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# FOLLOW-UP BEHAVIOR CHANGE COMMUNICATION (BCC) INTERVENTIONS' EFFECTIVENESS EVALUATION REPORT

**NAFAKA PROJECT**

**July 2014**

This publication was produced for review by the United States Agency for International Development. It was prepared by Danya Africa.

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## **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

# CONTENTS

ABBREVIATIONS AND ACRONYMS.....	1
EXECUTIVE SUMMARY.....	2
I. BACKGROUND AND INTRODUCTION.....	3
I.1 NAFAKA PROJECT BCC INTERVENTIONS .....	3
I.2 EVALUATION OF EFFECTIVENESS OF BCC INTERVENTIONS .....	3
2. PROJECT AREA AND STUDY METHODOLOGY.....	5
2.1 PROJECT AREA .....	5
2.2 METHODOLOGY .....	5
2.2.1 RECRUITMENT AND THE EVALUATION DESIGN .....	5
2.2.2 SAMPLE SIZE.....	6
2.2.3 SAMPLE SELECTION.....	6
2.2.4 DATA COLLECTION TOOL .....	8
2.2.5 SURVEY TEAM TRAINING .....	8
2.2.6 IMPLEMENTATION OF THE FIELD DATA COLLECTION .....	8
2.2.7 DATA PROCESSING.....	9
2.3 STUDY LIMITATIONS .....	9
3. FINDINGS AND DISCUSSIONS .....	10
3.1 RESPONDENTS' DISTRIBUTION DEMOGRAPHICS.....	10
3.2 NAFAKA BCC OVERALL CAMPAIGNS FINDINGS.....	11
3.2.1 AWARENESS OF BCC CAMPAIGN MESSAGES.....	11
3.2.2 RECALL OF BCC CAMPAIGN MESSAGES.....	13
3.2.3 BELIEVING BCC CAMPAIGN MESSAGES .....	13
3.2.4 FOLLOWING ADVICE/ADOPTION OF BCC CAMPAIGN MESSAGES .....	14
3.3 NAFAKA BCC CAMPAIGN MATERIALS' SPECIFIC FINDINGS .....	16
3.3.1 NAFAKA BCC PRINT MATERIALS CAMPAIGNS.....	16
3.3.4 NAFAKA BCC RADIO CAMPAIGNS.....	18
3.4 THE ASSOCIATION BETWEEN RESPONDENT POSITION IN A GROUP AND GAP ADOPTION RATES.....	21
3.5 COMMUNICATION CHANNELS.....	22
3.5.1 RADIO OWNERSHIP .....	22
3.5.2 PREFERRED RADIO STATION.....	22
4. LESSONS LEARNED .....	25
5. CONCLUSIONS AND RECOMMENDATIONS .....	27
REFERENCES.....	28
APPENDIX I .....	29

# ABBREVIATIONS AND ACRONYMS

ACDI	Agricultural Cooperative Development International
BCC	Behavior Change Communication
FtF	Feed the Future
GAP	Good Agricultural Practices
M&E	Monitoring & Evaluation
PSA	Public Service Announcement
RFA	Radio Free Africa
SPSS	Statistical Package for Social Sciences
TBC	Tanzania Broadcasting Corporation
VBAAs	Village-Based Agricultural Advisors
VEO	Village Executive Officer
VOCA	Volunteers in Overseas Cooperative Assistance
USAID	United States Agency for International Development
ZBC	Zanzibar Broadcasting Corporation

# EXECUTIVE SUMMARY

NAFAKA project or “Staples Value Chain” is a 5-year subcontract to Agricultural Cooperative Development International (ACDI) Volunteers in Overseas Cooperative Assistance (VOCA), by the United States Agency for International Development in Tanzania (USAID/Tanzania), issued under the U.S. Government’s Feed the Future (FtF) Initiative.

The project uses behavior change communication (BCC) as one of its strategies to enhance the uptake of good agricultural practices (GAPs) among target beneficiaries. Specifically, the project uses radio and print materials to disseminate the GAP messages. Three BCC campaigns have been implemented by the project since 2012.

The project developed a BCC interventions’ evaluation plan whose purpose is to document the extent to which the BCC interventions are contributing to the uptake of the project’s GAPs. The specific objectives of the evaluations are to document the:

- Number of beneficiaries reached with BCC campaign messages
- Number of farmers and others who have applied new technologies or management practices

An initial evaluation of the effectiveness of BCC interventions was conducted in September 2013. A follow-up evaluation was conducted in May 2014. This report outlines the objectives of the follow-up evaluation, key findings, and lessons learned.

A questionnaire was administered to 323 individuals randomly sampled from three groups: (1) project group 1 that has been exposed to the BCC campaigns; (2) project group 2 that has not been exposed to the BCC campaigns; (3) A Control group which has not participated in NAFAKA project. Data was entered in Excel data files and analyzed using the Statistical Package for Social Sciences (SPSS), version 22. Chi-square tests were conducted to compare results of the initial and follow-up evaluations. The following are the highlights of the findings:

- The project has so far **reached** 585,340 people, or 84.1 percent of the target population, with BCC campaign messages.
- Of the farmers reached in the target districts, 393,934 people, or 67.3 percent, reported that they **adopted** the use of various GAPs due to exposure to the BCC campaigns with the following specifics:
  - Use of certified seeds by 310,815, or 53.1 percent farmers;
  - Appropriate use of fertilizers by 279,792, or 47.8 percent farmers;
  - Use of storage facilities by 223,014, or 38.1 percent farmers; and
  - Joint selling of crop produce by 207,210, or 35.4 percent farmers.

# I. BACKGROUND AND INTRODUCTION

## I.I NAFAKA PROJECT BCC INTERVENTIONS

NAFAKA project or “Staples Value Chain” is a 5-year subcontract to Agricultural Cooperative Development International (ACDI) Volunteers in Overseas Cooperative Assistance (VOCA), by the United States Agency for International Development in Tanzania (USAID/Tanzania), issued under the U.S. Government’s Feed the Future (FtF) Initiative. The goal of the FtF Initiative is to “sustainably reduce global poverty and hunger.” USAID/Tanzania’s overall program under FtF has the following objectives:

- Increase agriculture productivity;
- Maintain the natural resource base and promote adaptation to climate change;
- Stimulate the private sector;
- Increase trade;
- Support policy reforms and good governance;
- Ensure underserved groups benefit from growth; and
- Expand knowledge and training by supporting research and development.

Danya International (Danya) is one of the subcontractors implementing the NAFAKA project with ACDI/VOCA as the prime. Danya’s contribution to the project’s work effort is by providing support to Behavior Change Communication (BCC) interventions, Learning and Knowledge Management.

NAFAKA project’s strategy on the implementation of BCC interventions is by dissemination of positive behavior messages through print and radio campaigns with the aim of enhancing uptake of Good Agricultural Practices (GAPs) by the target farmers. The project’s BCC interventions follow the cropping cycle of its two value chains, rice and maize. The project has implemented the following BCC campaigns since 2012:

1. The first campaign involved the use of radio advertisements and print materials (posters and T-shirts) to disseminate GAP messages focused on “Use of certified seeds and the appropriate use of recommended fertilizers,” conducted in December 2012 – February 2013.
2. The second BCC campaign, conducted in July/August 2013, focused on “use of storage facilities/warehouses” and “joint sale of farm produce” by farmers. The project used radio advertisements and print materials (only posters) to disseminate GAPs.
3. The third campaign was conducted from December 2013 – March 2014 and focused on “Early farm preparation, use of certified seeds, line planting, appropriate use of fertilizers, and the source of farm inputs and agricultural expert information.” Posters, radio spots, and radio talk shows were used to pass the GAP messages. The radio talk shows covered other topics, including: women in agriculture, association/group formation and leadership, weed management, pre-harvesting, marketing preparations, and access to finance.

## I.2 EVALUATION OF EFFECTIVENESS OF BCC INTERVENTIONS

Danya developed a BCC interventions evaluation plan in 2012. The plan includes the evaluation of effectiveness of the BCC interventions as part of the project’s overall monitoring and evaluation (M&E) strategy. The purpose of the

evaluations is to document the beneficiaries' awareness of the campaign messages, change in their attitude, and change in behaviors in relation to farming practices. The evaluations are also expected to document the extent to which the BCC interventions are contributing to the uptake of the project's GAPs.

