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Evaluation of the 'Don't Lose the Plot' Television Program

FEED THE FUTURE: BUILDING CAPACITY FOR AFRICAN AGRICULTURAL TRANSFORMATION (AFRICA LEAD II)

KANTAR PUBLIC=

A key part of the *Don't Lose the Plot* television program evaluation was quantitative field data collection performed by Kantar Public (TNS) researchers and interviewers. This data collection process was conducted in Kenya and Tanzania at house-hold level based on the sampling plan. In these photos (left), interviewers are conducting interviews with respondents in Kenya using digital data collection through tablets.

EVALUATION OF THE 'DON'T LOSE THE PLOT' TV PROGRAM

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I. EXECUTIVE SUMMARY

On behalf of USAID East Africa, Feed the Future's Africa Lead program partnered with The Mediae Company, a Kenya-based media education company, to create, broadcast, and launch the pilot season of Africa's first agriculture-focused reality TV program: *Don't Lose the Plot* (DLTP). Targeting youth in Kenya and Tanzania, the show aired on Citizen TV in Kenya and ITV in Tanzania between May and July 2017.

Africa Lead commissioned Kantar Public East Africa to evaluate the impact of DLTP on knowledge, attitudes, and behavior, or intention to change behavior, related to farming and agribusiness practices.[1] Data collection for this evaluation took place between August and December 2017. The program's objectives were to encourage youth to consider farming as a lucrative career choice, provide information on how to start agribusinesses, and share useful agronomic information.

This report includes a set of findings based on Kantar Public's evaluation. In addition, it outlines limitations of the evaluation and provides a set of recommendations based on the conclusions of the evaluation.

Conclusions from this evaluation indicate that *Don't Lose the Plot* succeeded in increasing knowledge related to farming and agribusiness in Kenya and Tanzania, which resulted in improved farming and agribusiness practices among viewers. The findings suggest that improvements in knowledge, attitudes, and behavior associated with DLTP occurred mostly among youth already engaged in farming. In total, the evaluation estimated that 4.1 million youth in Kenya and Tanzania watched the pilot season of DLTP, of which 1.4 million were estimated to be high-intensity viewers.

METHODOLOGY

To measure the impact of DLTP on viewers of the show, Kantar Public conducted an end-line only research activity using mixed methods study design. The end-line only approach was considered the most effective option given the unpredictability of the pilot season's audience. The alternative, a longitudinal approach where data is gathered from audience members over a long period of time, would have required a very extensive and costly baseline sample as it was not known who would end up watching the TV show. The mixed methods approach, a quantitative survey combined with qualitative in-depth interviews, allowed for an effective comparison of viewers and non-viewers upon completion of the show's pilot season. This approach allowed for a high level of confidence in the evaluation's ability to draw conclusions about causal relationships between the TV show and the measured changes among viewers.

The quantitative survey was a cross-sectional household survey,[2] which took place between August and December 2017 and targeted both viewers and non-viewers of DLTP aged 18 to 35 years. A total sample of 3,737 target individuals were interviewed in Kenya, including 406 verified viewers. In Tanzania, 3,383 target individuals were interviewed, including 527 verified viewers.[3] These verified viewers were

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[1] In East Africa, Kantar Public operates contractually as part of TNS RMS East Africa Ltd.
[2] A cross-sectional evaluation analyses data from a target population at a specific point in time.
[3] There were discrepancies between viewership as reported at screening and in the main interview. The 'verified' figures are based on reported viewership in the main interview, where respondents were prompted on viewership by being shown program clips from each episode.

matched against non-viewers using a propensity score matching approach.[4]

Qualitative key informant interviews were carried out among respondents from the quantitative household survey who were verified as high or mid- intensity viewers. The key informant interviewees also consisted of a mix of viewers identified from the survey as adopters or non-adopters of knowledge or practices from the show. These qualitative interviews sought to understand, explore, and verify any impact of DLTP. They also sought to explore the barriers and motivators to changes in behavior among participants, with respect to taking up farming as a business, and the role, if any, of the TV program.

FINDINGS OF EVALUATION

Conclusions from Kantar Public's evaluation indicate that **DLTP succeeded in increasing knowledge related to farming in both Kenya and Tanzania, which resulted in improved farming and agribusiness practices among youth viewers.** The findings suggest that improvements in knowledge and practices associated with DLTP occurred mostly among youth already engaged in farming. While the evidence suggests that DLTP led to more positive attitudes towards farming in Tanzania and that Kenyan viewers were more likely to start new agribusinesses, there is no verifiable indication that the program succeeded in attracting youth who had never farmed before into farming.

Comparing DLTP viewers with non-viewers in each country, the key differences and likely impacts of the TV program are as follows:

- In Kenya and Tanzania, **DLTP led to improved knowledge on farming and agribusiness among high-intensity viewers.** Questions on self-reported knowledge were summarized into a single score ranging from 1 to 5, with 5 representing the highest level of knowledge. High-intensity viewers were found to have a higher average knowledge score compared to non-viewers. In Kenya, high-intensity viewers had an average knowledge score of 3.2, compared with 2.9 among non-viewers. In Tanzania, the equivalent figures were 2.8 and 2.4 respectively. The in-depth interviews indicted that DLTP directly contributed to increased knowledge.

- In Kenya and Tanzania, **DLTP led to improved agribusiness record keeping on levels of production among youth who were already farming.** In both the survey and in-depth interviews, high-intensity viewers' practices indicated

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[4] Propensity score matching is a statistical method used to find a comparison control group (in this case, of non-viewers) with similar characteristics as the test group (viewers of DLTP) in order to account for other variables that may influence the difference between the samples on the outcomes being tested.

improved record keeping as a result of the show. This was specifically observed for dairy, poultry, and crop production record keeping in Kenya, and for crop production record keeping in Tanzania. For example, 57% of high-intensity viewers in Kenya kept crop production records, compared with 40% of non-viewers. In Tanzania, the equivalent figures were 54% and 36% respectively.

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GENDER CONSIDERATION

The analysis considered gender comparisons. Where there were no significant differences, no findings are presented.

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- In Kenya and Tanzania, **DLTP led to differences in farming and agribusiness knowledge between high intensity viewers and non-viewers** including top dressing (application of top dressing fertilizer), soil testing, crop rotation, conducting market research on one's crops, adopting value additions for one's crops, allocating finances as per enterprise need, and other finance-related topics.

- In Kenya and Tanzania, **DLTP led to increased use of irrigation. In Tanzania, DLTP also led to increased use of fertilizer**. In Kenya, 30% of high-intensity viewers used irrigation in the period following the DLTP pilot season, compared with 15% of non-viewers. In Tanzania, 45% of high-intensity viewers used irrigation, compared with 27% of non-viewers, with a similar effect on the use of fertilizer. These findings were also supported by the qualitative interviews.

- In Tanzania, **DLTP high-intensity viewers were associated with more positive attitudes towards farming**. High-intensity viewers in Tanzania indicated that they perceived farming as a profitable activity and a career choice that is not only for poor people and retirees.[5] Eighty percent of the high-intensity viewers strongly agreed that farming is not only for poor people, compared with 70% of non-viewers. When presented with the statement that farming is profitable, the equivalent figures were 72% and 62%. There was some evidence from the qualitative interviews to suggest that DLTP contributed to more positive attitudes.

- In Tanzania, **DLTP had a greater impact on young women seeing farming as "cool" than on young men**. Seventy-seven percent of female high-intensity viewers in Tanzania strongly agreed that farming is "cool", compared with 50% of female non-viewers. There was no such association among young men. In Kenya there was no observable difference in gender.

- In Kenya and Tanzania, when **looking at DLTP viewers who were not engaged in farming at the time of the survey, high-intensity viewership of DLTP was associated with higher level of agreement that farming is "profitable". There was no association, however, with the idea that farming is an "appropriate employment option".** In Kenya, 63% of high-intensity viewers not engaged in farming at the time of the survey agreed that farming is "profitable", compared with 46% of non-viewers not engaged in farming at the time. Thirty-four percent of both groups agreed that farming is an "appropriate employment option". In Tanzania, 75% of high-intensity viewers not engaged in farming at the time of the survey agreed that farming is "profitable", compared with 61% of non-viewers not engaged in farming at the time, and approximately 60% in both groups agreed that farming is an "appropriate employment option".

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[5] Viewers were grouped into three different groups based on viewership intensity. These groups were derived based on achieving an approximately equal number of respondents in each group.

MEASURING IMPACT VS. MEASURING VIEWERSHIP

The focus of this evaluation was to measure the type of impact the show had on viewers' knowledge, attitudes, and behavior. It did not initially set out to measure exact number of viewers or the number of young people impacted by the program.

However, the evaluation methodology provided an opportunity to make estimates of viewers reached, based on results from the sampled household respondents and verified viewer sample sizes. Therefore, based on the sampled respondents, the evaluation suggests estimates of viewership at the national-level.

In Kenya, the data suggests **that 12% of youth in Kenya watched DLTP, representing approximately 1.7 million out of 14.3 million potential Kenyan youth viewers**.

In Tanzania**,** the equivalent figure was slightly higher: **16% of youth or 2.4 million watched the show, out of 15.3 million potential Tanzanian youth viewers**.

Intensity of viewership was also measured. High-intensity viewers were those who watched more than seven episodes; at least half of the episodes in the pilot season. This evaluation estimates that 600,000 of viewers in Kenya and 800,000 of viewers in Tanzania were high-intensity viewers.

In total, it is estimated that the pilot season of *Don't Lose the Plot* was viewed by **4.1 million youth in Kenya and Tanzania, of which 1.4 million youth were high-intensity viewers.** Viewership levels were found to be broadly similar among young women and men.

Market Size Estimation for Youth Exposed to at Least One DLTP Episode

KENYA
14.3M
Youth Population

1.7M
Viewers

600K
High-intensity viewers

TANZANIA
15.3M
Youth Population

2.4M
Viewers

800K
High-intensity viewers
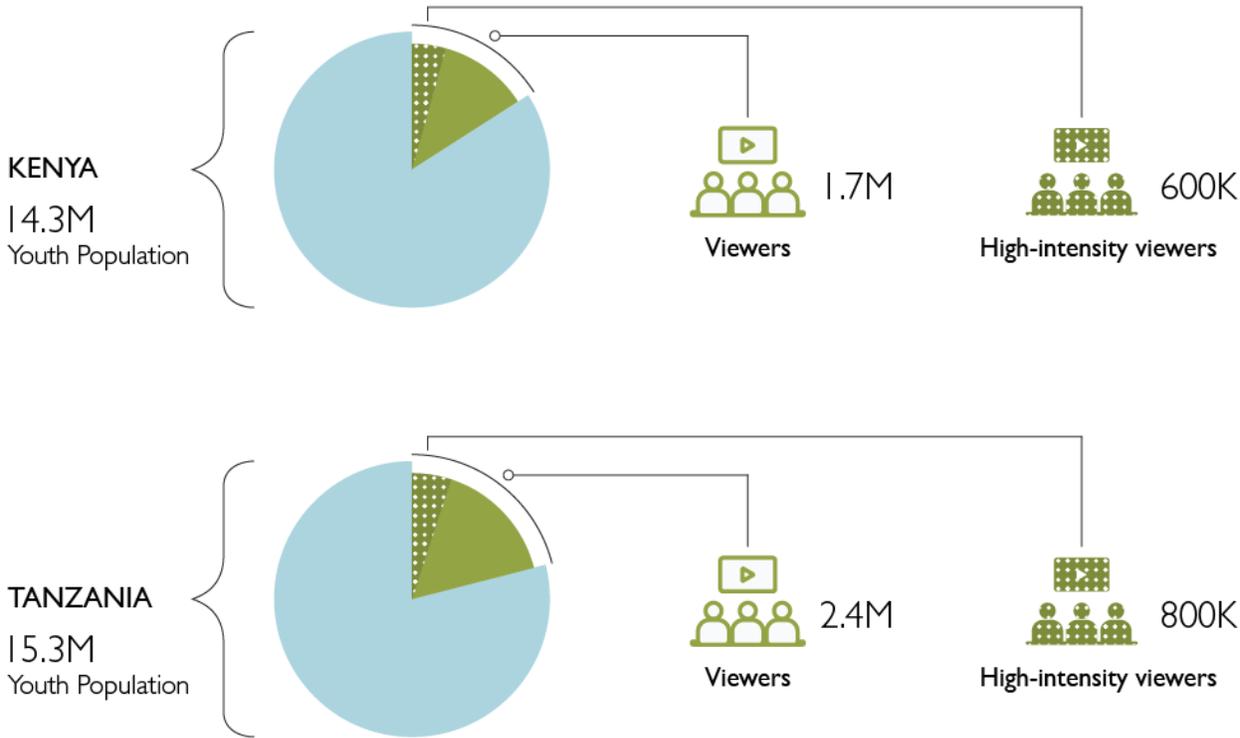
LIMITATIONS OF THE EVALUATION

A notable limitation in this process was identifying verified viewers of DLTP. Many household survey respondents gave inaccurate responses in the initial screening question on DLTP viewership. Some respondents confused DLTP's "sister-show" *Shamba Shape Up* with DLTP. *Shamba Shape Up* is Mediae's well known TV show carried on the same channel and timeslot at other times of the year. The show also covers agricultural practices. The pilot season of DLTP purposefully set out to leverage *Shamba Shape Up's* viewership and timeslot. Questions and evaluation process were developed to appropriately adjust for this and provide an accurate and valid set of responses to determine viewership estimates.

