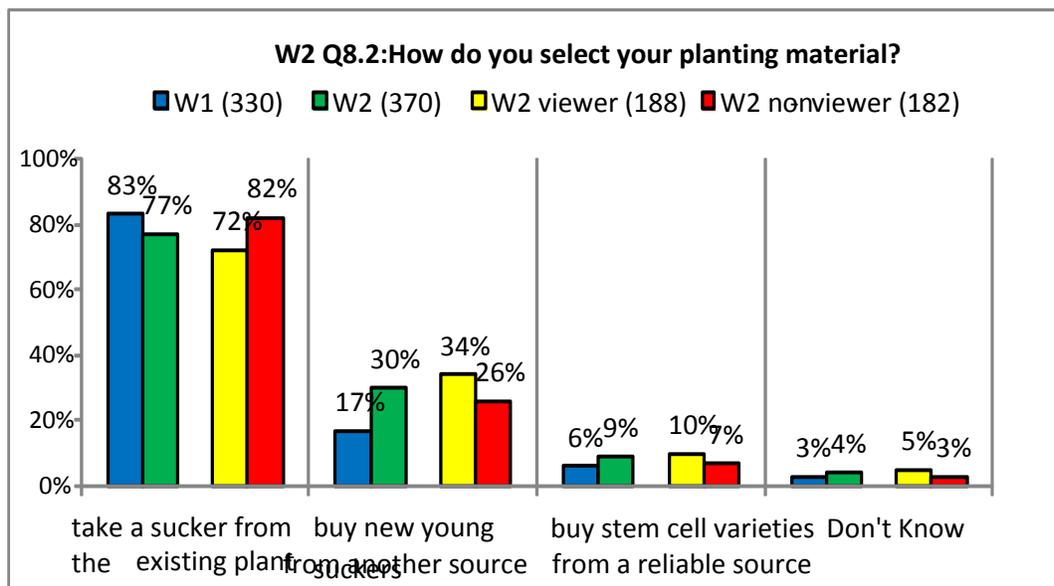
- The selection of planting material
- The 8 year replanting cycle
- The correct use of fertilisers in the planting process
- Spacing plants
- Pests and disease identification and control

Banana planting

Knowledge and practice:

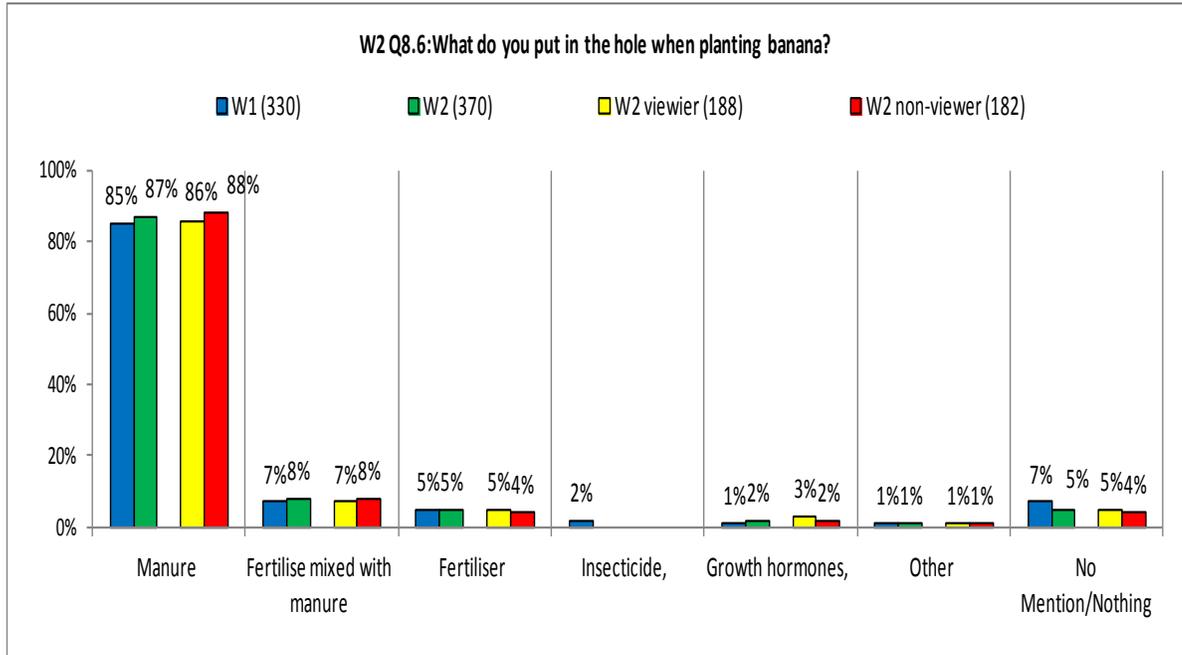
- The most commonly used method among banana planters for selecting their material is taking a sucker from an existing plant. However, the survey data illustrate the change in knowledge and practice among these farmers through a significant decline in this behaviour from wave one to wave two (decline of six percentage points from 83% to 77%) and, further, a difference of ten percentage points between viewers (72%) and non-viewers (82%)

Fig. 37 Selecting planting material



- Conversely, there is an increase in wave two respondents and viewers in buying new young suckers from another source to use as their planting material.
- Messages about the size of the planting hole and filling the planting hole with manure (as illustrated in figure 35) also seem to have been communicated

Fig. 38 Planting bananas



CALLIANDRA

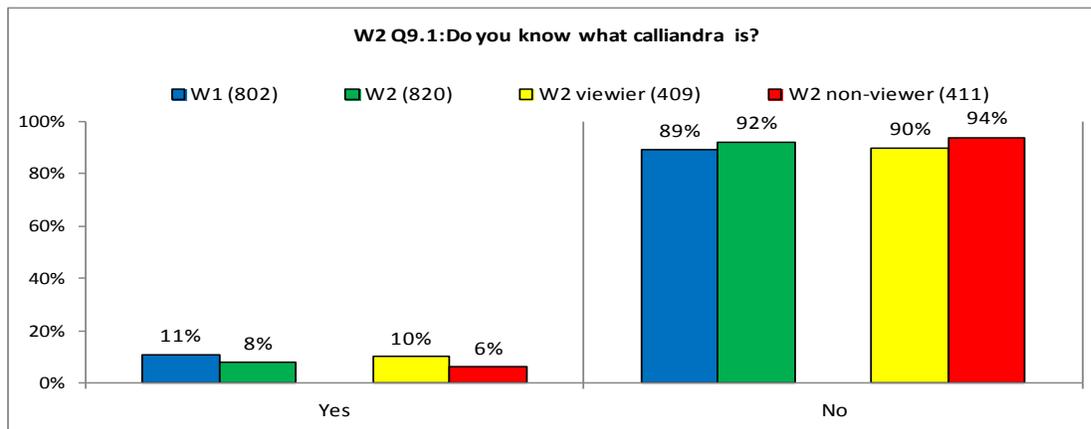
Key Programmatic Themes

The growing of Calliandra as a possible source of protein for the zero grazing of cattle was covered briefly in the series