Specifically, the evaluations document the following:

- Number of beneficiaries reached by BCC campaign messages
- Number of farmers and others who have applied new technologies or management practices

An initial evaluation of the effectiveness of the project's BCC interventions was conducted in September 2013. That evaluation, which acted as a "baseline," was conducted after the first two BCC campaigns. According to the project's BCC evaluation plan, a follow-up survey was planned to be conducted 6 months after the initial survey in March 2014. The follow-up survey was conducted in May 2014.

# 2. PROJECT AREA AND STUDY METHODOLOGY

## 2.1 PROJECT AREA

The NAFAKA project is implemented in three regions in Tanzania mainland; that is, Morogoro, Dodoma, and Manyara, and in Zanzibar. However, BCC activities are implemented only among farmers in certain districts in three regions within the Tanzania mainland. The project implements BCC activities in five districts within the three regions (**Table 1**). The districts are further subdivided into clusters with different numbers of villages. The targeting of new villages for implementation of project and BCC activities in the three regions is based on consistent scaling up, with 243 villages carrying out project activities by the time of this evaluation. This follow-up evaluation targeted three groups of villages: (1) project group 1 that has been exposed to the BCC campaigns; (2) project group 2 that has not been exposed to the BCC campaigns; (3) A Control group which has not participated in NAFAKA project.

**Table 1: NAFAKA Project Area Targeted by BCC Activities**

Region	District	Cluster
Morogoro	Kilombero	Mlimba
		Ifakara North
		Mangula
		Ulanga
	Mvomero	Mvomero
Dodoma	Kongwa	Kongwa
Manyara	Kiteto	Kiteto

According to the 2012 Tanzania national housing and populations census released in 2013, the populations of the five districts covered by NAFAKA project's BCC interventions have a total population of about 1,539,834. The most densely populated Kilombero District in Morogoro Region had 407,880 people; Kongwa District in Dodoma Region reported 309,973; while Kiteto District in Manyara Region had 244,669. The other districts, Mvomero and Ulanga in the Morogoro Region, had 312,109 and 265, 203, respectively.

The populations of the other districts covered by this study were: Babati (312,392); Magharibi (370,645); North A (105,780); and North B (81,675). Productive adult population in the target area (ages 18–65 years) is about 45.2 percent<sup>1</sup> of the total population.

## 2.2 METHODOLOGY

### 2.2.1 RECRUITMENT AND THE EVALUATION DESIGN

The participating villages were randomly selected from among all the villages in the project region. As further outlined in the project's BCC effectiveness evaluation plan, to appropriately evaluate the effectiveness of the BCC campaign, data was collected from three groups of farmers:

<sup>1</sup> This percentage of the total population (1,539,834) has been used for the calculation of adoption rates, etc.

- (1) A group of project intervention villages that has been exposed to the BCC campaigns
- (2) A group of project intervention villages that has not been exposed to the BCC campaigns
- (3) A group of villages that are not participating in the NAFAKA project

The evaluation followed a quasi-experimental design in which the randomly selected farmers were assigned to one of the three treatment conditions as follows:

**E<sub>1</sub>: O<sub>1</sub> X<sub>1</sub> O<sub>2</sub>**

**E<sub>2</sub>: O<sub>1</sub> X<sub>2</sub> O<sub>2</sub>**

**C: O<sub>1</sub> O<sub>2</sub>**

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E<sub>1</sub> = Experimental Group 1, which has been exposed to the BCC campaigns

E<sub>2</sub> = Experimental Group 2, which has not been exposed to the BCC campaigns

C = A Control Group, which has not participated in the NAFAKA project

O<sub>1</sub> = Observation 1/Initial; O<sub>2</sub> = Observation 2/Follow-up; X<sub>1</sub> = Intervention 1/BCC Campaigns

X<sub>2</sub> = Intervention 2/BCC campaign + no BCC campaign

### **2.2.2 SAMPLE SIZE**

Based on the preliminary data from the first pilot BCC campaign effectiveness assessment of the NAFAKA project (July 2013), of the farmers across the project's six clusters, 59 percent had seen posters on seeds and fertilizers promoted by the project; an average of 38 percent of the respondents had seen the T-shirts across the six clusters; and 39 percent had heard NAFAKA-related radio messages. Of all the respondents who had seen print materials, 74 percent reported believing the messages, with 70 percent of them being able to follow the advice of the messages.

To estimate the sample size, an effect size of 0.20 was used, assuming that at least 20 percent of the farmers in the area covered by the BCC campaigns will adopt the GAPs. Although the adoption of the new farming practices may be higher than 20 percent, the use of a 0.20 effect size ensures that there is a large enough sample size for the evaluation. A detailed sample size estimation process is presented in **Table 2**.

**Table 2: Effective Size and Sample Size Estimation**

<b>Effect Size</b>	0.20
<b>Power</b>	0.80
<b>Confidence Level</b>	95%
<b>Sample Size</b>	E <sub>1</sub> Group = 102, E <sub>2</sub> Group = 102, C Group = 102 (Total number of farmers: 306)

Therefore, a minimum of 102 farmers was to be sampled from each of the three groups, which add up to a minimum of 306 farmers. However, to have at least 306 farmers in the final analysis, there was a need to actually recruit 310 to 350 respondents. In this follow-up survey, 323 respondents were recruited by the end of the fieldwork.

### **2.2.3 SAMPLE SELECTION**

A multi-stage sampling approach was used. Since this was a follow-up evaluation, in the project area with BCC interventions, the first stage involved listing of the five villages sampled during the initial evaluation in May 2013. The

five villages had lists of the 22 respondents per village who participated in the initial evaluation. To take care of potential loss to follow-up, 11 new respondents were randomly selected from a list of village/association members in each of the five villages; the sampling was done using a computer-assisted random number generator, Stat Trek. The data collection teams to these villages were meant to sample from the second list of 11 only in case they missed respondents from the original list of 22.

In the project without the BCC intervention region of Zanzibar, the first stage involved random selection of two regions followed by the selection of districts and villages. In the 25 villages randomly selected, a total of about 110 respondents were to be randomly selected in compliance with sample size estimation.

Due to logistics, a district within one of the regions where the project is implemented was selected as control. The district had to be far enough to avoid potential “contamination” from the project’s BCC radio campaign. Babati District in Manyara Region was selected. Within the district, five villages were randomly sampled, followed by a random selection of 22 respondents per village. The respondents were randomly sampled from lists of village residents received from the Village Executive Officer’s (VEO) office. Details of the villages sampled by cluster, districts, and regions are presented in **Table 3**.

**Table 3: Sampled Villages**

Group/Intervention Type	Region	District	Cluster	Village
Project + BCC	Manyara	Kiteto	Kiteto	Kibaya
	Dodoma	Kongwa	Kongwa	Makawa
	Morogoro	Mvomeo	Mvomeo	Milama
		Kilombero	Ifakara North	Namawala
			Mangula	Mgudeni
Project with no BCC	Mjini Magharibi		—	Muembe Msala Mtwango 1 Meli Nane Kwa Nyanya Kwa Mshamata Kwa Wametwe Kwa mwanamsungwa Kwa Humudi Kibonde Mzungu Kiangia Kiangia Meli7 Beira Fuoni Chunga Jumbi Chuini
				Pangeni Mzambarauni Mji Mpya Makoba Kwa Kibopa Kisongoni Kinyasini Kiamboni Birikani
Control	Manyara	Babati	—	Vilima Vitatu Singu Mandi Mamire Galapo

#### **2.2.4 DATA COLLECTION TOOL**

A questionnaire targeting individual farmers was designed, based on the evaluation questions in the project's BCC intervention evaluation plan and the project's initial BCC interventions evaluation. For ideal comparison, the same tool used during the initial evaluation should have been used during the follow-up survey; however, some new variables were introduced based on comments about gaps noted in the initial evaluation report and the need to take care of the BCC campaigns implemented after the initial evaluation. The revised questionnaire used is in Appendix I.

The questionnaire, which took an average of 50 minutes to administer, contained questions on basic information, demographics, including age, sex, level of education, marital status, and occupation of the respondents. It also contained questions on general communication/media channels used in the targeted villages, questions on awareness of the BCC campaigns already implemented by the project, and on ever seeing the campaign print materials, remembering main campaign messages, believing in the campaign messages, and following advice from the campaign messages. Radio campaign-related questions covering radio ownership, access, and hearing the NAFAKA project campaign messages on the radio were also included. The questionnaire concluded with questions on practices adopted as a result of the BCC campaigns. Although most of the questions were closed, a few were open-ended.