Another notable limitation was related to attribution of impact related to DLTP. It is likely that young people already interested in farming were more inclined to watch DLTP than youth less interested in farming. Self-selection bias was therefore identified as a possible problem when assessing the impact of the program using the quantitative data. Simply comparing viewers and non-viewers would lead to biased estimates. Kantar Public employed propensity score matching to adjust for pre-existing differences between viewers and non-viewers. As a result, the evaluation draws valid conclusions with respect to differences in attitudes, knowledge, and behavior between viewers and non-viewers. Additionally, it should be noted that the evaluation took place one month after the completion of the program and it is possible that long term impact on attitudes, knowledge and behavior was not able to be captured.

RECOMMENDATIONS

GENERAL RECOMMENDATIONS

RECOMMENDATION 1

> **Implementers should increase repetition of key messages across episodes.** Impact was strongest with higher intensity exposure and high-intensity viewers were more likely to have experienced changes in knowledge, attitude, and behavior when compared with low intensity viewers. Themes and technical content repeated in more than one episode contributed to higher knowledge scale, compared to themes that occurred in only one episode.

RECOMMENDATION 2

> **Implementers should build on positive perceptions of DLTP and make greater use of marketing to increase engagement with the brand and program information.** In the pilot season, DLTP started to establish itself as a known entity though it may not clearly have stood out as a separate brand from *Shamba Shape Up (SSU)*. While this was partly due to leveraging SSU's large audience base to launch the first season, DLTP could move to invest in marketing itself as a standalone show and expand its viewer base. To increase exposure to more viewers and increase intensity of viewership, investment in social and digital media could be increased, as well as investment in traditional media outreach and

print advertising. Finally, the name of the program could be adjusted to account for its Swahili language audience in Tanzania.

RECOMMENDATION 3

Development partners should consider further investment in TV programs targeted at behavior change given that the program had a notable impact on knowledge of farming and agribusiness methods and attitudes.

RECOMMENDATIONS FOR AGRICULTURAL PROGRAM IMPLEMENTERS

RECOMMENDATION 4

Implementers should work in conjunction with other programs or institutions to help address land access and financial access, which are key structural barriers for young people to engage in farming. The findings from the in-depth interviewers indicated that access to land and financial support are notable barriers preventing some youth from taking up farming. Initiatives addressing these structural barriers should therefore be considered in conjunction with programs addressing attitudinal changes.

RECOMMENDATION FOR FURTHER RESEARCH AND FUTURE EVALUATIONS

RECOMMENDATION 5

Evaluators should follow respondents over an extended period of time, especially those who indicate they have a high intention to take up farming. This would help ascertain their actual uptake and the barriers with which they are presented. Researchers can then document this as a methodological approach for prior estimation of impact, using reported behavioral intentions to help inform future interventions.

II. INTRODUCTION

2.1 BACKGROUND TO THE DLTP INTERVENTION

On behalf of USAID East Africa, Feed the Future's Africa Lead program collaborated with The Mediae Company, a Kenya-based media education company, to create, broadcast, and launch the pilot season of Africa's first agriculture-focused reality TV program: *Don't Lose the Plot* (DLTP). Targeting youth in Kenya and Tanzania, the show aired on Citizen TV in Kenya and ITV in Tanzania, between May and July 2017.

The goal of the program was to enhance leadership and education in East Africa and encourage youth to consider farming and agribusiness as a profitable career choice. Additionally, USAID, Africa Lead, and Mediae set out to understand the effectiveness of reality television programming in increasing youth participation and contributions to agriculture through delivering informative and entertaining content related to farming and agribusiness.

Mediae is an established media production company that produces educational TV programs. Mediae programs aim to reach large target audiences and generate change in audience knowledge, attitudes, and practices. Mediae produced 13 episodes of DLTP which were broadcast on Citizen TV in Kenya and ITV in Tanzania, with the aim of achieving a broadly national viewership reach. The episodes were aired between May and July 2017. The episodes were also available to watch on YouTube. In addition to the TV program, Mediae provided an online platform and forum called *iShamba*.

In the design of the activity, Africa Lead reflected on the World Bank report forecast for 2014, which stated that Africa's agribusiness could potentially be worth $1 trillion by 2030. When Carlos Lopes, Executive Secretary of the UN Economic Commission for Africa, was asked how to address the challenges of reducing poverty through economic activity he said, "the most important thing is to make the case for agribusiness. That's where we are going to create modern jobs. The young people don't want to be farmers anymore, but they will be interested in modern jobs related to agriculture."[6]

Malabo Declaration Commitment Four focuses on halving poverty by the year 2025. Key targets under this include creating job opportunities for at least 30% of the youth in agricultural value chains and supporting and facilitating participation for women and youth in gainful and attractive agribusiness opportunities.[7] This requires changes in youth's attitudes towards farming, equipping youth with the necessary knowledge and skills, and providing opportunities for meaningful youth engagement along various agricultural value chains. The DLTP TV program was viewed as contributing towards the realization of this target through awareness creation on agriculture as a viable source of employment and on specific skills related to farming and agribusiness.

The specific objectives of DLTP included the following:

- Demonstrate to youth that farming is a viable business venture.
- Provide youth and parents with better ideas on how to improve land utilization and increase productivity without compromising land inheritance taboos.

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[6] Kingsley, I. (2014, August). *Africa's economy set for dramatic changes*. Retrieved from Africa Renewal: www.un.org
[7] African Union (June 26-27, 2014). *Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods; Malabo, Equatorial Guin1ea*

- Provide potential youth farmers or agribusiness entrepreneurs with basic knowledge in farming or agribusiness, including business planning, accessing finance, inputs, and managing production to access markets profitably.
- Portray farmers from different countries, while sharing multicultural farming experiences and information.

2.2 PURPOSE OF THE EVALUATION

Africa Lead II commissioned Kantar Public East Africa to evaluate the impact of DLTP on knowledge, attitudes, and behaviors related to farming and agribusiness. The target population for the assessment was youth between the ages of 18-35 years old in Kenya and Tanzania. The pilot season aired from May and July 2017 and the fieldwork for the evaluation took place between August and December 2017.

2.3 EVALUATION QUESTIONS

The evaluation set out to assess the following evaluation questions:

- What, if any, change in thinking or perception has viewership of DLTP led to?
- What, if any, change in intention, behavior, or action has viewership of DLTP led to?
- What core areas of learning – in terms of new skills or new ideas – can be directly attributed to viewing DLTP?
- What was the level of viewership of DLTP?

III. METHODOLOGY

3.1 EVALUATION DESIGN

The evaluation design was based on a mixed-methods approach comprised of a quantitative cross-sectional household survey and exploratory qualitative interviews. The evaluation targeted viewers and non-viewers and sought to understand DLTP's impact, if any, on changes in attitudes, knowledge, and behavior among its viewers. [8]

The cross-sectional survey targeted viewers of DLTP as well as non-viewers. Statistical methods (propensity score matching[9]) were used to create a control group of non-viewers that shared similar characteristics to viewers with respect to age, gender, education level, ownership of a TV in the household, and access to land. In Kenya, the propensity score matching approach also took account of viewership of *Shamba Shape Up*, which is a similar educational TV program on farming.

This approach, in combination with qualitative interviews, was chosen as it provided the most cost-effective and feasible option. Prior to the airing of DLTP, it was not known who would end up watching the program or what the level of viewership would be. Any baseline survey would therefore have

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[8] A cross-sectional evaluation analyzes data from a target population at a specific point in time.

[9] Propensity score matching is a statistical method used to find a comparison control group (in this case, of non-viewers) with similar characteristics as the test group (viewers of DLTP) to account for other variables that may influence the difference between the samples on the outcomes being tested. Specifically, a statistical model (binary regression model) is built that estimates a propensity score for each respondent. Non-viewers are matched to viewers based on this score.

needed to sample an extremely large number of respondents to ensure a sufficiently large sample of viewers at end-line. While a longitudinal evaluation design using difference-in-difference analysis would have allowed more rigorous conclusions to be drawn with respect to causality and attribution, the triangulation of the findings using the current approach still allows conclusions to be drawn with respect to attribution, though with a lower level of confidence.

In terms of sampling, survey respondents were randomly selected from within households which had been selected based on a random probabilistic design using small administrative areas as the sampling units in the two respective countries.[10] Selected respondents from the survey were then followed-up with for qualitative interviews. The methodological details of the quantitative and qualitative components are provided below.

3.2 QUANTITATIVE SURVEY OF VIEWERSHIP

3.2.1 POPULATION SURVEY

This evaluation targeted youth between the ages of 18 to 35 years old in Kenya and Tanzania.

3.2.2 SAMPLE SIZE

Kantar Public estimated the required sample size to be approximately 1,370 DLTP viewers in each of the two countries to allow for a high level of statistical precision and power. The size of the required (matched) control group was the same as that for viewers and the two arms would be balanced.

To ensure a sufficiently large sample of DLTP viewers were included in the sample size, Kantar Public estimated that a much larger sample of about 10,000 respondents in each country needed to be contacted. This figure was based on available viewership data from Ipsos between September and December 2017 which consisted of youth between the ages of 18 to 34[11] who watched Citizen TV in Kenya and ITV in Tanzania during the relevant time slots in which DLTP was intended to be aired.[12]

During the fieldwork process, a total of 10,969 households in Kenya and 10,294 households in Tanzania were contacted and screened for eligibility. The percentage of completed interviews with eligible respondents was 34% and 33% in Kenya and Tanzania respectively, yielding 3,737 and 3,383 completed interviews in Kenya and Tanzania. These numbers included both viewers and non-viewers. The detailed outcomes are presented in the table below. The level of refusals was in line with expectations for this kind of survey among young people.

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[10] The specific sampling design was a clustered probability survey, where clusters (small administrative areas) were selected with a probability proportional to size and the same target number of interviews were conducted in each cluster. This means that households had an approximately equal probability of selection.

[11] Data for ages 18 to 35 was not available.

[12] This data was purchased from Ipsos.

Table 1: Summary of the Results of Household Contacts in Kenya and Tanzania[13]

Results of Household Contacts	Country			
	Kenya		Tanzania	
	(n)	%	(n)	%
Complete	3737	34%	3383	33%
Postponed	7	0%	1	0%
Refused	3315	30%	4377	42%
Found Door Closed	201	2%	1	0%
Found children only	35	0%	12	0%
Respondent out of quota*	2659	24%	2520	25%
Household permanently closed	536	5%	0	0%
Language barrier	220	2%	0	0%
Household member not available	259	2%	0	0%
TOTAL	**10,969**	**100%**	**10,294**	**100%**

* Out of quota means respondents were not eligible based on viewership status, given target numbers of viewers and non-viewers (about 30% and 70% of the sample respectively).

3.2.3. CLAIMED VS. VERIFIED VIEWERSHIP

Respondents were screened for eligibility based on pre-set quotas for age and DLTP viewership status. At the screening stage, respondents were categorized either as viewers of DLTP (intervention group) or as non-viewers (comparison group). Based on reported viewership of DLTP at the screening stage, in which DLTP was presented in a list of other TV programs to reduce bias, a sample of viewers was identified that included 1,545 youth in Kenya and 1,483 youth in Tanzania (Table 3.2), equivalent to 42% and 44% of 18-35-year olds in Kenya and Tanzania respectively. This was found to be an over-estimation of actual viewership. The next section examines claimed vs. verified viewership in detail.