Knowledge and intended behaviour:

- There is very low awareness of Calliandra – viewers to the series were marginally more aware of it (10%) than non-viewers (6%).
- Equally, marginally more viewers (41%) than non-viewers (36%) thought they might consider growing it in the future. A slight indication of future change in practice

Fig. 39 Awareness of Calliandra



USE OF PESTICIDES/CHEMICALS

Key Programmatic Themes

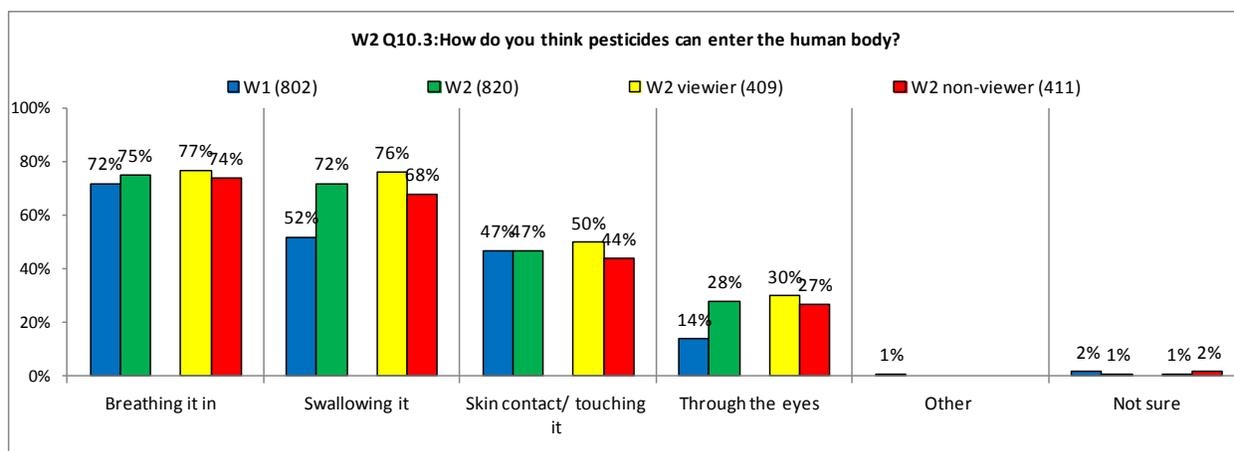
The key messages were:

- Safe use and identification of chemicals and pesticides and the importance of wearing protective gear

Awareness and Knowledge:

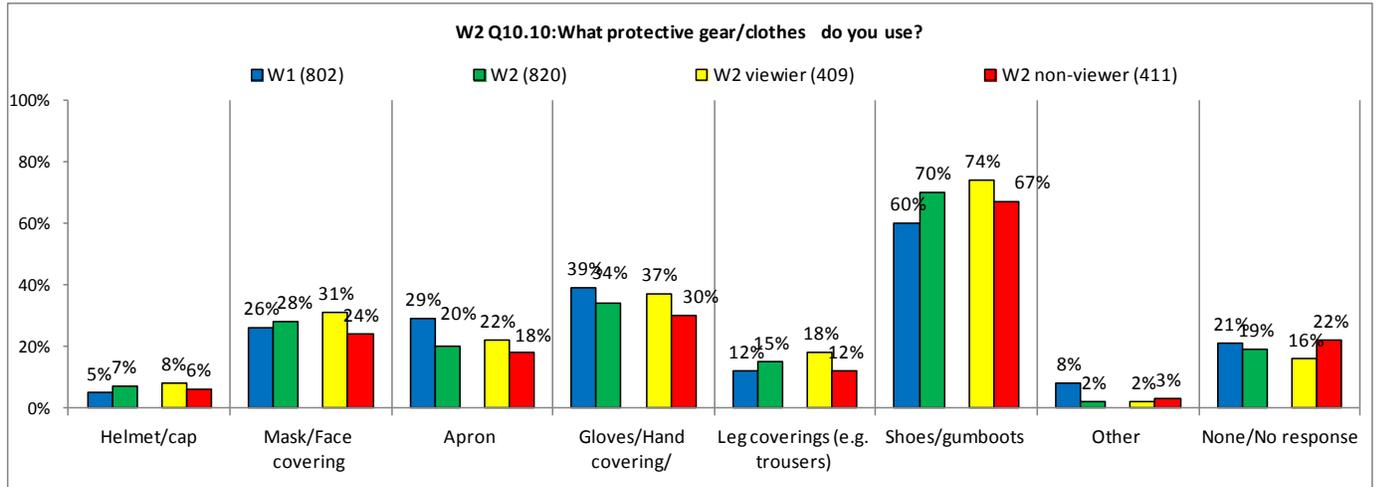
- There are high levels of awareness of the fact that pesticides can be dangerous to use – nine in ten farmers know that they can be dangerous to use. Specific dangers mentioned by viewers and non-viewers are illustrated in figure 40. Awareness of how pesticides can enter the body is consistently higher among viewers than non-viewers

Fig. 40 Awareness of how pesticide can enter the body



- In terms of following instruction on the labels of the chemicals used, around 50% said they always followed them, with a further 25-30% saying that they sometimes followed them
Believing in the efficacy of the information on the labels and the importance of the instructions about the right equipment to use was almost universal among all the farmers surveyed
- In terms of protective gear – awareness of all the types of protective gear was higher among viewers than it was among non-viewers as was its use. The biggest differences among the two groups in terms of usage was for: wearing shoes/ gumboots, masks/ face covering and gloves/ hand covering and trousers/ leg covering

Fig. 41 Use of protective gear



- A very slightly higher proportion of viewers (61%) said that they intended to buy protective gear in the future than non-viewers (58%)