#### **2.2.5 SURVEY TEAM TRAINING**

An intensive 2.5-day training of the main evaluation team was conducted from the project's office in Morogoro from 8 – 10 May 2014, prior to commencement of the fieldwork. Due to logistical challenges, training for three Research Assistants who collected data in Zanzibar was conducted on 12 May 2014 from the Island.

The training covered topics on: survey techniques and approaches with the focus toward interviews; the “Do’s” and “Don’ts” during interviews; bias in data collection; participatory review; and translation of the questionnaire into Kiswahili and back translation. The training also covered ethical considerations, including introductions and consent seeking before commencing interviews, the rights of the respondents to leave the evaluation process anytime, and the fact that the respondents’ participation was voluntary. The confidentiality of the respondents was also ensured.

Role playing was conducted by the team through pairing and peer critiquing. This was followed by a field pretest of the tool to two villages and revision of the tool based on field work results. Field data collection logistics, including sampling of households, roles and responsibilities of survey team members, and field travel schedule, were also discussed during the training.

#### **2.2.6 IMPLEMENTATION OF THE FIELD DATA COLLECTION**

Four survey teams, each consisting of three enumerators, a supervisor, and a driver, were constituted (**Table 4**). Field data collection was conducted simultaneously by the four teams, three of them departing for field work on Monday, 12 May 2014. The project without BCC team started field data collection in the afternoon of 13 May 2014 after going through training the previous day. Data collection was completed by all the teams on 20 May 2014.

Data quality control was emphasized during field work through structured review and verification of all questionnaires initially by team supervisors and finally by the overall team coordinator. Questionnaires with gaps or inconsistent responses were returned to the concerned enumerators for revision and data verification. The overall team coordinator visited all teams in the field, reviewing all questionnaires and sharing comments with individuals and teams to minimize errors in subsequent days of data collection. During such reviews, challenges noted in one team were promptly communicated to other team supervisors to share with their enumerators.

**Table 4: Field Data Collection Teams**

Team 1 Project + BCC (Kilombero/Mvomero)	Team 2 Project + BCC (Kiteto/Kongwa)	Team 3 “Project with no BCC” (Zanzibar)	Team 4 Control (Babati District, Manyara Region)
1. Mwajuma 2. Chris 3. Shadrack 4. Hectory Chibele – Team Supervisor	1. Angelina 2. Sam 3. Godfrey 4. Wulystan Mtega – Team Supervisor	1. Mwanaisha 2. Fatma 3. Abdalla 4. Hiyana Nasoro – Team Supervisor	1. Oswald 2. Crispin 3. Selina 4. Ferdinand Mgaya – Team Supervisor
Gilbert Aluoch – Overall field work coordination			

### **2.2.7 DATA PROCESSING**

Final review of all completed questionnaires was done by the team supervisors before sharing with the overall evaluation coordinator. Once verified, the completed questionnaires were submitted to two Data Entry Officers, who commenced data entry in Excel data files from 16 May 2014. Once data entry was complete, data cleaning was undertaken with the help of NAFAKA project Data Manager before finally exporting the data into SPSS software, version 22, for analysis.

To protect the privacy of the farmers and the confidentiality of their information, the data was analyzed in the aggregate form with no personal information entered into the data files. The data files are stored in Danya’s data storage system and password-protected. Access to the data is closely restricted to the evaluation team.

### **2.3 STUDY LIMITATIONS**

- The study was relying on self-reporting. Self-report data has some disadvantages, specifically with regard to validity. For example, respondents are not always truthful (because he/she may want to please the evaluator with a positive response or may be embarrassed about a negative response) or may perceive reality differently from that of the evaluation parameters. Furthermore, the respondent may not fully understand the question being posed and may not answer correctly.
- Impact analysis through the use of control groups is possible, but impact cannot be attributed solely to BCC interventions as farmers in sample groups accessed a number of other services and project interventions, such as demonstration plots, farmer field days, etc.
- Logistical challenges in selection of control groups with limited or non-exposure to project activities. Since radio is one of the main campaign strategies, it is possible that respondents may listen to radio campaign messages from other villages.
- Not all villages in the project intervention areas that received BCC had the same chance of being randomly selected due to inaccessibility. Villages in Mlimba cluster in Kilombero District could not be sampled due to the poor road conditions and rainy conditions during field data collection.
- The introduction of some new variables in the follow-up survey questionnaire means that the level of significance of the improvement for some of the variables between the initial and follow-up evaluations cannot be done.

### 3. FINDINGS AND DISCUSSIONS

The presentation of the findings is organized as follows: Respondents' distributions and demographics followed by the overall NAFAKA BCC campaigns' findings. This is followed by BCC media-specific findings, print materials and radio messages, and then communication channels.

Results of four key BCC variables<sup>2</sup> are presented for the overall campaigns' findings followed by findings of specific media campaigns, radio, and print materials.

#### 3.1 RESPONDENTS' DISTRIBUTION DEMOGRAPHICS

The follow-up evaluation covered 323 respondents from 34 villages in seven districts within five regions. The regions covered were Morogoro, Dodoma, and Manyara in Tanzania mainland and North and Mjini Magharib in Zanzibar Island. Of these respondents, 38.1 percent were from Manyara, 21.1 percent from Morogoro, 8.7 percent from Dodoma, and the remaining 32.2 percent from the Zanzibar region (**Table 5**).

**Table 5: Distribution of Respondents by Region and District**

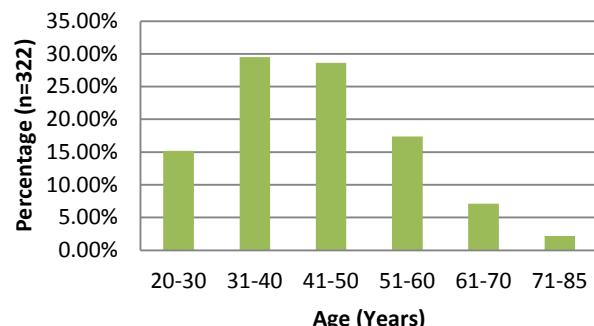
Region	Percent (n=323)	District	Percent (n=323)
Morogoro	20.7%	Kilombero	13.9%
		Mvomero	6.8%
Manyara	38.1%	Kiteto	5.3%
		Babati	32.8%
Dodoma	9.0%	Kongwa	9.0%
Mjini Magharibi	18.3%	Maghrib	18.3%
North	13.9%	North A	7.4%
		North B	6.5%

On average, 34.7 percent of the respondents were from the project areas that had received BCC interventions, five villages in Morogoro, Manyara, and Dodoma Regions; 32.2 percent were from project areas with no BCC interventions from Zanzibar Island. The remaining 32.8 percent were sampled from Manyara Region but in an area with neither project implementation nor BCC interventions.

Respondents from 34 villages participated in the follow-up survey. The largest percentages of respondents were from Makawa (8.7%), and Namawala, Vilima Vitatu, and Mgudeni (each accounting for 7.1%).

In the follow-up survey, female respondents accounted for 54.8 percent of the farmers who completed the survey, while male respondents accounted for 45.2 percent. Among the 322 respondents who provided information on their age, the youngest was 20 and the oldest was 80 years old. Of the respondents, 44.7 percent were between the age of 20 and 40, and the rest were between the age of 41 and 80 years (**Figure 1**).

**Figure 1: Respondents Age Distribution**



<sup>2</sup> 1. Aware/seen/heard; 2. Recall/remember; 3. Believe; 4. Adopt/practice.

The majority of respondents were married (81.4%), and the rest were single (8.7%), divorced (4.0%), or widowed (5.9%).

In terms of the highest level of education attained, about two thirds (66.3%) had primary education, while 16.4 percent had secondary education. Only 1.9 percent had college education, while 12.7 percent had no education. In regard to the main occupation of the respondents, 93.2 percent were in crop production. A small number of people whose main occupation was other than crop production included those in business (4.6%) and teachers (0.9%). The rest reported to be livestock keepers, fishermen, and civil servants.

To the question on position in association or group membership, 45.2 percent reported that they were ordinary group members, 5.3 percent reported that they were lead farmers or Village-Based Agricultural Advisors (VBAAs), and 3.4 percent reported that they were chairpersons (**Table 6**).

**Table 6: Respondent's Position in Group or Association**

Position of Respondent in Group	Percent (n=323)
Ordinary group member	45.2%
Non-member of project group	41.5%
Lead farmers or VBAAs	5.3%
Other group official	4.6%
Group chairperson	3.4%

However, among the respondents in the project area who received BCC interventions (n=113), 59.3 percent were ordinary NAFAKA project group/association members; 17.7 percent were non-group/association members, 7.1 percent were other group officials, 5.3 percent group chairpersons with the rest being Lead farmers or VBAAs.