Table 2: Sample Size Achievement for Claimed Viewers and Non-Viewers of DLTP

		Country			
		Kenya		Tanzania	
		(n)	%	(n)	%
Claimed viewership at screening	Viewer	1545	42%	1483	44%
	Non-Viewer	2116	58%	1907	56%

During the main interview, interviewers probed respondents on their viewership of DLTP. This included showing the respondents short video clips of each DLTP episode to 'verify' whether respondents had actually watched the program. Upon analysis of the data, it was clear that participants' initial responses were often based on falsely remembering having watched DLTP, or to a lesser extent, forgetting having watched the program when in fact they had done so. Social desirability bias or curiosity about the evaluation may also have led respondents to provide inaccurate responses.

In order to ensure that the analysis correctly detects differences between viewers and non-viewers, only 'verified' viewers are included in the treatment group in this report. As a result, the sample size of actual DTLP viewers is notably smaller than anticipated (406 viewers in Kenya and 527 viewers in Tanzania).

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13 Outcome codes for non-contacts were not consistently recorded in Kenya and Tanzania. In Tanzania 'Refused' was often used instead of other non-contacts, such as language barrier or unavailability. This contrasts to Kenya.

Consequently, the level of statistical precision is also lower than anticipated. The total sample used for analysis is therefore 812 in Kenya (406 viewers and 406 non-viewers), and 1054 in Tanzania (527 viewers and 527 non-viewers). Similarly, the estimated viewership of DLTP and audience size included in this report is based on verified viewership.

The base number of valid respondents is shown for all tables and charts presented in this report. These numbers vary with respect to each question due to eligibility and the number of missing responses to each question. While the level of missing responses is low, it slightly affects the total number of valid responses.

3.3 QUALITATIVE ANALYSIS: ATTITUDES, KNOWLEDGE, AND BEHAVIOR

The evaluation used key informant interviews (KII) to gather in-depth data.[14] Sixteen successful KIIs were achieved in Kenya and 14 in Tanzania.

Kantar Public selected interview respondents from the household survey based on their questionnaire responses and demographic characteristics. A key focus was gaining information on linkages between DLTP and attitude change. Hence, only high- and mid-intensity viewers were interviewed. The qualitative participants were further split into adopters and non-adopters.

Adopters were defined as:

i.   Those who were exposed and experienced a positive attitude change towards farming; and
ii.   Those who adopted or intended to adopt farming practices:
   a) Intended to practice farming.
   b) Adopted farming in any way over the last three months.
   c) Changed farming practices, if already farming at the time of the program.

Non-adopters were defined as those who were exposed to DLTP but did not demonstrate adoption or attitude change.

Table 3: Final Sample Achieved for Qualitative Interviewing

	Kenya	Tanzania
Total interviews done	19	21
Successful interviews	16	14
Adopters	7	7
Non-adopters	9	7

Interviewers used a discussion guide and a hypothesis testing approach. All KIIs were audio-recorded with the consent of the respondents.

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[14] Key informant interviews are one-on-one interviews with respondents using a discussion guide that allows issues to be explored in depth in an unstructured manner.

3.4 ANALYTICAL APPROACH

3.4.1 KEY OUTCOME INDICATORS

Kantar Public developed key outcome indicators to measure different dimensions of DLTP impact. The questionnaire included questions covering the dimensions outlined below.

Knowledge: The survey included questions asking respondents whether they had gained new knowledge or learned ideas related to farming or agribusiness in the range of areas explored throughout the series. Self-reported knowledge was summarized into an overall score based on a five-point Likert scale.

Attitudes: The survey included questions about current attitudes towards farming and agribusiness. It also asked whether the respondent would consider taking up farming (if they were not involved at the time).

Behavior Change: The survey included questions asking farmers or agribusiness operators whether they or their parents had implemented new practices during the past farming season, or whether they intended to do so in the upcoming season. If so, interviewees were asked what prompted them to do so.

DLTP viewers were grouped into three different groups by viewership intensity. These groups were derived with the aim of achieving an approximately equal number of respondents in each group.

3.4.2 ESTIMATING THE IMPACT OF DLTP

Simply comparing viewers and (unmatched) non-viewers would lead to biased estimates. Propensity score matching attempts to adjust for pre-existing differences between viewers and non-viewers by creating a comparable control group using statistical matching techniques. The variables included in the statistical model used for matching were gender, age, education level, access to farm land, and whether the household had a TV. In Kenya, viewership of *Shamba Shape Up* was also included in the model.

It should be noted that some characteristics relevant to matching, such as interest in farming, were considered outcomes that the program intended to change. Such variables were therefore not included in the statistical model used for matching. Instead, access to farm land was included as a proxy to indicate current farming engagement. This point is discussed further below, in the section on evaluation limitations.

Propensity score matching ensures that the treatment and control samples are 'balanced' or adequately similar on key characteristics, allowing the groups to be compared without further adjustment. The results of the propensity score matching for this analysis indicated that the treatment and matched comparison groups were indeed balanced, and the groups were similar with respect to characteristics such as education level, gender distribution, and access to farm land. It was therefore possible to estimate the impact of DLTP using hypothesis testing, comparing the mean difference between viewers and non-viewers.

The Chi-square test was used to test for statistical differences between viewers and non-viewers on the different outcome indicators (e.g. agreement/disagreement with various statements).[15] Differences that

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[15] For binary variables coded as 0 or 1, e.g. agree is coded as 1 and disagree and neutral is coded as 0, we used Anova to test for statistically significant differences. The mean estimate of the percentage who agree is thus treated as a continuous variable.

were statistically significant at the 5%-level ($p<0.05$) are included in the report. Regression analysis was also used to test the effect of several variables simultaneously, including adjusting for different propensity scores across the different viewership intensity groups. However, the regression analysis did not add much to the overall analysis and is therefore not presented here.

Quantitative findings presented are reported in terms of 'associations', in line with the specific analysis. These findings are substantiated with qualitative analysis and overall conclusions are based on the triangulated results. Hence, where the quantitative results were substantiated by qualitative findings, the overall conclusions may refer to causality.

3.5 EVALUATION LIMITATIONS

3.5.1 DETERMINING DLTP VIEWERSHIP

A key limitation was identifying viewers of DLTP. As discussed above, many respondents gave inaccurate responses in the initial screening question on DLTP viewership. Many respondents also confused DLTP with *Shamba Shape Up*, since both media programs cover agricultural practices. This limitation was mitigated by only including respondents in the analysis who either reported watching DLTP on the main viewership question (using video clips as prompts) or reported not watching DLTP or any other farming program. Excluding some respondents due to these criteria meant the valid sample was smaller than expected and, in turn, the level of precision of the findings is also lower than expected. Despite this, the accuracy and validity of the results can still be considered robust.

3.5.2 SELF-SELECTION BIAS

It is likely that young people already interested or engaged in farming were more inclined to watch DLTP than youth less interested in farming. Self-selection bias could therefore be a problem when comparing viewers with non-viewers in order to assess the impact of the program. Ideally the matching of viewers with non-viewers would have adjusted for prior interest in farming. However, since both interest and engagement in farming were considered outcome variables for this study, these were not included in the model used for the propensity score matching. Instead, the model included access to farm land as a proxy of farming engagement. While not a perfect indicator, it provided a reasonable proxy. It was expected that this variable would be less susceptible to shorter-term changes as a result of DLTP.

3.5.3 ATTRIBUTION OF IMPACT TO DLTP

This evaluation relied on an end-line only approach. As mentioned above, this approach was chosen for its feasibility and cost-effectiveness. Prior to the airing of DLTP, it was not known who would end up watching the program or what levels of viewership would be. Any baseline survey would therefore have needed to sample an extremely large number of respondents to ensure a sufficiently large sample of viewers at end-line.

Due to the end-line only approach, it was not possible to track changes over time, and hence the direct impact of DLTP on knowledge, attitudes, and practices. Consequently, in the chosen approach, where viewers were compared with a matched group of non-viewers at a single point in time, it was only possible to establish 'associations' between program viewership and given outcomes. The quantitative

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We used this approach since in this context it gives equivalent results as Chi square test and can be set up more efficiently in SPSS. Hence the F statistic, rather than the Pearson Chi-square statistic, is presented in the appendix tables.

data alone did not allow attribution of causality to the program. In order to attribute differences to the program, the quantitative findings were triangulated with the qualitative analysis. The overall conclusions are based on both the quantitative and qualitative findings and talk about causality when the direct impact of DLTP is evidenced in the qualitative component.

IV. FINDINGS

4.1 WHAT TYPES OF CHANGE IN THINKING OR PERCEPTIONS HAS VIEWING DLTP LED TO?

Young people's perceptions and attitudes towards farming were assessed using the following set of statements: "farming is profitable"; "farming is an appropriate employment alternative"; "farming is only meant for old people or retirees"; "farming is cool"; "farming is only for the poor"; and "farming is a profitable venture". Respondents were asked whether they agree or disagree with each statement using a five-point scale.

Overall, respondents tended to display positive attitudes towards farming in their survey responses. Almost all respondents among both viewers and non-viewers generally agreed or strongly agreed with the statements. In order to allow for more differentiation between viewers and non-viewers, the analysis was therefore limited to comparing respondents who 'strongly' agreed with the statements.

The evidence suggests that DLTP to some extent changed young people's attitudes towards farming in Tanzania. In Tanzania, DLTP viewership was associated with more positive attitudes towards farming, as 80% of high-intensity viewers strongly agreed that farming is not only for poor people, compared with 70% of non-viewers.[16] The impact of DLTP was also indicated in the in-depth interviews, as shown further below.

Graph 1: Non-Viewers vs. High-Intensity Viewer Differences towards Farming, Tanzania

% Who Agree with the Various Statements Towards Farming, Tanzania

Legend: DLTP Viewship Intensity
- Farming is profitable
- Farming is cool
- Farming is not only for old people
- Farming is not only for retirees
- Farming is a viable employment alternative
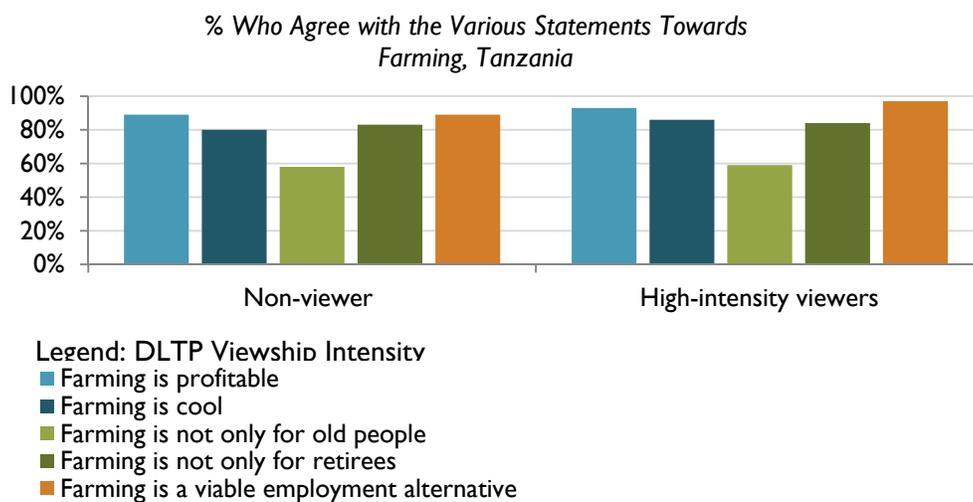
*Base: 406 non-viewers, 146 high-intensity viewers (Appendix Table 1)*

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[16] It is not clear why the level of agreement is lowest at 3-5 episodes, and would require further research.

In Tanzania, there was a statistically significant association between viewership and agreeing that farming is profitable, that it is cool, and that it is not only for retirees. Again, the effect of the program was only observed among the high-intensity viewership group. In terms of agreement that farming is profitable, 72% of high intensity viewers strongly agreed, compared with 62% of non-viewers. Sixty-four percent of high-intensity viewers strongly agreed that farming is not only meant for retirees, compared with 56% of non-viewers. Similarly, 73% of high-intensity viewers strongly agreed that farming is cool, compared with 56% of non-viewers.