FAKE CHEMICALS

Key Programmatic Themes

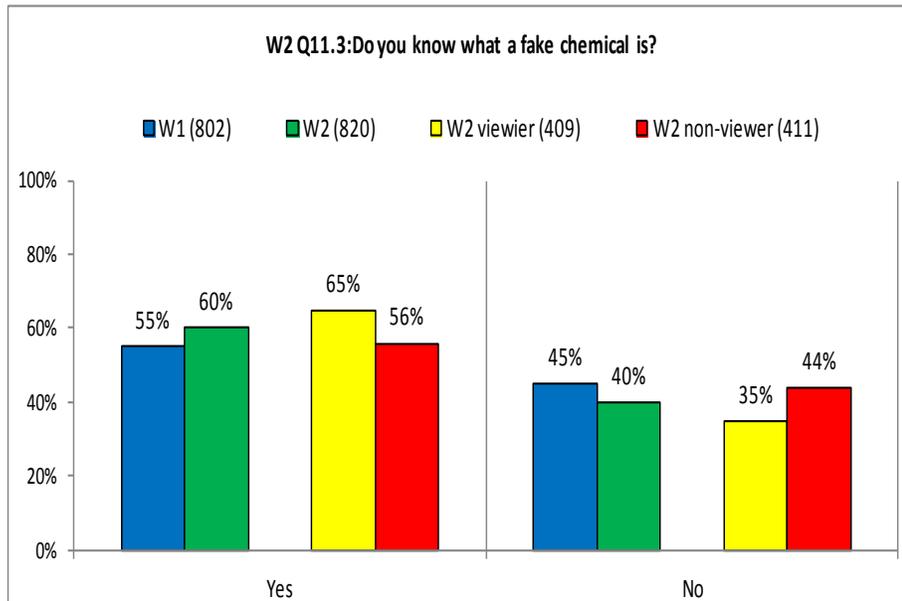
The key messages were:

- How to identify fake chemicals and what to do in the event of finding fake chemicals

Awareness:

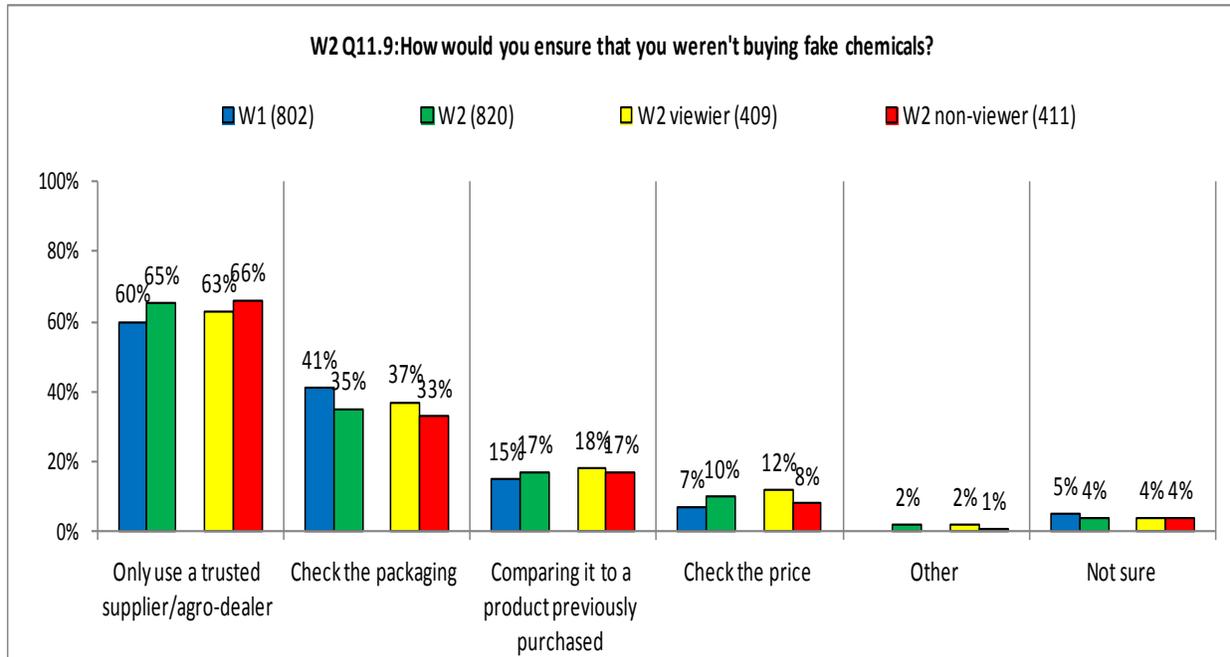
- There was an uplift in awareness of fake chemicals between Wave One and Wave Two of five percentage points (from 55% to 60%) and of nine percentage points between viewers (65%) and non-viewers (56%)

Fig. 42 Knowing what a fake chemical is



- Two thirds of all the surveyed groups said that they would not buy a fake chemical and more viewers (17%) than non-viewers (10%) said they would report fakes to the authorities
- To avoid buying fake chemicals around two thirds of all farmers said they would only buy chemicals from a trusted supplier/ agro dealer. Slightly more viewers (37%) than non-viewers (33%) said they would check the packaging

Fig. 43 Buying fake chemicals



- Overall levels of awareness of the drug Gladiator are very low (10% among viewers and 5% among non-viewers). When shown a picture of the packaging more respondents said they could not tell if it was a fake or not, than correctly identified as being genuine