## 3.2 NAFAKA BCC OVERALL CAMPAIGNS FINDINGS

Results of this follow-up evaluation for the BCC campaigns are presented in two categories: primary and secondary. The four behaviors from the first and second campaigns on “Use of certified seeds,” “Appropriate use of fertilizers,” “Use of storage facilities,” and “Joint sale of farm produce” form the primary category. Results for the other five behaviors, most of which were introduced during the third campaign radio talk shows, are grouped under “secondary.” Being the common factors in the two evaluations, only data for primary-level indicators have been used for comparisons of significance levels between initial and follow-up evaluations.

### 3.2.1 AWARENESS OF BCC CAMPAIGN MESSAGES

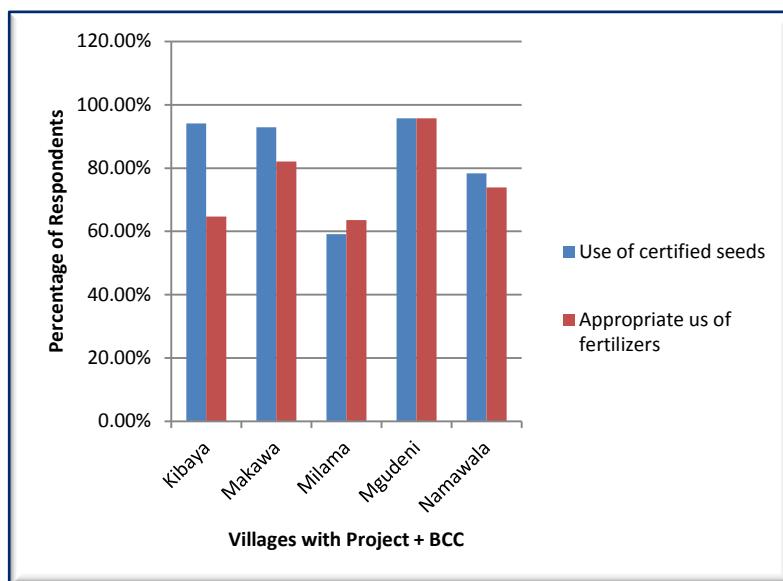
During the follow-up evaluation, 84.1 percent of the respondents in the project + BCC group indicated that they were *aware* of the “use of certified seeds” campaign. Therefore, the highest number of respondents reached with BCC campaign messages was about 585,340 people in the project target districts (**Table 7**). The awareness level was even higher when analyzed by village. Mgudeni Village in Mangula cluster, Kilombero District reported 95.7 percent awareness for the two campaigns; the use of certified seeds and appropriate use of fertilizers was reported (**Figure 2**).

When results of the initial and follow-up evaluations are compared, there is significant improvement in the follow-up evaluation on awareness of the campaign on the use of certified seeds and fertilizers through print materials “in the initial (48.9%) vs. awareness of the BCC campaigns on the use of certified seeds” in the project + BCC group (84.1%) {P <0.0001 ( $\chi^2=42.68$ )}.

**Table 7: Percent of Respondents Aware of the BCC Campaigns (n=323)**

NAFAKA BCC Campaign	Percent Aware of the Campaign in:					
	Project + BCC (n=113)		Project No BCC (n=104)		Control (n=106)	
	Yes	No	Yes	No	Yes	No
Use of certified seeds	84.1%	15.9%	1.9%	98.1%	0%	100%
Appropriate use of fertilizers	77.0%	23.0%	1.0%	99.0%	0%	100%
Use of storage facilities	68.1%	31.9%	1.0%	99.0%	0%	100%
Joint sale of farm produce	64.6%	35.4%	0%	100%	0%	100%
Line/space planting	80.5%	19.5%	1.0%	99.0%	0%	100%
Weeding/weed management/herbicide and insecticide application	69.0%	31.0%	1.0%	99.0%	0%	100%
Early farm operations, including land preparation	75.2%	24.8%	1.0%	99.0%	0.9%	99.1%
Relying on agriculture experts	67.3%	32.7%	1.0%	99.0%	0%	100%
Sources of farm inputs (agro-dealers, etc.)	61.9%	38.1%	1.0%	99.0%	0%	100%

**Figure 2: Percent of Respondents in Project + BCC Villages Aware of Two BCC Campaigns**



Significant improvement on awareness was also recorded in the campaigns on “Use of certified seeds and fertilizers through print materials” in the initial (48.9%, n=333) vs. “appropriate use of fertilizers” in the project + BCC group (77.0%) {P <0.0001 ( $\chi^2=26.93$ )} and “use of storage facilities and joint selling of crop produce through print materials” (37.8%) vs. “Use of storage facilities” (68.1%) in the follow-up evaluation {P <0.0001 ( $\chi^2=31.24$ )}.

Therefore, a significant improvement was noted between the initial versus the follow-up evaluation in all of the four primary campaign behaviors.

The importance of receiving BCC campaign messages through the radio was confirmed since radio was reported as the main source of the project’s BCC campaign messages. An average of 43.6 percent of the respondents across the four primary campaigns cited radio as their main source compared to an average of 29.2 percent who cited print materials as their source of BCC message awareness (Table 8).

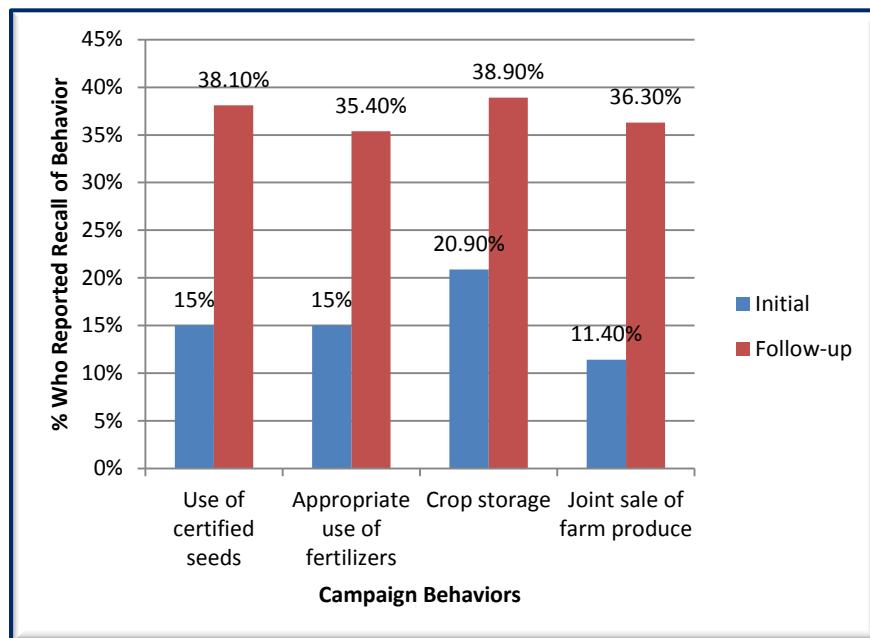
**Table 8: Sources of BCC Campaign Messages**

NAFAKA BCC Campaign	Sources of campaign messages for Project + BCC respondents (n=113)	
	Radio	Print Materials (posters/T-shirts)
Use of certified seeds	52.2%	31.0%
Appropriate use of fertilizers	44.2%	32.7%
Use of storage facilities	38.1%	30.1%
Joint sale of farm produce	39.8%	23.0%
Line/space planting	41.6%	38.9%
Weeding/weed management/herbicide and insecticide application	44.2%	24.8%
Early farm operations, including land preparation	51.3%	23.9%
Relying on agriculture experts	51.3%	15.9%
Sources of farm inputs (agro-dealers, etc.)	42.5%	18.6%

### 3.2.2 RECALL OF BCC CAMPAIGN MESSAGES

During the follow-up evaluation, as reflected in **Figure 3**, 74.3 percent reported that they could *remember* the BCC campaign radio messages. However, among the project + BCC villages, Mgudeni (95.7%) reported the highest rate of recall, followed by Makawa (78.6%), Namawala (73.9%), and Kibaya (64.7%), with Milama in Mvomero District recording the lowest (54.5%).