DLTP appears to have had a greater impact in Tanzania on young women than men with respect to whether farming is cool. While 63% of female viewers strongly agreed that farming is cool compared with 50% of female non-viewers, there was no such difference among young men.

In Kenya, there was no observed association between DLTP viewership and attitudes towards farming. For example, the percentage of respondents who strongly agreed that farming is an appropriate employment alternative was 38% among viewers and 37% among non-viewers. With respect to strongly agreeing that farming is profitable, this figure was 56% among high-intensity viewers and 50% among non-viewers, but this difference is not statistically significant.

Graph 2: Non-Viewers vs. High-Intensity Viewer Differences Towards Farming, Kenya

Percentage Who Agree with the Various Statements Towards Farming, Kenya
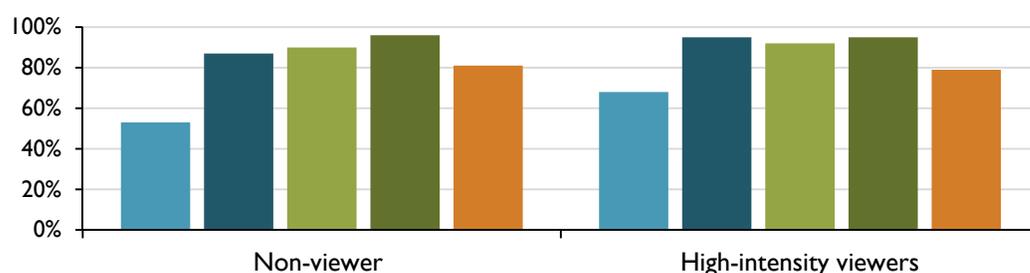
Legend: DLTP Viewship Intensity

- Farming is profitable
- Farming is cool
- Farming is not only for old people
- Farming is not only for retirees
- Farming is a viable employment alternative

Base: 527 non-viewers and 120 high-intensity viewers

Limiting the analysis to only youth who were not engaged in farming, in Tanzania there was a statistically significant association between viewership and agreeing that farming is cool (80% of high-intensity viewers strongly agreed, versus 55% of non-viewers) and that farming is profitable (75% strongly agreed among high-intensity viewers, versus 61% among non-viewers[17]). However, there was no statistically

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[17] This difference is statistically significant at the 10% level (p=0.07)

significant difference between viewers and non-viewers with respect to agreeing that farming is an appropriate employment option (60% among high-intensity viewers versus 62% among non-viewers).

Graph 3: Differences Towards Farming Between Non-Viewers Not Engaged in Farming vs. High-Intensity Viewers Not Engaged in Farming, Tanzania

Non-farmers, Tanzania
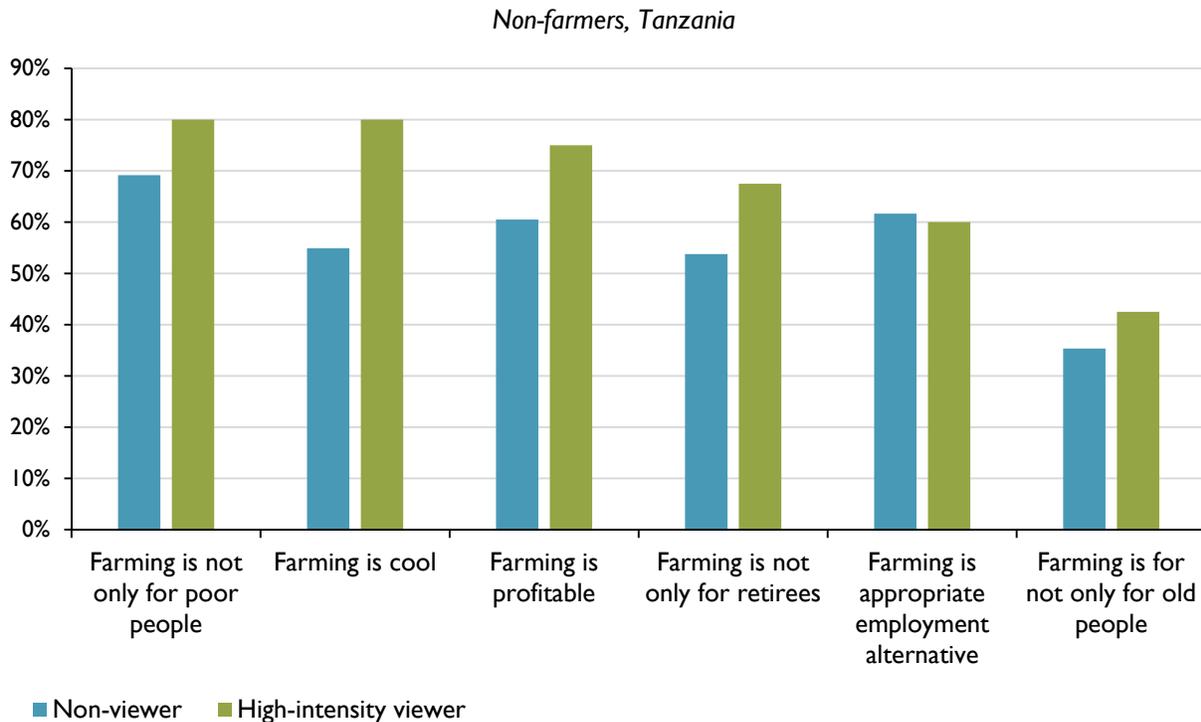
Base: 266 non-viewers and 40 high-intensity viewers, not engaged in farming

Similar findings were seen in Kenya as in Tanzania. In Kenya there was also an association between DLTP viewership and agreeing that farming is profitable and that it is cool, but such attitudes did not translate into agreeing that farming is an appropriate employment alternative. Sixty-three percent of high-intensity viewers strongly agreed that farming is profitable, versus 46% non-viewers, meanwhile the equivalent figures were 51% versus 38% with respect to agreeing that farming is cool. Within both groups, 34% strongly agreed that farming is an appropriate employment alternative.

Graph 4: Differences towards Farming between Non-Viewers Not Engaged in Farming vs. High-Intensity Viewer Not Engaged in farming, Kenya

Non- Farmers, Kenya

■ Non-viewer   ■ High-intensity viewer
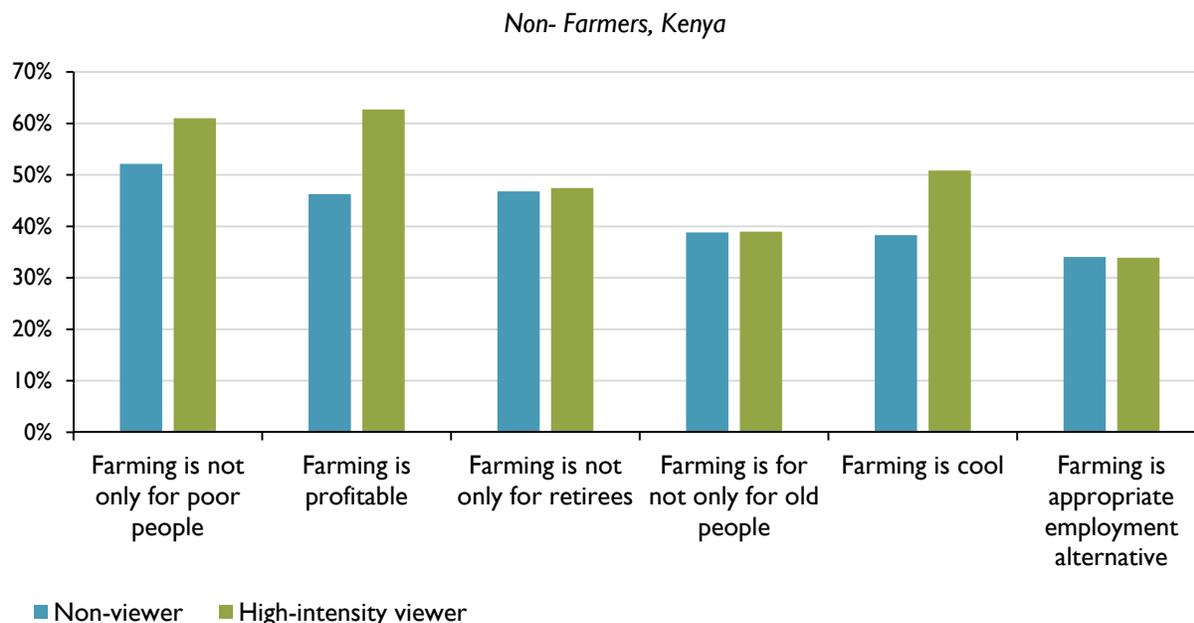
Base: 188 non-viewers and 59 high-intensity viewers, not engaged in farming

The qualitative interviews recorded some examples of how the program has changed attitudes toward farming:

"After watching, I saw that youth can also farm. **I used to think that farming is for older people, but I realized that even youth can also do it**, and it can turn out just as well."

- Zipporah, Kitale, KN, Adopter of farming activities

"I think the issues [in the program] are good and relevant to the current situation, whereby it's hard to get employment. Many people claim there are no opportunities, but the **program sheds light on the possibility of getting income from farming**. […] I learned that youth can engage in activities we thought were not meant for our age. I saw a **recent graduate going straight into farming, so I noted that there are many other opportunities apart from the office jobs** everyone is after."

-   *Victor, Dar, TZ, Non-adopter of farming activities.*

"No, it didn't change my idea, but it **added more ideas for me**. For example, I was thinking I can be only a farmer, but now I changed my view so that I can do livestock farming."

- *Victor, Dar, TZ, Adopter of farming activities*

"It actually **made me think that farming can be a great source of employment** if you work hard. It can give you good products and profits. Considering that those are young people who have decided to venture into it and considering what they did there, **it is not actually for the low class**."

- *James, Nairobi, KN, Non-adopter of farming activities*

Finally, the findings indicated a relationship between the level of interest in farming and viewership in Kenya: 32% of high-intensity viewers strongly agreed that they are interested in farming compared to 18% of non-viewers.

IMPACT ON THINKING OR PERCEPTIONS – KEY POINTS

- High-intensity DLTP viewership was associated with more positive attitudes towards farming in Tanzania, especially among young women.
- Among youth in both Kenya and Tanzania *not* engaged in farming, high intensity viewership of DLTP was associated with more positive attitudes towards the profitability of farming. However, such perceptions did not appear to translate into more positive attitudes towards farming as an appropriate employment alternative.

4.2 WHAT TYPE OF CHANGE IN INTENTION, BEHAVIOR, OR ACTION HAS VIEWING OF DLTP LED TO?

To assess the impact of DLTP on young people's current or intended behavior and practices, those who were not already farming as a main source of income were asked about their intention to take up farming in the next three years. In addition, respondents who were already farming were asked about their intention to continue with farming over the next three years.

Respondents who were already farming were also asked about whether they engaged in specific practices during and after the season of the program, including record keeping, use of fertilizers and other chemicals, and irrigation practices.

4.2.1 INTENTION TO TAKE UP FARMING OR CONTINUE WITH FARMING

There is evidence to suggest that viewership of DLTP led to a greater intention to take up farming as business among young people in Kenya. Approximately 83% of viewers indicated that they would consider taking up farming in the next three years as a business compared to 73% of non-viewers. In Tanzania, DLTP viewership had no significant effect on the proportion of youth who would consider going into farming as their main business. It should be noted that answers to this question, which asked about medium term plans, may not accurately reflect consequent future actions. It is also possible that the future-oriented, and hence fairly open, question was subject to a higher degree of social desirability bias. As mentioned above, attitudes towards the appropriateness of farming as an employment alternative were not associated with the viewership of the TV program.

The qualitative responses below support these findings. While DLTP has led to a change in young people's willingness to take up farming, including as main source of income, this change was primarily seen among youth already engaged in farming.