DAIRY CATTLE

Key Programmatic Themes

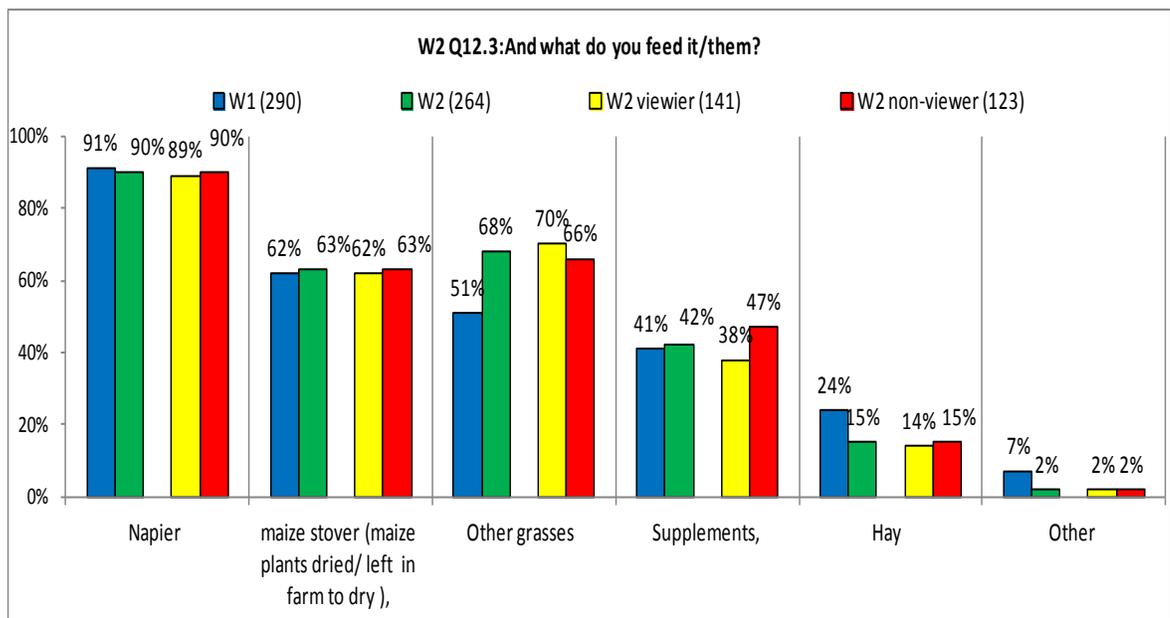
The series covered dairy cattle in many different programme and overall contained many messages including:

- Feeding and zero grazing dairy cattle; using maize stovers; growing napier and making silage
- Zero grazing sheds
- Sources of protein for dairy cattle
- Identifying and treating mastitis

Knowledge and practice: Feeding dairy cattle

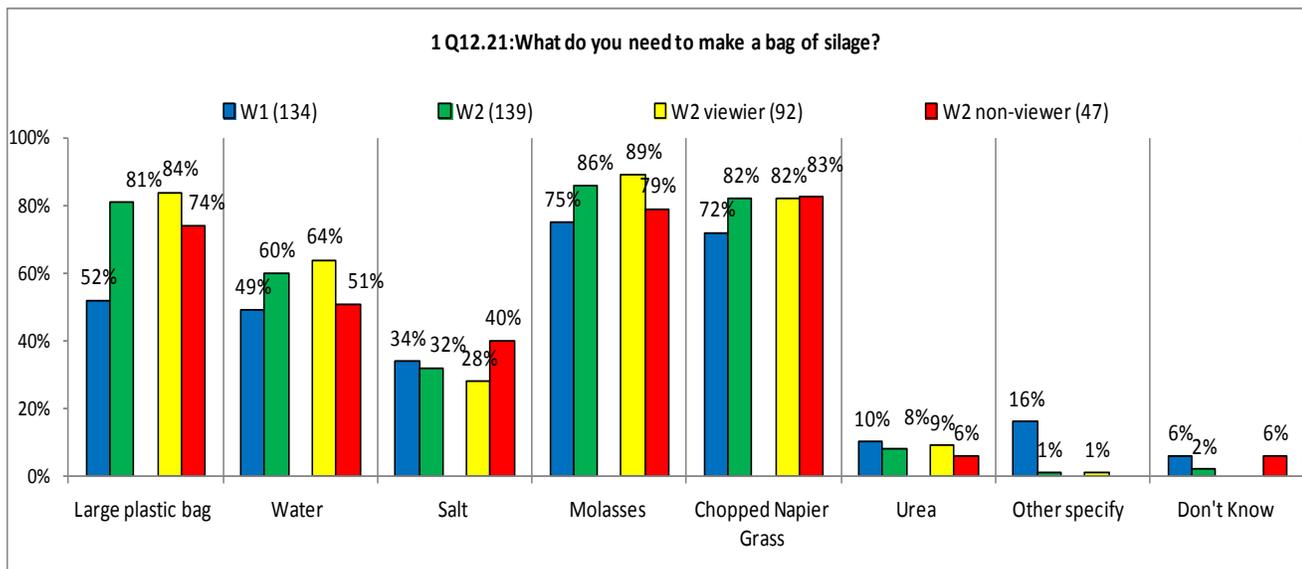
- Two-thirds of dairy farmers zero graze their cattle and the vast majority feed them on napier, two thirds feed them on maize stover and around 70% on other grasses. Across all of these behaviour attributes for the grazing and feeding of cattle there was a significant difference between the use of ‘other grasses’ between the two survey waves and the viewers and non-viewers, evidence of message cut through and behaviour change

Fig. 44 Feeding dairy cattle



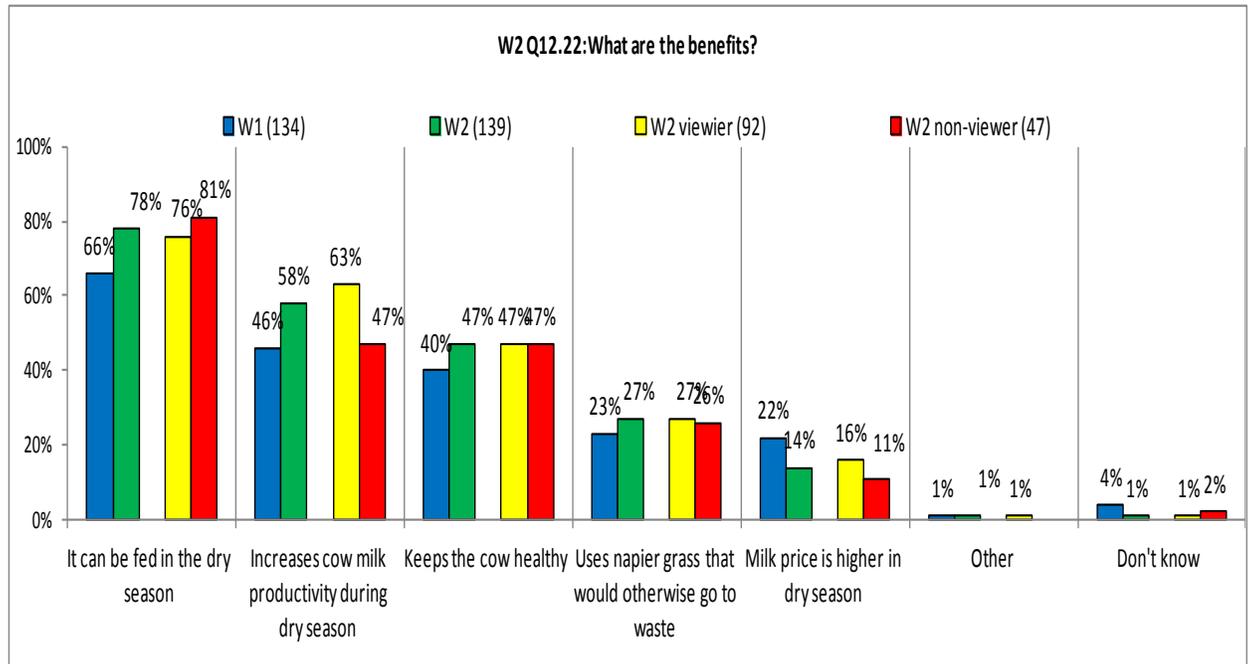
- However, among those farmers who feed their cattle with maize stover, awareness of treating the maize with urea fertiliser was greater among viewers (27% versus 18%). The benefits of doing showed significant increases from wave one to wave two
 - Higher milk yields (up from 52% to 69%)
 - Better for the cow's health (up from 38% to 48%)
 - More palatable (up from 28% to 45%)
- Around 60% of all the groups surveyed said they had tried to increase their napier production recently – with a higher proportion of viewers (69%) than non-viewers (62%) saying that they had done this by planting more land with napier, reflecting the advice in the series
- However, awareness of the tumbukiza method of growing napier remained very low at 15% for views and non-viewers alike. Messages about the advantages of this method of growing napier were not clearly communicated, with viewers than non-viewers able to understand what the benefits were (more focus on this in future programmes)
- *Evidence of knowledge increase in silage production: 40% of viewers, compared with 23% of non-viewers knew what silage was, evidence that the messages about silage got through to viewers as did the messages about the equipment needed to make a bag of silage*