**Figure 3: Comparison of Behavior “Recall” Rates Between Initial Versus Follow-up Evaluations**

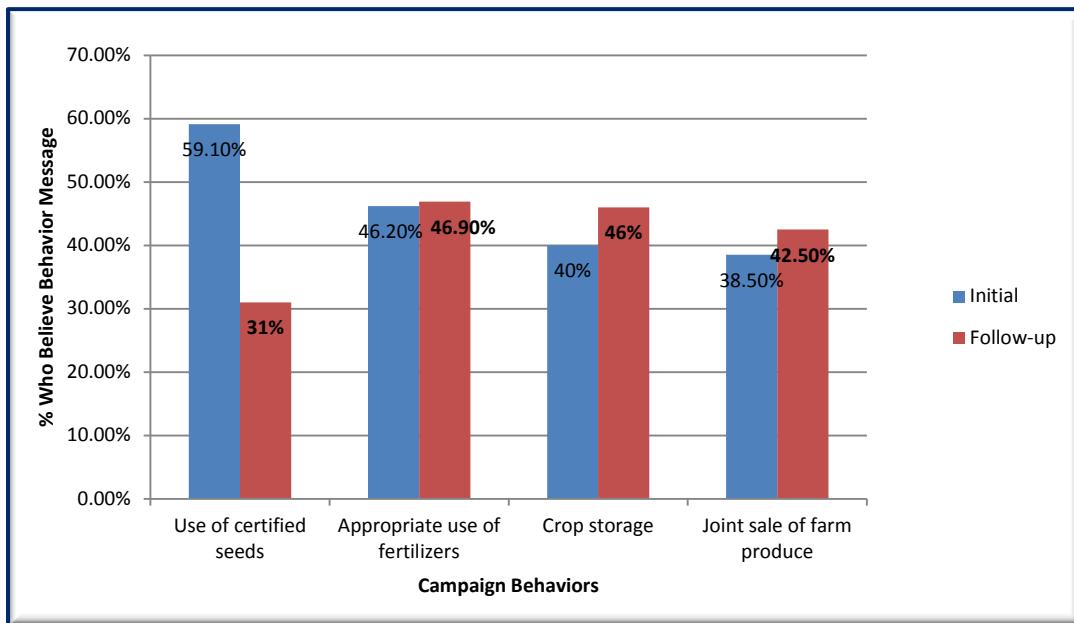


### 3.2.3 BELIEVING BCC CAMPAIGN MESSAGES

During the follow-up evaluation, 46.9 percent of respondents reported that they believed the BCC campaign messages (**Figure 4**). However, in terms of individual behaviors, Kibaya Village reported the highest (76.5%) among those who

believed the BCC campaign messages. Mgudeni reported 47.8 percent and Milama reported 31.8 percent, among the respondents who believed some of the BCC campaign messages.

**Figure 4: Comparison of Behavior “Believe” Rates Between Initial Versus Follow-up Evaluations**



### 3.2.4 FOLLOWING ADVICE/ADOPTION OF BCC CAMPAIGN MESSAGES

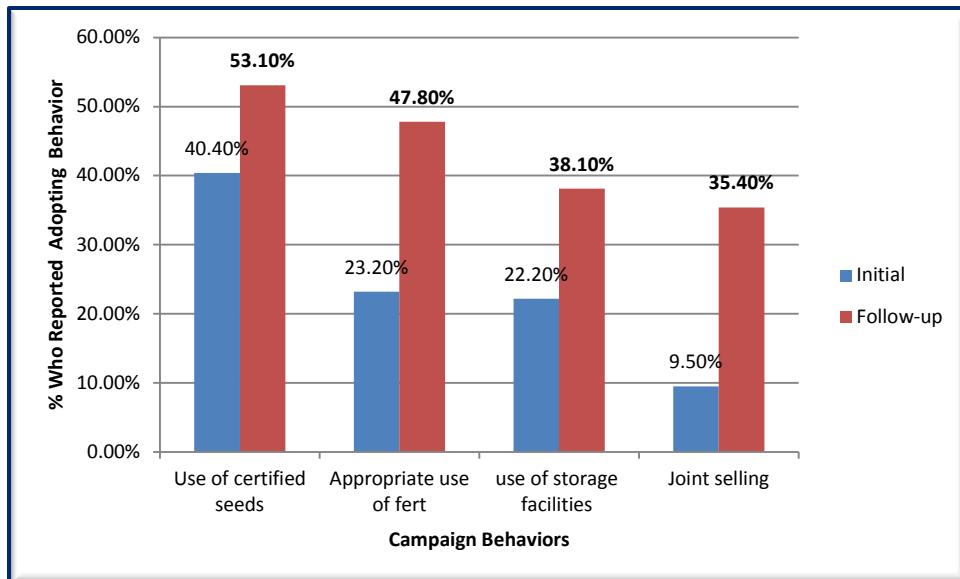
About 393,934, or 67.3 percent of farmers in the target project districts who were reached with BCC campaigns, reported to have adopted different GAPs or technologies as a result of the project’s BCC messages.

Use of certified seeds (53.1%) had the highest adoption rates among the GAPs promoted by the project. Appropriate use of fertilizers was reported by 47.8 percent, use of storage facilities reported 38.1 percent, while joint sale of farm produce was reported to have been adopted by 35.4 percent of the respondents.

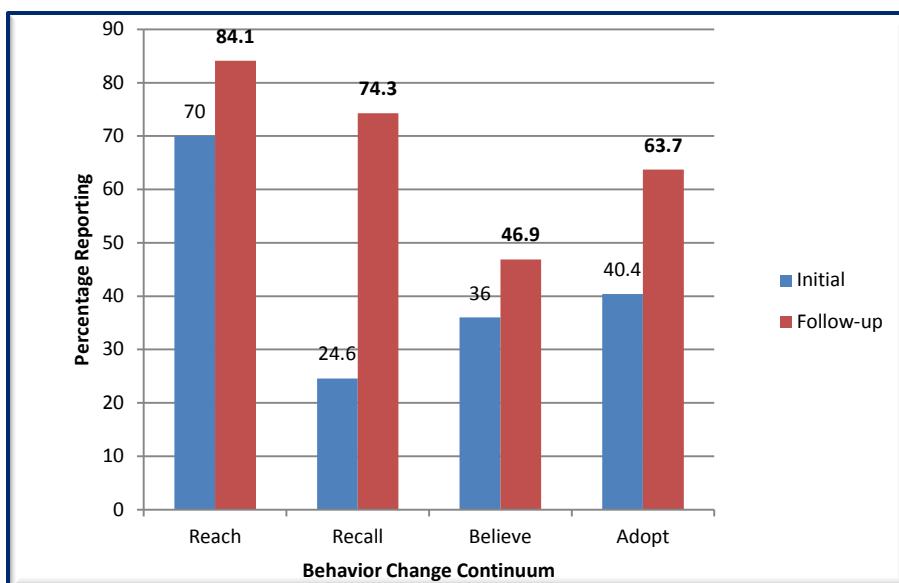
Therefore, in comparison, “Percent of respondents following advice (**adopting**) of the BCC campaign messages” in the Initial (15.0%) vs. “Percent of respondents following the advice of the BCC campaign messages in the project + BCC group in the follow-up evaluation (63.7%) shows a significant improvement in the follow-up evaluation { $P < 0.0001$  ( $\chi^2=100.7$ )}.

**Figure 5** shows comparison of adoption rates of the four primary behaviors during the initial and follow-up evaluations. **Figure 6** shows the behavior change continuum trends between the initial and follow-up evaluations. **Table 9** presents the population of farmers reached within the behavior change continuum for the four behaviors during the follow-up evaluation. In both **Figure 6** and **Table 9**, recall, believe and adoption data are based on the totals reached.

**Figure 5: Comparison of Behavior Adoption Rates Between Initial Versus Follow-up Evaluations**



**Figure 6: Behavior Change Continuum Trends Between Initial and Follow-up Evaluations**



**Table 9: Summary of Behavior Change Continuum Trends During Follow-up Evaluation**

BCC Campaign	Awareness/ Seen/Heard	Remember/ Recall	Believe	Adopted
Use of certified seeds	585,340 (84.1%)	223,014 (38.1%)	258,720 (44.2%)	310,816 (53.1%)
Appropriate use of fertilizers	535,923 (77.0%)	189,716 (35.4%)	251,347 (46.9%)	256,171 (47.8%)
Crop storage	473,979 (68.1%)	118,020 (24.9%)	218,030 (46.0%)	180,586 (38.1%)
Joint sale of farm produce	449,619 (64.6%)	39,566 (8.8%)	191,088 (42.5%)	159,165 (35.4%)

### 3.3 NAFAKA BCC CAMPAIGN MATERIALS' SPECIFIC FINDINGS

#### 3.3.1 NAFAKA BCC PRINT MATERIALS CAMPAIGNS

So far, NAFAKA project has used posters and T-shirts as the print materials during its first three BCC campaigns. Posters have been used during all of the three campaigns, while T-shirts have been used only during the first inputs' campaigns conducted from December 2012 to February 2013.