> "Before I watched it, I never used to farm that much. I used to try but I would not get a good harvest. Then I watched and did the same thing that I was doing, planted vegetables, and this time I got more profit. So, it had **educated me a lot about farming. I have started making money very fast**."
>
> - *Leonard, Kakamega, KN, Adopter of farming activities*

> "Right now, I am farming for food, but **five years from now, I want to be doing farming as a business**."
>
> - *Ondieki, Morogoro, TZ, Adopter of farming activities*

Graph 5: Percentage of Respondents Not Currently in Farming who Would Consider Taking It Up as a Business in the Next Three Years, Kenya
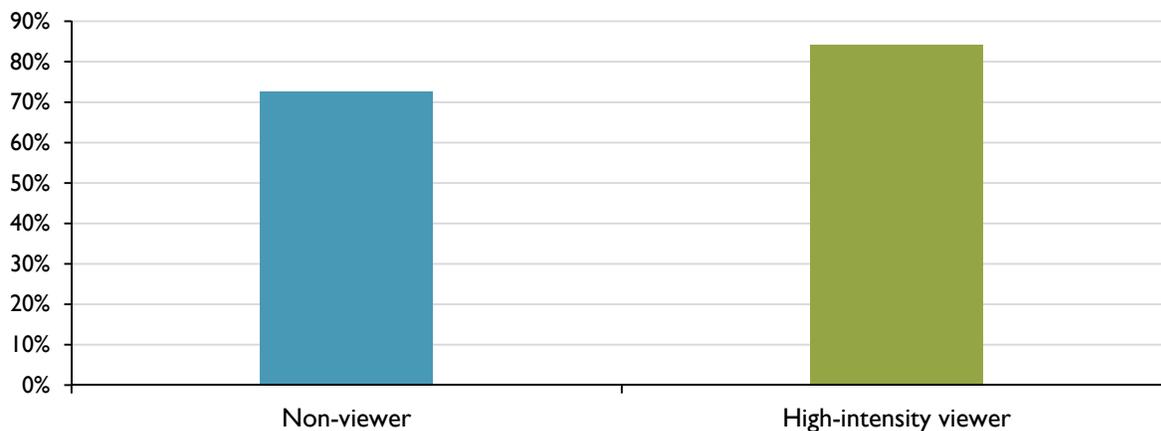
Base: 132 non-viewers and 38 high-intensity viewer, not currently engaged in farming

4.2.2 CHANGES IN FARMING PRACTICES

As mentioned above, respondents who were currently engaged in farming were asked about particular practices, such as record keeping, use of chemicals, and irrigation practices. Following the airing of the program, respondents were asked about the adoption of practices.

IMPROVED RECORD KEEPING

The evaluation results indicate that DLTP was successful in improving the level of production records kept. This finding was observed for dairy, poultry, and crop production records in Kenya, and crop production records in Tanzania. In Tanzania, keeping a production record was associated with viewership of DLTP.

The effect of DLTP was notable primarily among high-intensity viewers in both countries. For example, 57% of high-intensity viewers in Kenya kept crop production records, compared with 40% of non-viewers. The equivalent figures for crop production records in Tanzania were 54% of high-intensity viewers, versus 36% of non-viewers.

The qualitative findings strongly support the conclusion that DLTP succeeded in improving farming practices in both Kenya and Tanzania.

> "[…] at every stage you keep records, so I could see how those records would help at the end when you are determining what you used and what you get. […] I did see it was **necessary to plan before you start farming and to organize the budget**. I used to think so long as you had the land, you get what you want to plant and start planting."
>
> - *Brian, Kisumu, KN, Non-adopter of farming activities*

Graph 6: Percentage Who Keep Production Records: Respondents Engaged in Farming

Kenya

■ Non-viewer ■ High-intensity viewer
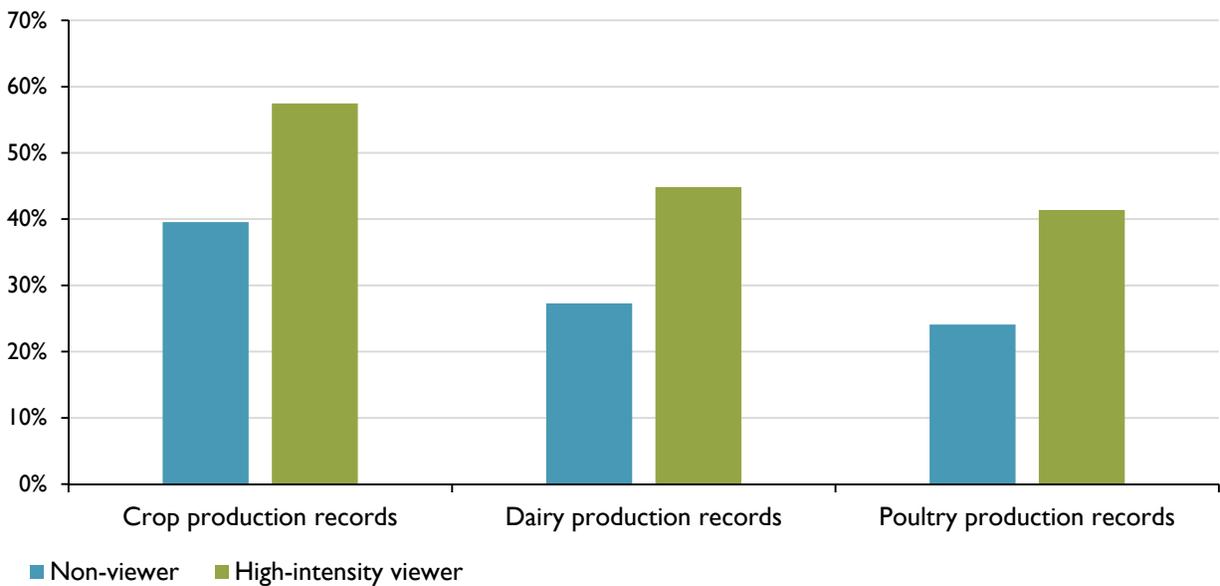
Base: Kenya: Non-viewer – 220, High intensity viewer – 87;

Tanzania

■ Non-viewer ■ High-intensity viewer
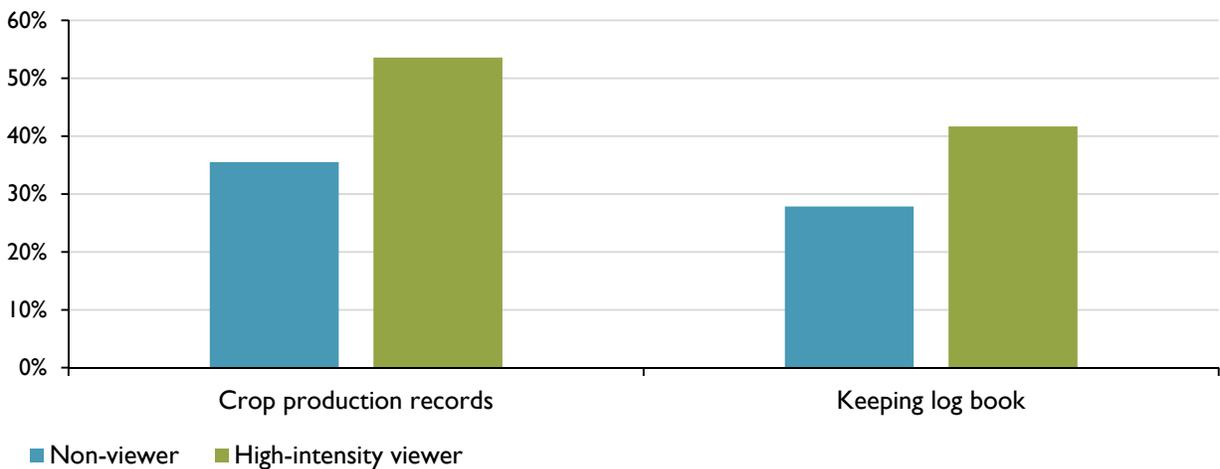
Base: Tanzania – Non-viewer – 273, High intensity viewer – 84

There was no significant difference between viewers and non-viewers with respect to more commonly kept records in either country, such as budgets and financial records. There were also no significant differences between urban and rural respondents or between young men and women, with respect to the effect of DLTP on the different types of record keeping.

ADOPTING NEW PRACTICES

The evaluation findings suggest that DLTP had an impact on the use of irrigation in both Kenya and Tanzania, and on the use of fertilizer in Tanzania. There was no association with other practices. In Kenya, 28% of viewers used irrigation in the months following the DLTP airing season, compared with 15% of non-viewers. However, there was no association with intensity of viewership. In Tanzania, the effect of DLTP was primarily observed among high-intensity viewers: 45% of high-intensity viewers used irrigation, compared with 27% of non-viewers. The equivalent figures for fertilizer use were 57% among high-intensity viewers and 49% among non-viewers.

The impact of DLTP on adoption practices is supported by findings from the in-depth interviews with respondents:

> "I am used to doing one type of farming where I depended on the rain. Through watching the program 'Don't Lose the Plot', **I saw you can also start doing irrigation farming** and life will continue."
>
> *- Ondieki, Morogoro, TZ, Adopter of farming activities*

Graph7: Percentage of Non-viewers vs. High-intensity Viewers Who Used Irrigation Following the DLTP Airing Season
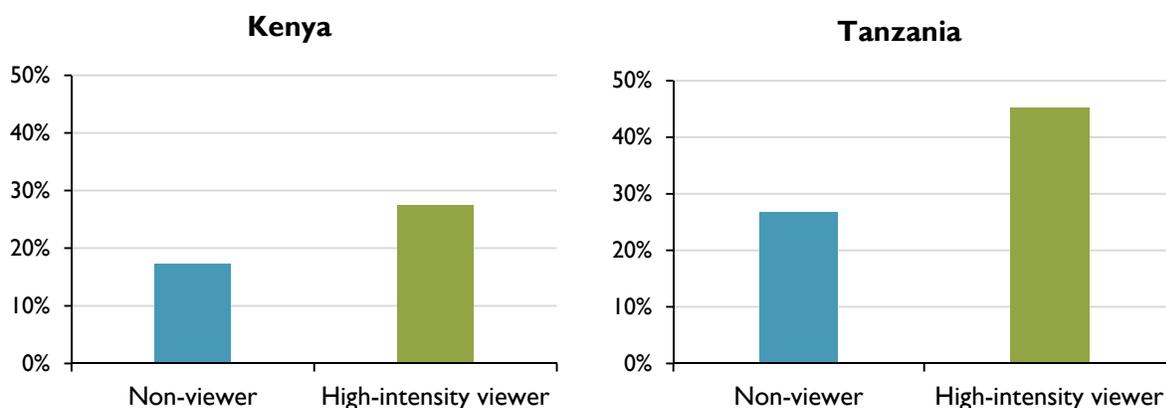
Base: Kenya - 220 non-viewers and 87 high-intensity viewers;
Tanzania - 273 non-viewers and 84 high-intensity viewers (Appendix Table 2b)

SOCIO-ECONOMIC FACTORS INFLUENCING ADOPTION OF PRACTICES

It is possible that factors such as educational level or socio-economic status were associated with the adoption or use of new farming practices and willingness to take up farming. In order to test whether educational attainment and socio-economic indictors were associated with such factors, binary logistic regression analysis was used. The dependent variables were use/no use of fertilizers, irrigation, and crop/animal protection chemicals, and willing/not willing to take up farming in the next three years. The independent variables tested in the model were educational attainment, access to farm land, access to electricity and roof and floor material in the house (proxies for socio-economic status, since no summary measure for socio-economic status is available from the survey data). With the exception of access to farm land, none of the variables were significantly associated with either of the dependent variables at the 5% level, both in Kenya and Tanzania.

These results are not surprising. As discussed previously, viewers and non-viewers were matched to represent similar demographic profiles. As a result there may be less variation in educational attainment and socio-economic indictors than in the sample overall. The relatively small sample size used for analysis also means significant associations are less likely to be detected. That said, the main objective of the analysis was to assess differences between viewers and non-viewer and further analysis with respect to demographic factors are beyond the scope of this evaluation.

IMPACT ON INTENTION, BEHAVIOR, AND ACTION – KEY POINTS

- There was greater intention to take up farming as a business for viewers of DLTP than non-viewers in Kenya.
- DLTP was successful in improving the level of production records kept, particularly among high-intensity viewers, in both Kenya and Tanzania.
- DLTP had an impact on viewers' use of irrigation in both Kenya and Tanzania, and on the use of fertilizer in Tanzania.

4.4 WHAT CORE AREAS OF LEARNING – IN TERMS OF NEW SKILLS OR NEW IDEAS – CAN BE DIRECTLY ATTRIBUTED TO VIEWING DLTP?

The findings from the evaluation indicate that DLTP succeeded in improving knowledge related to farming among high-intensity viewers in both Kenya and Tanzania.