Fig. 45 Items needed to make a bag of silage



- *Some Evidence of knowledge increase in the benefits of silage:* Increases milk productivity during the dry season and improves milk prices in the dry season were the messages that got through to viewers

Fig. 46 Benefits of silage



Knowledge and practice: Zero grazing sheds

- Two-thirds of dairy cattle farmers (across all groups) have zero grazing sheds and just under one half have calf pens in their sheds. The vast majority of cattle farmers say they clean the slurry/ wet manure from under the cows (around 86%)
- In addition, eight in ten say that their feeding and water troughs are divided into sections and into the different sections they put: water, napier/hay/silage, salt and minerals
- There was no difference between the two samples in terms of mentioning the sources of protein for their cows

Knowledge and practice: Mastitis

- While the majority of dairy cattle farmers say they check for mastitis, a higher proportion of viewers (67%) than non-viewers (57%) use the correct method for checking – checking the milk quality

FINANCIAL EDUCATION

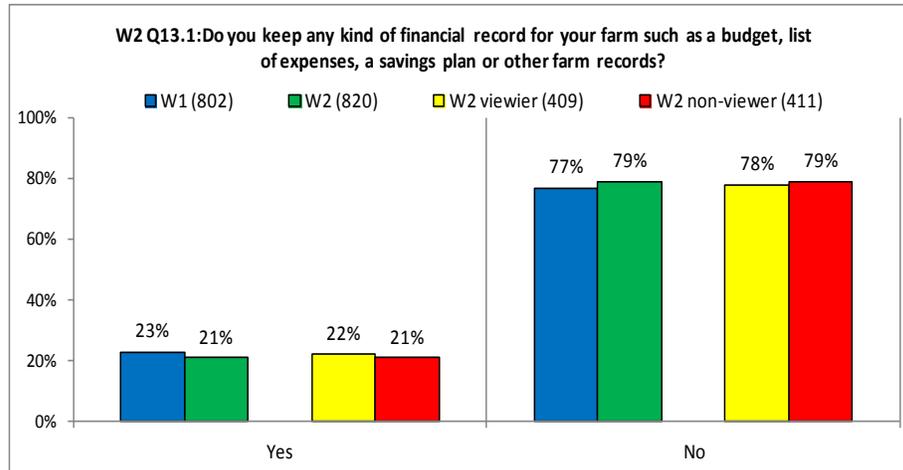
Key Programmatic Themes

With regard to financial education the series focused on running a farm as a business and the skills and tools needed to do this successfully: the benefits of keeping records, having a business plan and the use of banking services, savings and insurance

Knowledge and practice: Record keeping

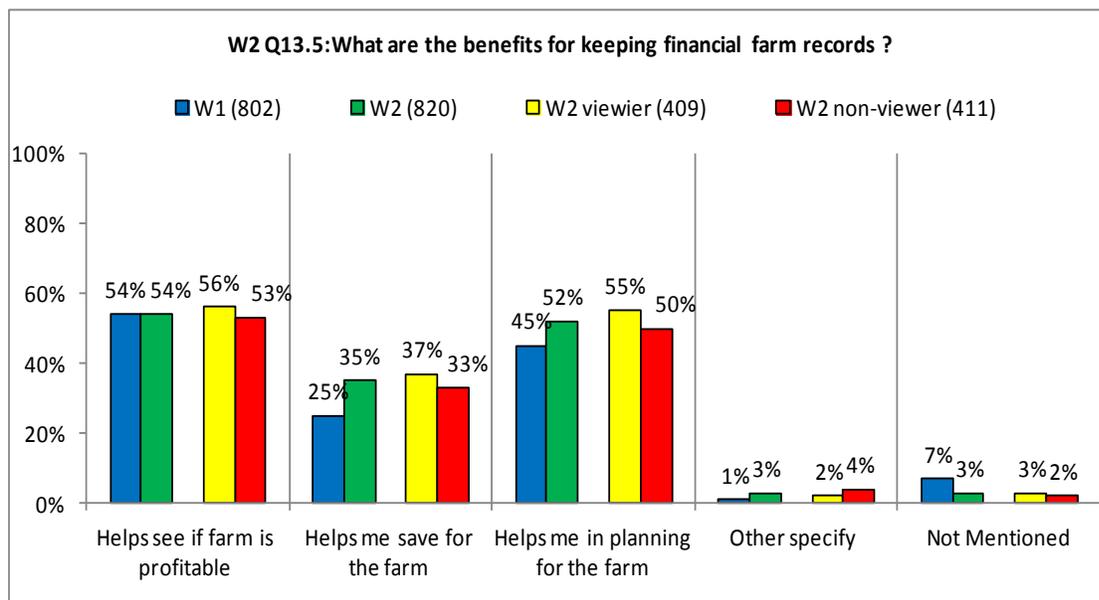
- Less than one quarter of the farmers in the Wave One and Wave Two surveys said they kept financial records, such as a budget, a list of expenses or a savings plan. There was no observable change between the two waves of the survey, or between viewer and non-viewers
- The main reason given for not keeping financial records (by a large majority of respondents – over 70%) was that they saw no need so to do – they kept everything in their heads. Interestingly, relatively few (around 20%) said they did not know how to keep financial records