##### 3.3.3.1 EVER SEEN BCC CAMPAIGN MATERIALS

An average of 43.0 percent of respondents in the Project + BCC villages confirmed to have **seen** BCC campaign print materials, 47.8 percent of the respondents indicated that they had seen campaign materials on crop storage, 45.1 percent on appropriate use of fertilizers, and 41.6 percent on joint sale of farm produce (**Table 10**).

In terms of sources of the information (BCC print materials), the five main sources cited in order of importance across all the campaigns in order of preference were as follows:

- Association or group officials
- At group, community, or village offices
- Agro-dealer shops
- VBAAs
- Owned by the respondents

**Table 10: Percent of Respondents Ever Seen Campaign Materials in Project +BCC Villages**

BCC Campaign	Percent Ever Seen Campaign Material (n=113)
Posters on use of certified seeds	37.6%
Appropriate use of fertilizers	45.1%
Posters on crop storage	47.8%
Posters on joint sale of farm produce	41.6%

##### 3.3.3.2 BCC PRINT MATERIALS' CAMPAIGN MESSAGES RECALL

Of the primary campaigns, use of certified seeds (38.1%) recorded the highest number of respondents who could **remember** the campaign messages. This was closely followed by appropriate use of fertilizers (35.4%), while messages on "Joint sale of farm produce" could be recalled by 8.8 percent of respondents (**Table 11**).

As to what messages they could remember, several messages could be remembered, including the following: "Sema nami kubusu pembejo" and "Mbegu bora, mavuno bora, masoko bora." Others reported: "Mbegu bora kwa mstari mbolea"; "Wakulima, tuijunge na kilimo bora cha mahindi sasa"; and "Ukilima hiri, utapata hiri."

**Table 11: Percentage of Respondents Who Could Remember BCC Campaign Material Messages**

BCC Campaign	Percent Who Remember Campaign Material Messages (n=113)
Use of certified seeds	38.1%
Appropriate use of fertilizers	35.4%
Crop storage	24.9%
Joint sale of farm produce	8.8%

### 3.3.3.3 BELIEVING BCC PRINT MATERIALS' CAMPAIGN MESSAGES

Respondents were asked whether they **believed** the BCC campaign messages from the past BCC campaign print materials. **Table 12** presents the percentages of respondents who believed campaign messages.

**Table 12: Percentage of Respondents Who Believed BCC Campaign Material Messages**

BCC Campaign	Percent Who <i>Believed</i> Campaign Material Messages (n=113)
Use of certified seeds	44.2%
Appropriate use of fertilizers	46.9%
Crop storage	46.0%
Joint sale of farm produce	42.5%

Significant improvements were recorded in the follow-up evaluation among those who believed BCC campaign messages. Percent of respondents who believed the BCC campaign messages from posters on crop storage in the initial evaluation (26.7%) vs. “Percent of respondents who believed the BCC campaign messages from posters on crop storage” in the BCC + group in the follow-up (46.0%) showed a significant improvement {P <0.001 ( $\chi^2=14.52$ )}.

Another significant improvement {P <0.001 ( $\chi^2=11.13$ )} in the follow-up evaluation was recorded among “Percent of respondents who **believed** the BCC campaign messages from posters on joint sale of farm produce” in the initial (25.8%) vs. percent of respondents **believing** in BCC messages from posters on joint sale of farm produce” in the Project + BCC group in the follow-up (42.5%).

As to the reasons for **not believing** the BCC campaign messages, lack of training in agriculture was reported by 23.0 percent, low knowledge or lack of understanding of GAPs by 14.2 percent. Others reported that they don't know the benefits of agriculture (8%), with some reporting that they did not believe that agriculture could change their lives. Details on the reasons for not believing the messages are presented in **Table 13**.

**Table 13: Reasons for Not Believing the BCC Campaign Materials Messages**

Reasons for Not Believing	Percent (n=113)
Low understanding/low knowledge on GAPs	14.2%
Don't remember	5.3%
Lack of training or education in agriculture	23.0%
No reason	22.1%
Lack of capital	10.6%
Don't know benefits of agriculture	8.0%
Low literacy	4.5%
Never had the chance to try	2.7%
Fertilizer spoil soil fertility	1.8%
People like action and not only words	2.4%
Time consuming	1.8%
Don't have a warehouse	0.9%
So hard, difficult to practice	0.9%
Don't believe agriculture can change my life	0.9%
Discouraged by climatic changes	0.9%

### **3.3.3.4 FOLLOWING ADVICE OF BCC PRINT MATERIALS' CAMPAIGN MESSAGES**

Of the respondents in the Project + BCC interventions group, 38.9 percent reported that they followed the advice from posters on certified seeds, fertilizer application, and line planting of maize, while 27.4 percent reported to have followed advice of posters on certified seeds, fertilizer application, and line planting of rice.

To the question “What is the one thing that could additionally be done to convince farmers to follow the advice of such campaign messages?,” 32.7 percent of the respondents in the Project + BCC group indicated that they “Need more agriculture education or training”; 17.7 percent suggested that they “Need more sensitizations and radio campaigns, including more training through radio”; and 8.0 percent suggested “More village campaigns.”

In the Project with no BCC group, 23.1 percent of the respondents indicated that they “need more agriculture education training,” 18.3 percent of them suggested that they “need more agriculture education training and visits by experts,” and 13.5 percent of them suggested that they “need more sensitizations and radio campaigns for more training through radio” (**Table 14**).

**Table 14: Additional Steps That Can Convince Farmers to Follow Advice of BCC Campaign Messages**

Additional Activities Suggested by Respondents to Convince Farmers to Follow the Advice of BCC Campaign Messages From Print Materials	Percent (BCC + n = 113)	Percent (BCC; n = 104)	Percent (Control; n = 106)
Facilitate access to loans for farmers	0.9%	1.0%	0%
Emphasize more farmer field days and more education through demo plots	4.4%	9.6%	0%
Establish more demo plots at farmer field schools	6.2%	8.7%	0%
Help form farmer groups	0.9%	1.9%	0%
Determine if market is available for farm produce	2.7%	0.0%	0%
Increase frequency of radio announcements	4.4%	1.0%	0%
Invite non-members in farmer group meetings	3.5%	1.0%	0%
Need more village campaigns	8.0%	6.7%	0%
Need more agriculture education training	32.7%	23.1%	0%
Need more agriculture education training visits by experts	6.2%	18.3%	0%
Need more posters to be stuck everywhere	0.9%	0%	0%
Need more sensitizations through radio campaigns and more training through radio	17.7%	13.5%	0%
No	7.1%		
Timely agricultural inputs	2.7%	5.8%	0%
Government involvement	0%	2.9%	
More training to group leaders	0%	0%	0.9%
Uses the ones who have believed as model farmers	1.8%	0%	0%

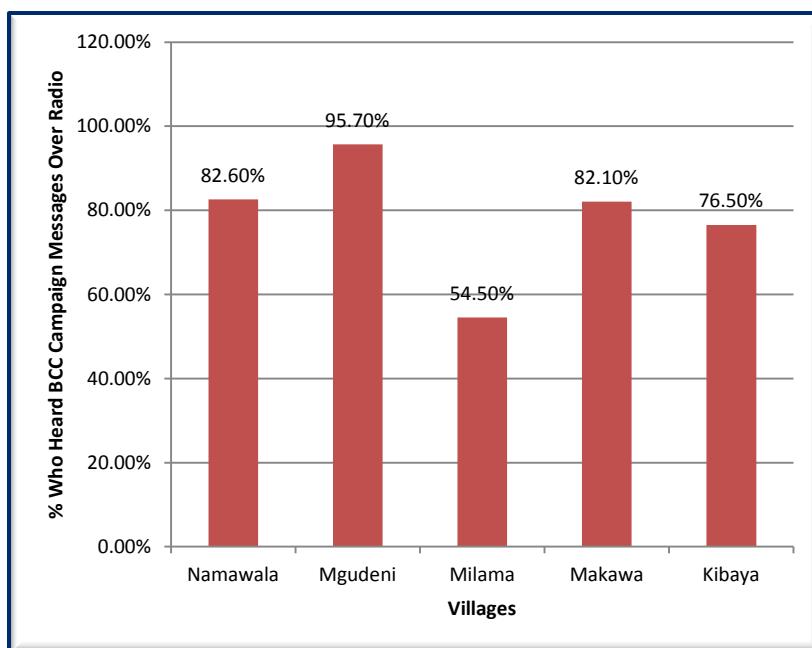
### **3.3.4 NAFAKA BCC RADIO CAMPAIGNS**

#### **3.3.4.1 EVER HEARD NAFAKA BCC RADIO CAMPAIGNS**

Of the respondents in the Project+BCC group, 78.8 percent indicated that they had **heard** NAFAKA project-related message(s) on the radio. Only 1.0 percent of the respondents in the Project without BCC group and 0.9 percent in control indicated that they had heard NAFAKA project-related message(s) on the radio.