In Kenya, the average knowledge summary score was 3.2 out of 5 among high-intensity viewers, compared with 2.9 among non-viewers. In Tanzania, the equivalent figures were 2.8 among high-intensity viewers and 2.4 among non-viewers.

Graph 8: Average Self-Reported Knowledge Score (All Respondents, Tanzania and Kenya)
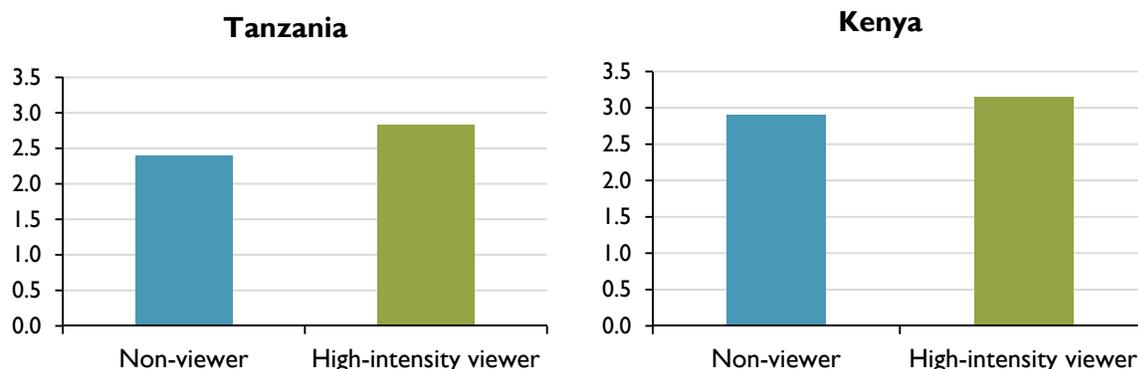
Tanzania

Kenya

Base: Kenya - 406 non-viewers and 146 high-intensity viewers; Tanzania - 527 non-viewers and 120 high-intensity viewers

The specific topics for which DLTP viewership had the strongest association with level of knowledge are shown in the table below. Further details are shown in the Appendix. [18]

Table 4: Topics for Which DLTP Has Increased Knowledge among Viewers (All Respondents, Kenya and Tanzania)

KENYA	TANZANIA
Top dressing (application of top dressing fertilizer)	Allocate finances as per enterprise need
Adopting value additions for your crops	Do rolling budgets for farm
Researching and choosing the right crop to plant/animal to keep	Use the issued record keeping books for your records keeping
Conducting market research for your crop	Explore financing options that suits business
Generating a financial report	Keep a log book
Insurance of farm animals	Crop rotation
Soil testing	Use online sources of information (i.e. iShamba)

Base: Kenya: 812 respondents; Tanzania: 1054 respondents (Appendix Table 3)

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[18] For Kenya, these topics are the ones for which there is a statistically significant association. In Tanzania, a larger number of topics are significantly associated with viewership. The ones presented in the table are the ones where the difference in average score between high intensity viewers and non-viewers is greater than 0.5 points.

The qualitative findings indicate that DLTP provided viewers with valuable skills and knowledge and inspired some to take a different track in their farming activities.

> "The program included teachers talking about **how you can get profits and how to farm correctly**. They were easy to understand. They taught well."
>
> *- Nancy, Arusha, TZ, Adopter of farming activities*

> "Yes, [I learnt] how to do poultry farming. First, you should clean the house. You should also disinfect the structure before you bring in the chicks. **Before, I did not understand what you are supposed to do when you are keeping poultry**."
>
> - *Memory, Mbeya, TZ, Adopter of farming activities*

> "I like the program because it teaches about new technology in farming. I did not know about **soil testing,** but I got to learn about it there. How to prepare your land and how to **prepare the nursery**."
>
> - *Adopter of farming activities*

4.4.1 BARRIERS TO FARMING

Qualitative research explored the barriers and motivators to farming among adopters and non-adopters. The most notable barriers for both groups were access to capital and land. The unpredictability of weather conditions was also a reason non-adopters cited for not taking up or intending to take up farming. Other challenges raised by evaluation participants included low quality of farm inputs, such as fertilizer and seeds. For those in school or employment, time and scheduling constraints were reported to be a challenge.

> "I need capital for fertilizer. **If I don't use fertilizer, I am not going to harvest anything**. Without fertilizer, you are going to harvest very little."
>
> - *Memory, Mbeya, TZ, Adopter of farming activities*

> "Last year, I planted and there were no rains until February. **It rained in February, and I was forced to plant again**. I planted and then there were no rains. The seeds got spoilt in the soil."
>
> *- Ondieki, Morogoro, TZ, Adopter of farming activities*

"For you to get a loan you must have land and you must put that as security to get the loan. **For me when I go, I can't get a loan**."

- *Veronica, Mbeya, KN, Non-adopter of farming activities*

"There are some losses, sometimes the plants get spoilt, and they can be infected by pests. […] rain can also affect your farming. You may have a lot of stock and there is no market for your produce."

- *Kilindi, Dar, TZ, Non-adopter of farming activities*

"The biggest challenge is fake fertilizer. Last year when I was farming, I got fertilizer that was not good quality. I later learnt that the fertilizer was used to plant grass and not maize…. I harvested less than the amount that I was expecting."

- *Ondieki, Morogoro, Adopter of farming activities*

"Fertilizer and low quality seeds. You may plant seeds that you have been told will overcome drought or rains. When you plant, the results will not be the same as you had been told."

- *Ondieki, Morogoro, TZ, Adopter of farming activities*

"**Time is the problem because most of the time I am in school** and I have to get a vacation so that I can go and try it out."

- *Ondieki, Morogoro, TZ, Adopter of farming activities*

4.4.2 MOTIVATORS TO FARM

According to respondents, an important motivator for taking up farming was the link to economic gain and financial independence. Some respondents reported perceiving farming as an activity that generates money fast through lump-sum payments, because payment is immediate upon harvest sale. The notion of a quick turnaround also applied to livestock farming, since an animal can be sold quickly when the need arises. Another key driver for farming mentioned by respondents was subsistence to help meet food needs for everyday consumption. There was also an emotive connection to farming, in that farming can be a facilitator for other activities. For example, the income generated through farming can be used to pay school fees.

Some respondents also perceived farming to have low entry barriers, as little technical skill is needed. It was also mentioned that land for leasing is prevalent, which makes entry into farming easier.

The specific aspects of the program that influenced youth to take up farming are further discussed in the section below on perceptions of DLTP. Some examples of motivators are highlighted in the following quotes from the qualitative research:

"[Farming] is an economic activity that **pays off as soon as you harvest**, so it's possible to immediately identify whether you are operating at a profit or loss. That's why farmers benefit more than office workers because they get paid immediately. Also, it's a source of food because if one gets 40 sacks of maize, they can sell off some and reserve some for food at home. Also, after the first year of farming, the farm will generate its own revenue that comes off your initial investment as long as there is proper supervision."

- Victor, Dar, TZ, Non-adopter of farming activities

"**Time is the problem because most of the time I am in school** and I have to get a vacation so that I can go and try it out."

- Ondieki, Morogoro, TZ, Adopter of farming activities

"**Time is the problem because most of the time I am in school** and I have to get a vacation so that I can go and try it out."

- Ondieki, Morogoro, TZ, Adopter of farming activities

"**Farming is easy**. First, I did not buy that land; my mother-in-law gave me three and a half acres of land. It is like inheritance."

- Ondieki, Morogoro, TZ, Adopter of farming activities

"When you compare farming and other businesses, **you will get a lot of money at one time**."

- Kilindi, Dar, TZ, Non-adopter of farming activities

"It assists me with the needs that I have at home. It also gives me income. **My children have been able to go to school**. You can plant one or two acres of maize and harvest more than ten sacks and use that money. You will benefit."

- Nancy, Arusha, TZ, Adopter of farming activities

AREAS OF LEARNING – KEY POINTS

- DLTP was successful in improving knowledge related to farming among high-intensity viewers in both Kenya and Tanzania.
- DLTP high-intensity viewers, through a self-assessment, rated their knowledge higher than non-viewers across a range of farming and agribusiness topics in both countries.
- The key barriers to farming reported by interviewees included access to capital and land, quality of inputs, and time. Key motivators included financial rewards, ease of take-up, and support farming can provide for subsistence and other activities.

4.5 PERCEPTIONS OF DLTP

Overall, respondents perceived DLTP as an engaging and entertaining program. They found the program empowering because it presented easily achievable solutions to the challenges of farming and agribusiness. Based on the qualitative interviews, it seems DLTP seems had a more tangible effect on youth who were already predisposed towards farming, (i.e. adopters of farming practices). However, non-adopters also viewed the program favorably.

> "The presenters were nice; they were trying to make it **lively and fun**. It was interactive and social, considering what they did in those few months. I think it can convince me to produce. The size of the farm and what they did, it was good, **it was great actually**."
>
> - *James, Nairobi, KN, Non-adopter of farming activities*

> "It has many benefits for me. **It opened my mind**. I watched from the beginning up to the market."
>
> - *George, Dar, TZ, Non-adopter of farming activities*

> "When you watch it… **you get to learn the right way** [of farming] and now with that information you just feel that when you do it, it will come out the right way."
>
> - *Brian, Kisumu, KN, Non-adopter of farming activities*

> "[Farming] is an economic activity that **pays off as soon as you harvest**, so it's possible to immediately identify whether you are operating at a profit or loss. That's why farmers benefit more than office workers because they get paid immediately. Also, it's a source of food because if one gets 40 sacks of maize, they can sell off some and reserve some for food at home. Also, after the first year of farming, the farm will generate its own revenue that comes off your initial investment as long as there is proper supervision."
>
> *- Victor, Dar, TZ, Non-adopter of farming activities*

There was some evidence to suggest that DLTP should make adjustments to ensure the program accurately reflects the local context in Tanzania. The name *Don't Lose the Plot* was perceived to be 'a mouthful' to pronounce by some respondents, particularly among the Swahili audience in Tanzania.

> "The presenters were nice; they were trying to make it **lively and fun**. It was interactive and social, considering what they did in those few months. I think it can convince me to produce. The size of the farm and what they did, it was good, **it was great actually**."
>
> *- James, Nairobi, KN, Non-adopter of farming activities*

> "It is hard [the name of the program DLTP], but my opinion is that if that program is there, it is good to give out information."
>
> *- Jaina, Arusha, TZ, Non-adopter of farming activities.*

> "I think they are ok, though I think they should improve their knowledge on each country's realities on the ground. They could also learn to present in other languages apart from Swahili. They should also incorporate sign language so that the deaf can also follow the program. […] Participants were ok, I like that they do not have prior experience with farming but are taking part. This encourages others to take up farming." Victor, Dar, TZ, Non-adopter of farming activities.

Evaluation participants knew that the program was aired on Citizen TV, but they did not recall the website or *iShamba* very well. Few participants were familiar with DLTP on YouTube. This suggests more could be done to improve the program's branding and visibility. Moreover, several participants proposed that DLTP could be shown as short clips on social networks that are popular with youth, such as WhatsApp and Facebook.

"**Short clips** on the TV, and **YouTube and Facebook** are useful. When it comes to the agricultural stuff, you want things faster and summarized. Twitter and Instagram definitely." Jawahel, Nairobi, KN, Non-adopter of farming activities.

"I would say a **WhatsApp**, just a brief video. I would say **two minutes** or something. If it is interesting, or maybe someone has told me that this thing is nice, or maybe it's funny, it captures my mind, I can easily click on that. If it is a comedian, I think I will be interested because I know how funny those guys are." James, Nairobi, KN, Non-adopter of farming activities.

4.2 WHAT IS THE LEVEL OF VIEWERSHIP OF DLTP?

The focus of this evaluation was to measure the type of impact the show had on viewers' knowledge, attitudes, and behavior. It did not initially set out to measure exact number of viewers or the number of young people impacted by the program.

However, the evaluation methodology provided an opportunity to make estimates of viewers reached, based on results from the sampled household respondents and verified viewer sample sizes. Therefore, based on the sampled respondents, the evaluation suggests estimates of viewership at the national-level. The viewership estimates below are based on verified viewership data as recorded in the main questionnaire, and defined as watching at least half of one of the 13 episodes. High-intensity viewership was defined as watching seven or more episodes, and at least half of each of those episodes.