Fig. 47 Keeping financial records



- During the course of the interview those farmers who said they kept records were asked to show the enumerators an example – only around one half could produce any examples and there was no observable difference between the sample waves or between viewers and non-viewers
- The very small number of farmers who could show an example of their records mainly produced a list of expenses
- Despite the lack of practice in record keeping, the benefits of keeping records were understood by the farmers in the survey – in terms of helping to see if the farm is profitable and helping in the planning process

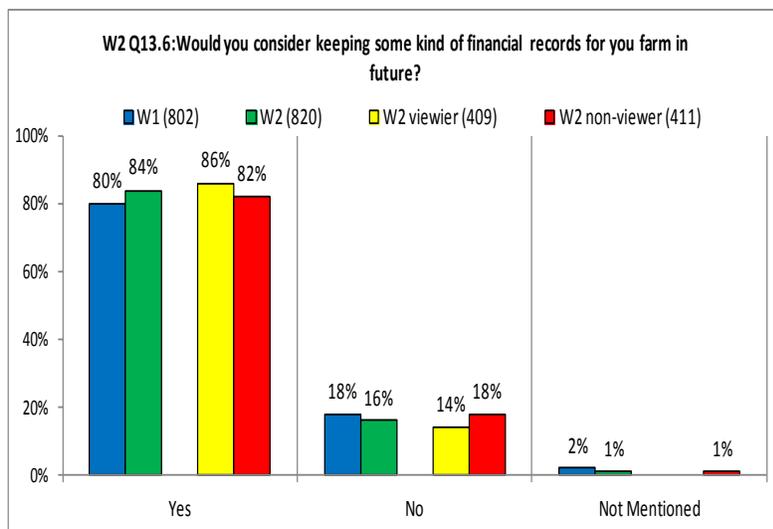
Fig. 48 Benefits of keeping financial records



Intended behaviour: Record keeping

- Encouragingly, over eight in ten farmers said they would consider keeping records in the future and there is evidence that *Shamba Shape Up* played a role in influencing this intended behaviour
- A higher proportion of Wave Two respondents said they intended to keep records in the future, as did viewers (86% versus 82%)

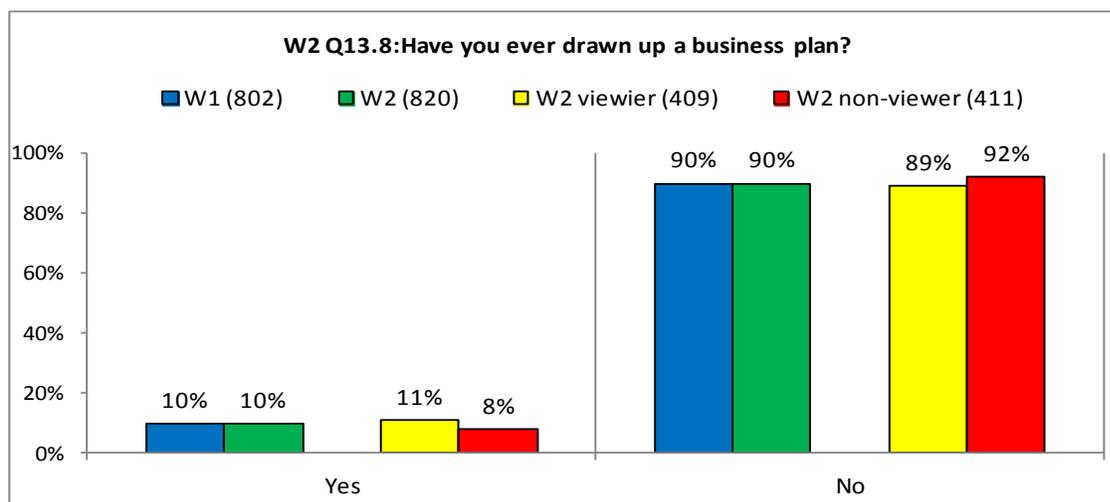
Fig. 49 Future intention to keep financial records



Knowledge and practice: Business Plans

- Business plans are not tools that the vast majority of farmers have worked with or drawn up
- Although, for the few who have they claim that the business plans have helped them to generate business