Mgudeni Village in Mangula cluster of Kilombero District reported the highest number of respondents who heard project BCC campaign messages over the radio (95.7%), while Milama Village in Mvomero cluster (54.5%) reported the lowest (**Figure 7**).

**Figure 7: Respondents Who Heard NAFAKA BCC Campaign Messages Over Radio by Village**



“Percent who **heard** NAFAKA BCC campaign messages on the radio” in the initial (38.1%) vs. percent of respondents having heard NAFAKA BCC campaign messages on the radio in the Project + BCC group in the follow-up (78.8%) shows a significant improvement in the follow-up evaluation { $P < 0.0001$  ( $\chi^2=55.74$ )}. The project must have intensified the sensitization of groups on its use of radio to disseminate GAP messages.

Although the project used only radio announcements during the first two campaigns, radio talk shows were introduced during the third campaign. Therefore, when asked to confirm the type/style of messages they heard, 55.8 percent in the Project +BCC group reported that they had heard radio announcements, 15.9 percent reported that they heard the messages from radio talk shows, and 7.1 percent said they heard both. Only very few people in the Project without BCC and in control groups reported to have heard the BCC radio announcements. However, on further interrogations, they reported that they had heard the BCC messages while residing outside their villages.

When asked on which radio station they heard the NAFAKA messages, 31.0 percent in the Project + BCC group cited Ulanga FM, 22.1 percent of them heard from Radio Mwangaza, and 20.4 percent heard it from Abood FM (**Table 15**).

**Table 15: Radio Stations From Which Respondents Heard NAFAKA Messages**

Radio Station Name	Percent (n=113)
Abood FM	20.4%
Radio Ulanga	31.0%
Radio Mwangaza	22.1%
Pambazuko FM	1.8%
TBC Radio	0.9%
None	21.2%

Respondents reported that they heard the BCC radio campaign messages in January, February, March, and April 2014, as well as the earlier campaigns in 2013.

#### **3.3.4.2 RECALL BCC RADIO CAMPAIGN MESSAGES**

Of the respondents in the Project + BCC villages who heard the radio campaign messages, 74.3 percent indicated that they could **remember** the radio campaign messages. However, in terms of the BCC campaign villages sampled, Mgudeni (95.7%) recorded the highest followed by Makawa with 78.6 percent, while Milama reporting 54.5 percent had the lowest.

#### **3.3.4.3 FOLLOWED ADVICE FROM BCC RADIO CAMPAIGN MESSAGES**

When asked whether they followed the advice of the NAFAKA project BCC radio campaign messages, 63.7 percent indicated that they **followed** the advice of the radio messages. Details of the GAPs adopted as a result of listening to the BCC radio campaign messages are presented in **Table 16**.

**Table 16: Percent of Respondents Who Adopted Certain Farming Practices Following BCC Radio Campaign Announcements**

GAPs Adopted:	Percent Who Adopted Practice in:		
	Project + BCC (n=113)	Project Without BCC (n=104)	Control (n=106)
Use of certified seeds	53.1%	1.0%	0.9%
Appropriate use of fertilizers	47.8%	1.0%	0.9%
Use of storage facilities	38.1%	0%	0.9%
Joint selling of crop produce	35.4%	0%	0%
Line/space planting	49.6%	1.0%	0.9%
Weed management/herbicide and insecticide application	51.3%	1.0%	0%
Early farm operations, including land preparation	51.3%	1.0%	0%
Relying on agriculture experts	51.3%	1.0%	0.9%
Using sources of farm inputs	46.0%	1.0%	0%

“Adoption of the use of certified seeds as a result of following the BCC campaigns’ messages” in the initial (30.3%) vs. “percent of respondents adopting the use of certified seeds as a result of listening to the BCC radio campaign announcements” in the Project + BCC group in the follow-up (53.1%) shows a significant improvement in the follow-up evaluation {P <0.0001 ( $\chi^2=18.96$ )}. Also showing a significant improvement in the follow-up evaluation was the “Adoption of appropriate use of fertilizers as a result of the following BCC campaigns (radio/print materials) messages” in the initial (16.8%) vs. “percent of respondents adopting appropriate use of fertilizers as a result of listening to the BCC radio campaign announcements” in the Project + BCC group in the follow-up (47.8%) {P <0.0001 ( $\chi^2=43.55$ )}.

**Table 17: Percent of Respondents Who Adopted Certain Farming Practices Following BCC Radio Campaign Talk-Shows**

GAPs Adopted	Percent Who Adopted Practice in:		
	Project+ BCC (n=113)	Project without BCC (n=104)	Control (n=106)
Rice/maize planting and input application	21.2%	0%	1.9%
Group/Association formation and leadership	21.2%	0%	0%
Access to finance	10.6%	0%	0%

GAPs Adopted	Percent Who Adopted Practice in:		
	Project+ BCC (n=113)	Project without BCC (n=104)	Control (n=106)
Post-harvest and market linkages	15.9%	0%	0.9%
Attending demo plots	23.0%	0%	0.9%
Women in agriculture	6.2%	0%	0.9%
Weeds and insect management/herbicide application	22.1%	0%	0.9%

Among the respondents who did not follow the advice (**adopt**) from any of the radio campaign messages, 70.8 percent of the respondents in the Project + BCC group indicated that they did not know and 15.9 percent said that they did not hear NAFAKA radio announcement talk shows (**Table 18**).

**Table 18: Main Reasons for Not Following the Advice of the Radio Campaign Messages**

Reasons for Not Following the Advice of the Radio Campaign Messages	Percent (BCC + n = 113)	Percent (BCC (n = 104)	Percent (Control; n = 106)
Did not hear NAFAKA radio announcement/talk show	15.9%	28.8%	0%
Don't know/have a reason	70.8%		
Don't listen to farming programs	3.5%	1.0%	0%
No	6.2%	25.0%	12.3%
No interests in the messages	1.8%	0%	0%
Poor radio reception	1.8%	1.0%	0%

### 3.4 THE ASSOCIATION BETWEEN RESPONDENT POSITION IN A GROUP AND GAP ADOPTION RATES

The data in **Table 19** suggests that the position of the respondents is associated with the adoption rates of GAPs as a result of listening to the BCC radio campaign announcements. The “Lead Farmers” position has a much higher rate of adoption (46.4%), followed by “Group Chairpersons” (34.4%) and “Project Members” (23.1%). As expected, Non-Project Members have the lowest adoption rate (4.4%). The difference is very clearly seen in terms of the adoption rates of GAPs as a result of listening to the BCC radio campaign announcements.