In Kenya, DLTP viewership was estimated to be 12% of all youth in the country, representing approximately 1.7 million out of 14.3 million youth, including 600,000 high-intensity viewers. In Tanzania, estimated viewership was slightly higher at 16% of all youth in the country, representing 2.4 million out of 15.3 million youth, including 800,000 high-intensity viewers.

Graph 9: Market Size Estimation for Youth Exposed to at Least One DLTP Episode
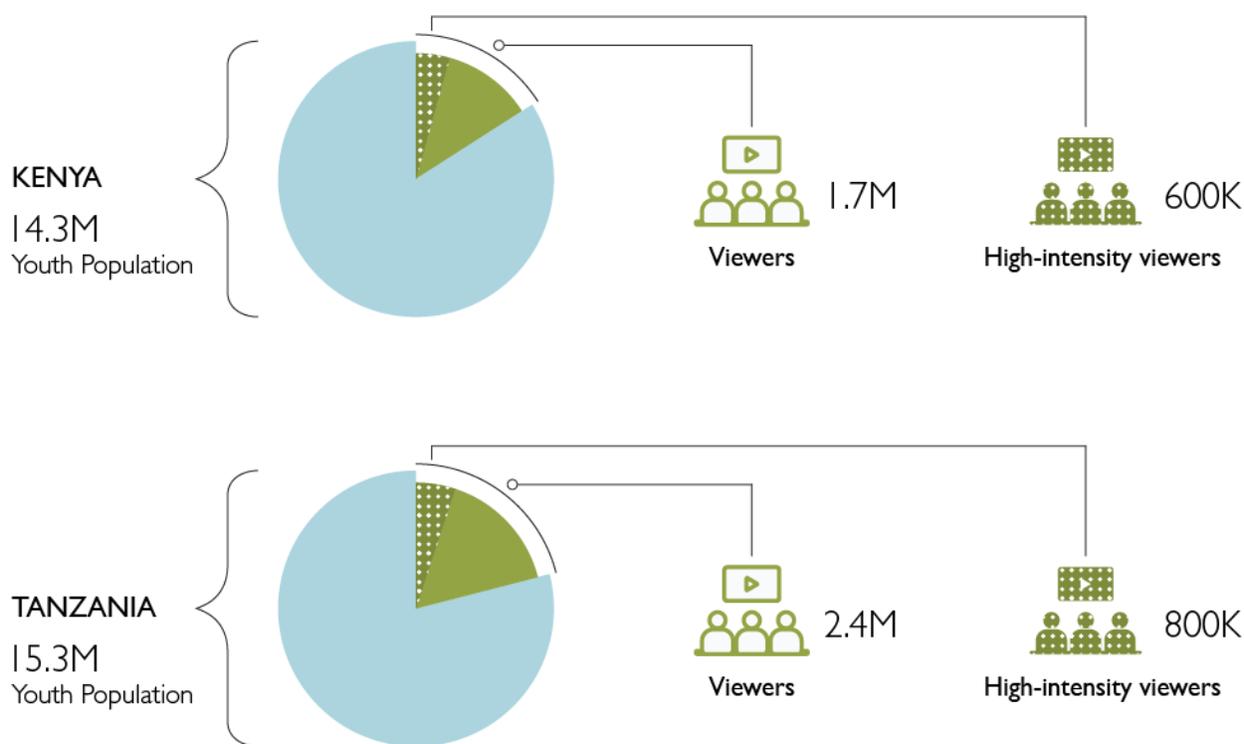
In Kenya, there was little difference in viewership between young men (13%) and women (12%). In Tanzania, slightly more young men than women watched the program (17% and 14% respectively). Viewership was highest among youth between the ages of 24-29 years old in both Kenya (14%) and Tanzania (17%).

In both countries, approximately 40% of viewers watched at least half of the episodes. There were no sources of viewership data available that directly indicated the audience size for DLTP.

There was, however, other survey data that asked about television viewing during given time slots in the past seven days or in the previous day.[19] This data suggests that DLTP viewership was notably lower than that reported in Figure 1, and more likely to be in the range of 1- 4% of youth in the two countries. This quantitative data from other surveys is based on a different methodology and is subject to recall bias. It is possible that a true viewership percentage may lie somewhere in between the different estimates above.

Due to uncertainty regarding the true viewership of the population, this report discusses percentage differences between viewers and non-viewers but does not extrapolate the findings to estimate the number of young people impacted by the program.

Graph 10: Estimated Percentage of Viewers Who Watched at Least Half of an Episode
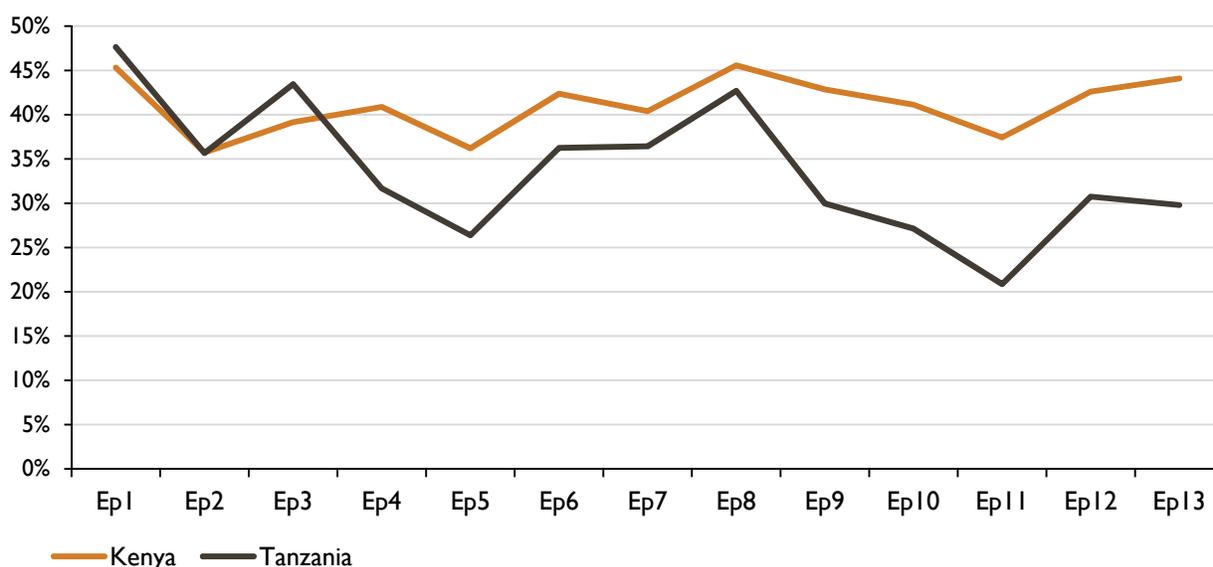
Bases: Kenya: 406 viewers aged 18-35; Tanzania: 527 viewers aged 18-35

The manner in which people tended to watch DLTP is reflected in the descriptions given in the qualitative interviews:

> "I just caught a glimpse of it […] because you have to give every program a chance, and they wouldn't let me watch more. Also, I didn't have the time to sit and watch it through the internet. […] But also, it is long, it takes a little longer time. Personally, I don't like watching long things. I love short summarized clips."
>
> -   *Jawahel, Nairobi, KN, Non-adopter of farming activities*

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[19] Ipsos collects this data. The survey asks about the previous 7 days for Kenya and previous day for Tanzania.

"When I saw the program, the guys had already done the planting. So, I did not capture or see them talk about finance."

- James, Nairobi, KN, Adopter of farming activities

"I started watching it half way. If I started watching from the beginning, I would have benefited a lot more."

- Memory, Mbeya, TZ, Adopter of farming activities

LEVEL OF VIEWERSHIP – KEY POINTS

- Achieved viewership based on this evaluation was 1.7m in Kenya (12% of ages 18-35), including 600,000 high-intensity viewers, and 2.4m in Tanzania (16% of 18-35 year olds), including 800,000 high-intensity viewers.
- Viewing peaked among 24-29 years olds in both countries.
- Both quantitative and qualitative data suggest that viewers had often only watched parts of the series.
- The assessment was unable to determine actual numbers of people impacted by the program. Instead the assessment was able to determine percentage differences among viewers and non-viewers.

V. CONCLUSION

The evaluation design was based on a mixed-methods approach comprised of a quantitative cross-sectional household survey and exploratory qualitative interviews with viewers of DLTP. This approach was the most feasible and cost-effective given the nature of the intervention. Prior to the airing of DLTP, it was not known who would end up watching the program or what the level of viewership would be. A longitudinal approach would therefore have needed to sample an extremely large number of respondents at its baseline to ensure a sufficiently large sample of viewers at end-line. Triangulating the findings from these evaluation components means robust conclusions can be drawn with respect to the effect of DLTP on changes in attitudes, knowledge, and behavior, although such conclusions are less rigorous compared to a longitudinal evaluation design.

The evaluation findings suggest DLTP changed young people's attitudes towards farming in Tanzania. Particularly attitudes related to the ideas that farming is profitable and that it is not only for poor people and retirees. There is no clear evidence that the program influenced attitudes towards farming in Kenya. Among youth not engaged in farming, there is evidence to suggest that DLTP was associated with more positive attitudes towards the profitability of farming in both Kenya and Tanzania. However, there is little indication that such changes in attitudes translated into more positive attitudes towards farming as an appropriate employment alternative.

There is strong evidence to suggest that the program succeeded in increasing knowledge related to farming in both Kenya and Tanzania, which also translated into improved practices. Specifically, the following practices were associated with DLTP viewership: use of irrigation in both Tanzania and Kenya, increased use of fertilizers in Tanzania, improved record keeping in both Kenya and Tanzania (crop, dairy, and poultry records in Kenya and crop records in Tanzania). In Tanzania, DLTP was also associated with a higher level of use of log books. While fertilizer was fairly commonly used overall in both countries, both irrigation and crop production records were much less commonly employed, suggesting that DLTP changed behavior in some areas where knowledge may have been lacking. Other practices, such as use of crop/animal protection chemicals and use of budgets and financial records were not associated with DLTP viewership. These practices tended to be more commonly applied generally.

There is little evidence to indicate that DLTP led to increased uptake of farming, though one airing season is a fairly short period to observe major behavior change relating to work or lifestyle. While the findings do show that DLTP is associated with greater intention of taking up farming as business in the coming three years in Kenya, this finding is not supported by other corresponding attitudinal indicators among non-farmers. Further research would be needed to verify whether this intention translates into action.

In Kenya, viewership was estimated to be 12% of youth, representing 1.7 million youth between the ages of 18-35 years old. In Tanzania, estimated viewership was slightly higher at 16% of youth, representing 2.4 million youth between the ages of 18-35 years old. There was little difference in viewership between young men and women. These figures are notably higher than what other audience estimates suggest. Therefore, the true figure might be slightly lower. In any case, there is potential to further increase exposure to the program among the target population.

The effect of DLTP was primarily observed among the highest intensity viewership group. As a result, future programs should seek to increase consistent and continuous viewership to maximize impact.

VI. RECOMMENDATIONS

6.1 GENERAL RECOMMENDATIONS

RECOMMENDATION 1

Implementers should increase repetition of key messages across episodes. Impact was strongest with higher intensity exposure and high intensity viewers were more likely to have changes in knowledge, attitude, and behavior when compared with low intensity viewers. Themes and technical content repeated in more than one episode contributed to higher knowledge scale, compared to themes that occurred in only one episode.

RECOMMENDATION 2

Implementers should build on positive perceptions of DLTP and make greater use of marketing to increase engagement with the brand and program information. In the pilot season, DLTP started to establish itself as a known entity though it may not clearly have stood out as a separate brand from *Shamba Shape Up (SSU)*. While this was partly due to leveraging SSU's large audience base to launch the first season, DLTP could move to invest in marketing itself as a standalone show and expand its viewer base. To increase exposure to more viewers and increase intensity of viewership, investment in social and digital media could be increased, as well as investment in traditional media outreach and print advertising. Finally, the name of the program could be adjusted to account for its Swahili language audience in Tanzania.

RECOMMENDATION 3

Development partners should consider further investment in TV programs targeted at behavior change given that the program had a notable impact on knowledge of farming and agribusiness methods and attitudes.