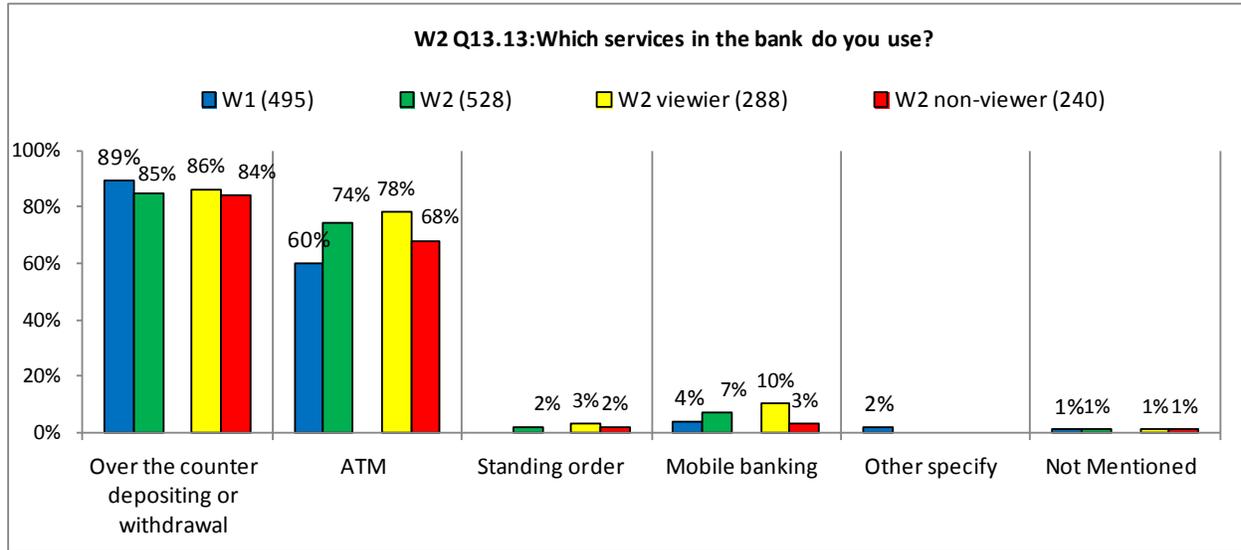
Fig. 50 Having a business plan



Knowledge and practice: Banking Services

- The majority of the farmers interviewed have a bank account. Significantly more viewers of the programme (70%) claim to have a bank account compared with non-viewers (58%)
- Those who do not have a bank account say that they 'don't have enough cash to keep in a bank' or 'it is too expensive' and 'they don't need one'
- However, of those who do not have a bank account (around 35%) the vast majority (three quarters) says they would consider opening a bank account – in terms of intended practice, slightly more viewers say they would consider opening a bank account (81%) compared with non-viewers (76%)
- Two thirds of banked farmers bank with Equity and the services they use are:
 - Over the counter (between eight and nine in ten)
 - ATM (between seven and eight in ten)

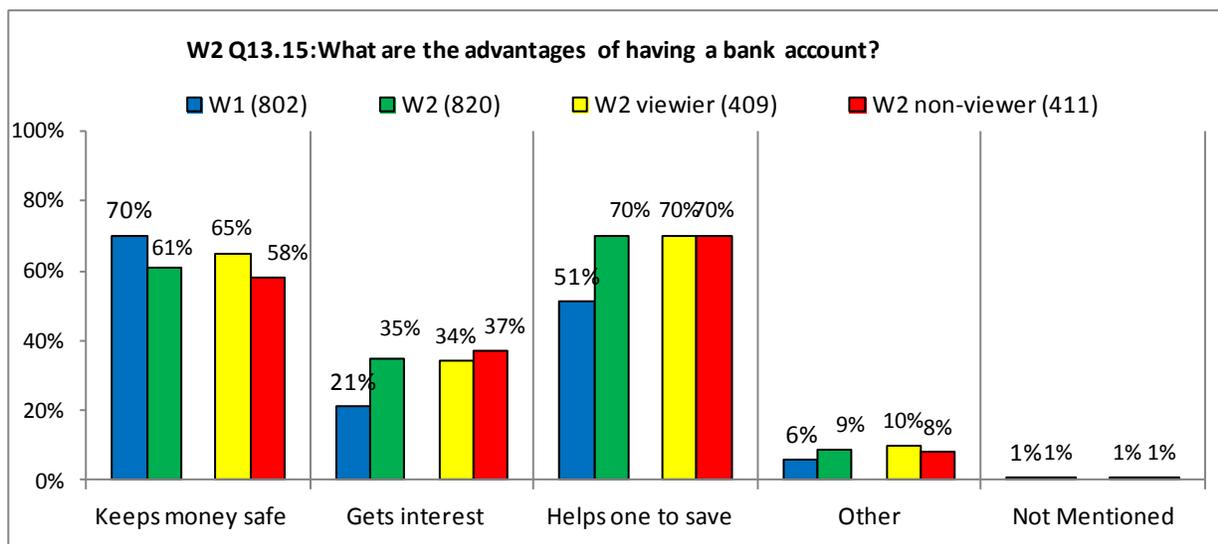
Fig. 51 Use of banks



Attitudes towards Banking Services

- Attitudes towards having a bank account in terms of 'helping one to save' and 'gaining interest' were higher in Wave Two than in Wave One, but there is no real difference in attitudes between viewers and non-viewers

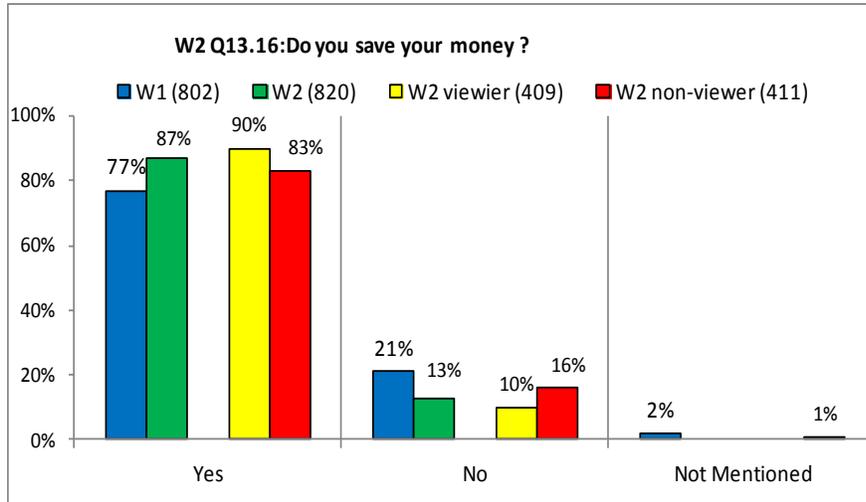
Fig. 52 Advantages of having a bank account



Knowledge and practice: Savings

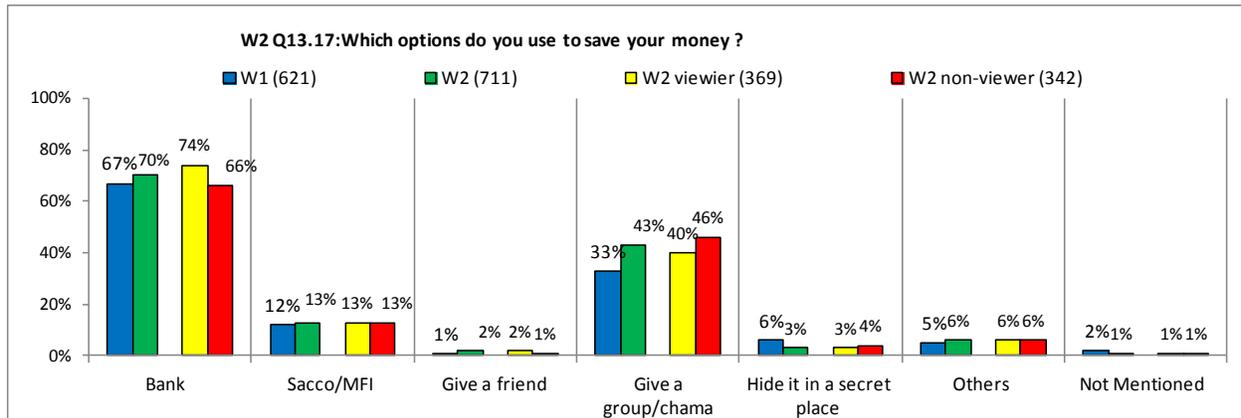
- Farmers save their money, and further, there is evidence to suggest that the series has had some positive impact on encouraging farmers to save
- Two thirds of all the farmers sampled say they invest their savings

Fig 53 Saving money



- Most put their savings into a bank (slightly more viewers than non-viewers save with a bank)
- Chamas are also used as savings vehicles for around four in ten

Fig.54 Savings options



Knowledge and practice: Insurance

- Very few farmers have any type of insurance, but more viewers to the series say that have insurance (22%) than non-viewers (13%)
- Of the relatively few who do have insurance, the overwhelming majority have medical insurance (around 80%)
- Other forms of insurance – life, car, livestock are negligible

Fig. 55 Insurance

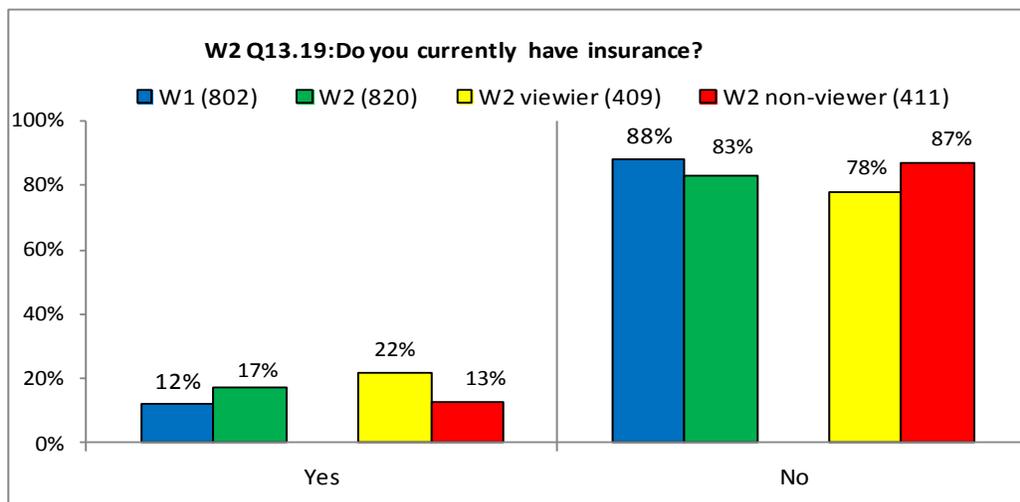
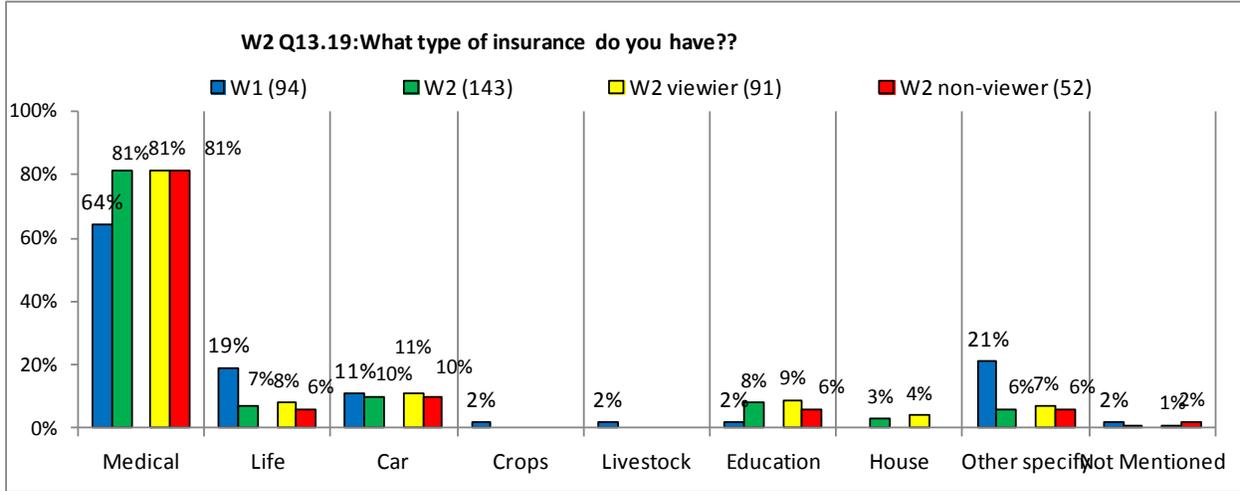


Fig. 56 Types of insurance



CONCLUSIONS

- The pre series and post series surveys suggest that *Shamba Shape Up* has played a significant role in increasing the importance and value of television as a source of information on farming methods and practices to small scale farmers. Further, it has demonstrated that television is as relevant (and at least as powerful) as radio in communicating practical information that resonates with small scale farmers to both increase their knowledge and influence their farming practices
- The series attracted an estimated audience of 3.5 million television viewers – reaching around 20% of Kenyan television viewers. It has the potential to reach and influence a significant number of small scale farmers and its popularity as well as the influence of the messages and information contained within the series suggest that *Shamba Shape Up* has won its place in the schedules
- There was variability in knowledge gain and intended practice across the different programmatic themes. This is not surprising, in that some of the topic areas may have been more relevant than others and certainly the balance of coverage of different topics varied throughout the series. The survey results provide useful information for the production team on the topics and the style of coverage that may require more attention in Series Two
- The financial information covered in the series appeared to be useful and impactful, but this type of information, which can be difficult to convey and communicate, should probably become a regular feature throughout future series. Any tracking of financial behaviour would be advantageous to evaluate the impact of this type of information on the livelihoods of small scale farmers
- Many of the organisations and companies associated with the series saw improved awareness and knowledge of their products and services. It would be interesting to know if uptake, sales and enquiries have increased since April 2012
- In terms of transmission, Citizen Television was a good channel for the series to be aired on as it has good reach and coverage in rural areas and the transmission time was appropriate for the target audience. Although the viewing data are not available at the time of writing it is anticipated that *Shamba Shape Up* contributed to an uplift in ratings delivery during the times it was on.