6.2 RECOMMENDATIONS FOR AGRICULTURAL PROGRAM IMPLEMENTERS

RECOMMENDATION 4

Implementers should work in conjunction with other programs or institutions to help address land access and financial access, which are key structural barriers for young people to engage in farming. The findings from the in-depth interviewers indicated that access to land and financial support are notable barriers preventing some youth from taking

up farming. Initiatives addressing these structural barriers should therefore be considered in conjunction with programs addressing attitudinal changes.

6.3 RECOMMENDATION FOR FURTHER RESEARCH AND FUTURE EVALUATIONS

RECOMMENDATION 5

Evaluators should follow respondents over an extended period of time, especially those who indicate they have a high intention to take up farming. This would help ascertain their actual uptake and the barriers with which they are presented. Researchers can then document this as a methodological approach for prior estimation of impact using reported behavioral intentions to help inform future interventions.

VII. APPENDIX

The tables in this appendix show the percentages and scores underpinning the charts and figures referred to in the text in the preceding sections.

Note: The tables are ordered by the most common response in each country. This means the order of indicators may differ for Kenya and Tanzania.

Table 5a: Attitudes Towards Farming: Percentage Who Strongly Agree with Each Statement

i. Kenya

Attitudinal Item	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
	%	%	%	%	%		
Farming is not only for poor people	57	57	53	60	57	0.541	0.654
Farming is profitable	50	48	47	56	50	0.983	0.400
Farming is not only for retirees	51	48	46	48	49	0.536	0.658
Farming is for not only for old people	48	49	42	45	46	0.547	0.650
Farming is cool	42	45	41	50	44	1.149	0.329
Farming is appropriate employment alternative	37	41	38	37	38	0.152	0.928
Interested in farming	18	21	17	32	21	4.485	0.004
Base: All respondents	406	111	149	146	812		

ii. Tanzania

Attitudinal Item	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
	%	%	%	%	%		
Farming is not only for poor people	70	69	65	80	70	2.9	0.033
Farming is cool	56	63	54	73	59	4.8	0.002
Farming is profitable	62	68	57	72	63	3.0	0.029
Farming is not only for retirees	56	54	45	64	54	4.5	0.004
Farming is appropriate employment alternative	63	66	56	63	62	1.5	0.202
Farming is for not only for old people	37	42	37	43	39	1.0	0.392
Interested in farming	20	20	22	19	21	0.2	0.897
Bases: All respondents	527	183	224	120	1054		

Table 5b: Attitudes Towards Farming Among Non-Farmers: Percentage Who Strongly Agree with Each Statement

j. Kenya

Attitudinal Item	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
	%	%	%	%	%		
Farming is not only for poor people	52	54	45	61	52	1.111	0.345
Farming is profitable	46	46	32	63	46	4.146	0.007
Farming is not only for retirees	47	41	35	47	44	1.152	0.328
Farming is for not only for old people	39	43	35	39	39	0.283	0.837
Farming is cool	38	41	36	51	40	1.175	0.319
Farming is appropriate employment alternative	34	38	26	34	33	0.702	0.552
Interested in farming	10	13	6	22	12	3.045	0.029
Base: All respondents	188	56	69	59	372		

iii. Tanzania

Attitudinal Item	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
	%	%	%	%	%		
Farming is not only for poor people	69	71	67	80	70	0.8	0.499
Farming is cool	55	69	51	80	59	5.4	0.001
Farming is profitable	61	66	53	75	61	2.3	0.074
Farming is not only for retirees	54	58	48	68	54	1.6	0.181
Farming is appropriate employment alternative	62	65	54	60	61	0.9	0.452
Farming is for not only for old people	35	44	41	43	39	1.0	0.395
Interested in farming	18	23	14	18	18	0.8	0.512
Bases: All respondents	266	97	98	40	501		

Table 6: Farming Intention and Uptake of Farming: Respondents Who Are and Are Not Currently Farming

i.   Kenya

Indicator	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	P-value
	%	%	%	%	%		
Intention of going into farming as main business*	73	87	79	84	77	1.5	0.223
Started farming between May and August 2017**	16	14	14	21	16	0.9	0.417
Intention to continuing farming as a main business~	74	77	73	56	71	1.8	0.148
Bases							
~Base: Respondents engaged in farming	117	30	37	36	220		
*Base: Respondents not currently farming	132	31	34	38	235		
**Base: All respondents	406	111	149	146	812		

ii.   Tanzania

Indicator	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	P-value
	%	%	%	%	%		
Intention of going into farming as main business*	86	65	89	90	84	3.5	0.016
Started farming between May and August 2017**	28	26	28	37	29	1.5	0.224
Intention to continuing farming as a main business~	72	58	62	58	66	3.0	0.031
Bases							
~Base: Respondents engaged in farming	266	97	98	40	501		
*Base: Respondents not currently farming	108	31	44	20	203		
**Base: All respondents	527	183	224	120	1054		

Table 7: Application and Use of Farming Practices: Respondents Who Are Currently Farming

i.   **Kenya**

Indicator	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	P-value
	%	%	%	%	%		
Use of fertilizer	77	82	74	83	78	0.8	0.494
Keep budget	65	73	67	75	68	1.1	0.343
Measure financial status	53	64	64	64	59	1.8	0.141
Use of crop/animal protection chemicals	49	62	48	59	52	1.7	0.163
Keep crop production records	40	51	41	58	457	3.2	0.023
Keep financial records	36	47	33	44	38	1.4	0.231
Keep a log book of farm activities	33	47	35	43	37	1.9	0.135
Keep dairy production records	27	36	28	45	32	3.3	0.020
Keep poultry production records	24	29	28	41	29	3.1	0.028
Use of irrigation	15	29	25	30	21	3.9	0.009
*Base: Respondents engaged in farming	220	55	81	87	443		

ii.   **Tanzania**

Indicator	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	P-value
	%	%	%	%	%		
Keep budget	61	70	70	79	67	3.4	0.017
Measure financial status	61	66	64	74	64	1.6	0.183
Use of fertilizer	49	34	46	57	47	3.3	0.019
Keep financial records	35	38	40	50	39	2.2	0.091
Keep crop production records	36	30	39	54	38	4.1	0.007
Use of crop/animal protection chemicals	32	25	39	40	34	2.2	0.092
Keep a log book of farm activities	28	20	29	42	29	3.3	0.020
Use of irrigation	27	23	25	45	28	4.9	0.002
Keep poultry production records	23	13	20	24	21	1.6	0.189
Keep dairy production records	10	13	12	15	12	0.6	0.624
*Base: Respondents engaged in farming	273	88	129	84	574		

Table 8: Self-Reported Knowledge: Average Score on Scale 1 – 5 (All Respondents)

i. **Kenya**

	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
	Average score						
Summary score overall	2.9	3.0	2.9	3.2	3.0	3.0	0.029
Ensure the house where you keep animals is clean and well ventilated	3.7	3.5	3.5	3.7	3.6	1.1	0.342
Use of fertilizer/manure	3.5	3.4	3.5	3.8	3.5	1.8	0.145
Build secure houses for animals to avoid theft	3.3	3.3	3.4	3.5	3.4	1.1	0.368
Top dressing	3.1	3.2	3.0	3.5	3.2	4.6	0.004
Adopt a proper feeding schedule	3.1	3.2	3.1	3.4	3.2	2.4	0.063
Use supplements for your farm animals for greater yields	3.1	3.2	3.1	3.3	3.2	0.7	0.549
Obtain best price for your produce	3.1	3.1	3.1	3.4	3.1	2.2	0.091
Crop rotation	3.0	3.1	3.1	3.3	3.1	1.9	0.129
Do a work plan of what you want to plant and the animals to keep	3.1	2.9	3.0	3.3	3.1	2.3	0.072
Follow a proper vaccination schedule	3.0	3.1	3.0	3.3	3.0	2.0	0.118
Choose the right crop to plant/animal to keep	2.9	2.8	2.8	3.2	3.0	3.2	0.023
Identify target market early enough	2.9	3.0	2.9	3.1	2.9	1.5	0.206
Allocate finances as per enterprise need	2.9	2.9	2.7	3.1	2.9	2.1	0.101
Explore financing options	2.9	3.1	2.9	3.0	2.9	0.8	0.503
Implement strategies to reduce crop failure	2.9	3.0	2.7	3.1	2.9	2.3	0.073
Keep log book	2.9	2.8	2.8	3.1	2.9	1.8	0.140
Use issued record keeping books	3.0	2.9	2.7	2.9	2.9	0.9	0.447
Adopt value addition for crops	2.8	3.0	2.7	3.2	2.9	5.0	0.002
Do rolling budgets for farm	2.8	2.8	2.7	3.0	2.8	1.2	0.301
Do market research for crop	2.7	2.7	2.8	3.2	2.8	4.7	0.003
Measure financial status compared to budgets	2.7	2.8	2.7	2.9	2.8	0.7	0.577
Generate a financial report	2.7	2.8	2.6	3.0	2.8	2.8	0.037
Use online sources of information (i.e. I-shamba)	2.6	2.7	2.8	2.9	2.7	1.0	0.399

	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
Technology adoption	2.6	2.7	2.7	2.9	2.7	1.0	0.375
Detect and treat soil diseases	2.5	2.6	2.5	2.8	2.6	1.5	0.223
Insure farm animals	2.4	2.8	2.4	2.7	2.5	3.3	0.019
Soil testing	2.3	2.5	2.5	2.6	2.4	2.9	0.033
Base: All respondents	406	111	149	146	812		

ii.   Tanzania

	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
	Average score						
Summary score overall	2.4	2.3	2.5	2.8	2.4	6.5	0.000
Ensure the house where you keep animals is clean and well ventilated	3.1	2.8	3.2	3.4	3.1	3.0	0.028
Use of fertilizer/manure	3.0	2.8	3.0	3.3	3.0	2.3	0.071
Allocate finances as per enterprise need	2.8	2.9	2.9	3.6	3.0	6.6	0.000
Do rolling budgets for farm	2.8	2.7	3.0	3.3	2.9	4.2	0.006
Choosing the right crop to plant/animal to keep	2.7	2.8	2.7	3.1	2.8	1.7	0.155
Build secure houses for animals to avoid theft	2.6	2.6	2.9	3.0	2.7	3.3	0.019
Use issued record keeping books	2.6	2.6	2.7	3.3	2.7	5.9	0.001
Measure financial status compared to budgets	2.7	2.4	2.6	3.2	2.7	5.1	0.002
Adopt proper feeding schedule	2.6	2.5	2.7	3.0	2.7	2.7	0.042
Explore financing options that suit your business	2.6	2.5	2.5	3.2	2.7	5.3	0.001
Do a work plan of what you want to plant and the animals to keep	2.7	2.4	2.7	2.9	2.6	3.0	0.029
Keep a log book i.e. records of all the farm activities	2.5	2.5	2.7	3.1	2.6	4.6	0.003
Obtain best price for your produce	2.5	2.4	2.6	3.0	2.6	3.0	0.029
Irrigation	2.5	2.4	2.5	2.8	2.5	1.9	0.136
Crop rotation	2.4	2.2	2.7	3.0	2.5	6.0	0.000
Do market research for your crop	2.4	2.5	2.5	2.8	2.5	2.3	0.076
Use supplements for your farm animals for greater yields	2.5	2.3	2.5	2.7	2.5	1.3	0.269

	Non-viewer	1-2 eps	3-6 eps	7+ eps	Total	F-stat	p-value
Follow proper vaccination schedule	2.5	2.3	2.5	2.8	2.5	2.4	0.070
Adopt value addition for crops	2.5	2.2	2.5	2.8	2.5	3.0	0.030
Generate a financial report	2.3	2.3	2.3	2.7	2.4	2.5	0.057
Identify target market early enough	2.2	2.1	2.3	2.6	2.2	2.3	0.075
Implement strategies to reduce crop failure	2.1	2.0	2.1	2.6	2.2	4.0	0.007
Top dressing	2.0	2.0	2.1	2.5	2.1	2.8	0.038
Technology adoption	1.9	1.9	2.0	2.3	1.9	3.5	0.016
Use online sources of information (i.e. I-shamba)	1.8	1.7	2.0	2.4	1.9	8.0	0.000
Soil testing	1.9	1.7	1.9	2.1	1.9	1.6	0.186
Detect and treat soil diseases	1.6	1.5	1.7	2.0	1.6	4.0	0.007
*Base: All respondents	527	183	224	120	1054		