**Table 19: Adoption Rates of GAP from Radio Campaigns**

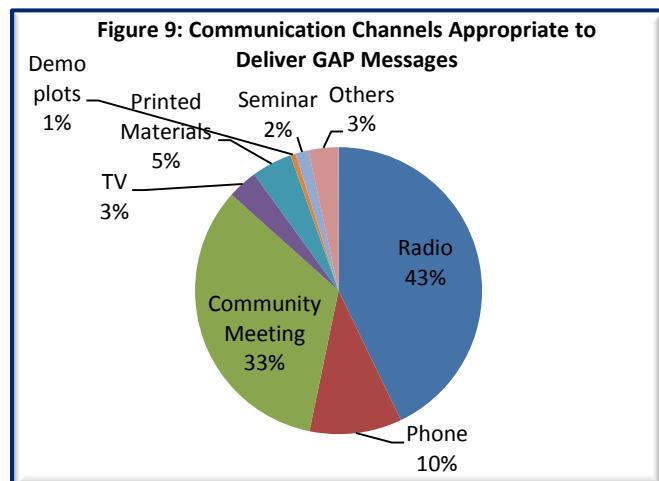
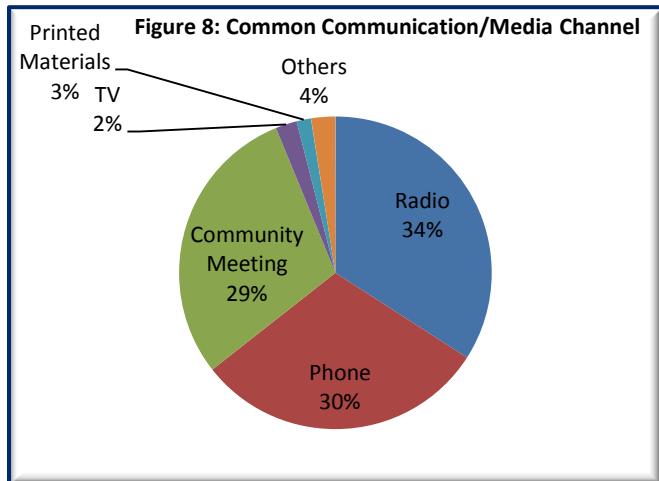
Member Position in Group	Use of Certified Seeds	Appropriate Use of Fertilizers	Use of Storage Facilities	Joint Selling of Crop Produce	Line/Space Planting	Weeding/Weed Management	Early Farm Operations	Relying on Agriculture Experts	Source of Farm Inputs	Average Adoption Rate
Lead Farmers	52.9%	52.9%	41.2%	35.3%	52.9%	47.1%	52.9%	47.1%	35.3%	46.4%
Group Chairs	36.4%	36.4%	27.3%	27.3%	36.4%	36.4%	36.4%	36.4%	36.4%	34.4%
Ordinary Group Member	26.0%	23.3%	17.8%	17.1%	24.0%	26.0%	25.3%	24.7%	23.3%	23.1%
Other Group Official	26.7%	26.7%	20.0%	13.3%	26.7%	26.7%	13.3%	26.7%	20.0%	22.2%
Non-Member	5.2%	3.7%	3.7%	2.9%	4.5%	3.7%	6.0%	5.2%	4.5%	4.4%

The data also suggests that the position of the respondents is associated with the adoption rates of GAPs as a result of listening to the BCC radio talk show(s). But the radio talk shows seemed to have a smaller effect compared with the radio campaign announcements. This could be the result of a selected group listening to radio talk shows. The “Group Chairpersons” had the highest rate of adoption (16.9%), followed by “Lead Farmers” (14.3%) and “Other Group Officials” (10.5%). As expected, Non-Project Members had the lowest adoption rate, while “Project Members” had an adoption rate of 7.6 percent.

### 3.5 COMMUNICATION CHANNELS

The most common type of communication channel was radio (34.1%), closely followed by phone (30.3%) and community meetings (29.4%), as shown in **Figure 8**. However, 43.3 percent indicated that radio was also the most appropriate communication/media channel for delivering/receiving GAP messages, which was followed by community meetings (33.7%) and phone (10.5%) (**Figure 9**).

However, 63.7 percent of respondents in the project intervention with BCC reported that radio is the most important media for disseminating GAP messages. This was followed by community meetings (16.8%), printed materials (9%), and phones (3%).



#### 3.5.1 RADIO OWNERSHIP

An average of 77.1 percent of respondents across the study area owned a working radio at home. Of the respondents in the Project + BCC group, 84.1 percent reported that they owned a working radio, 62.4 percent of the respondents in the Project without BCC group owned a working radio, and 82.1 percent of the respondents in the control group owned a working radio. However, among those who did not own a working radio, 61.1 percent had access to a working radio somewhere else on a regular basis in the Project + BCC group, 27.0 percent in the Project without BCC group, and 21.0 percent of those who did not own a working radio had access to a working radio somewhere else on a regular basis in the control group.

#### 3.5.2 PREFERRED RADIO STATION

Among the 19 radio stations reported, Ulanga FM (31.0%), Abood FM (24.8%), and Radio Mwangaza (19.5%) were the top three favorite among the Project + BCC group. Of the respondents in the same group, 6.2 percent did not have any favorite radio station. The Zanzibar Broadcasting Corporation (ZBC) radio (44.2%), Radio Noor (23.1%), and Bomba FM (2.9%) were the radio stations of choice among the Project without BCC group. In the control area,

Radio Free Africa (RFA), cited by 48.1 percent; Tanzania Broadcasting Corporation (TBC) radio (14.2%); and Clouds FM (5.7%) were the preferred radio stations (**Table 20**).

**Table 20: Respondents' Favorite Radio Stations**

Favorite Radio Station	Study Group		
	Project+ BCC (n=113)	Project Without BCC (n=104)	Control (n=106)
Abood FM	24.8%	0%	0%
Pambazuko FM	5.3%	0%	0%
RFA	0.9%	0%	48.1%
Radio Mwangaza	19.5%	0%	0%
Ulanga FM	31.0%	0%	0%
TBC Radio	6.2%	0%	14.2%
Nyemo Radio	0.9%	0%	0%
Clouds FM	0%	0%	5.7%
Radio Noor	0%	23.1%	0%
Dodoma FM	0.9%	0%	0%
Bomba FM	0%	2.9%	0%
ZBC	0%	44.2%	0%
Sauti ya Injili	0%	0%	1.9%
Radio One	0.9%	1.0%	10.4%
Radio Top	1.8%	0%	0%
Radio Maria	1.8%	1.0%	4.7%
Iman	0%	1.0%	0%
Radio Safina	0%	0%	0.9%
Radio Adhana	0%	1.0%	0%
None	6.2%	26.0%	14.2%

Several reasons were given for favoring/preferring the radio stations. Of the respondents in the Project + BCC group, 33.6 percent indicated that the station they selected “has many farming/agriculture programs” and 16.8 percent of the respondents indicated that the station they selected has “good reception and easy access.” In the Project without BCC group, 33.7 percent of the respondents indicated that the station they selected “has many news programs,” and 15.4 percent indicated that the station they selected has “Islamic teachings news.” In the control group, 37.7 percent of the respondents indicated that the station they selected has “good reception and easy access.” and 24.5 percent indicated that the station they selected “has many news programs.” Details of the other reasons given are presented in **Table 21**.

**Table 21: Respondents Reasons for Favoring Their Radio Stations**

Reasons for Favoring Radio Station	Study Group		
	Project+ BCC (N=113)	Project Without BCC (n=104)	Control (n=106)
Good network coverage	13.3%	1.0%	0.9%
Has many farming/agriculture programs	33.6%	2.9%	12.3%
Has many news programs	13.3%	33.7%	24.5%
Good reception/easy access	16.8%	2.9%	37.7%
Broadcast agricultural market information	0.9%	0%	0.9%
Broadcast Islamic teachings and news	2.7%	15.4%	0%
Our district radio/only one available	1.8%	5.8%	0%
Broadcast educational programs/government information	1.8%	7.7%	3.8%
Popular with farmers	1.8%	0%	0%

Besides the favorite radio stations, respondents were asked to cite the radio station that is mostly received or had the best reception in their area. Of the respondents in the Project + BCC group, 32.7 percent selected Ulanga FM as the one with the best reception, 23.9 percent selected Aboot FM, and 21.2 percent selected Radio Mwangaza. In the Project without BCC group, 44.2 percent selected ZBC as the one with the best reception and 25.0 percent selected Radio Noor. In the control group, 56.6 percent selected RFA and 12.3 percent selected TBC Radio (**Table 22**).

**Table 22: Radio Station With the Best Reception**

Radio Station	Study Group		
	Project+ BCC (N=113)	Project Without BCC (n=104)	Control (n=106)
Aboot FM	23.9%	0%	0%
Pambazuko FM	3.5%	0%	0%
RFA	0.9%	0%	56.6%
Radio Mwangaza	21.2%	0%	0.9%
Ulanga FM	32.7%	0%	0%
TBC Radio	4.4%	1.0%	12.3%
Nyemo Radio	0.9%	0%	0%
Clouds FM	0%	0%	5.7%
Radio Noor	0%	25%	0%
Dodoma FM	0.9%	0%	0%
ZBC	0%	44.2%	0%
Sauti ya Injili	0.9%	0%	0%
Radio One	0.9%	0%	8.5%
Radio Top	0.9%	0%	0%
Iman	0%	1.0%	0%
Zenj	0%	2.9%	0%
None	6.2%	25%	14.2%

To the question “What is your popular radio programme?,” 42.5 percent of the respondents in the Project + BCC group selected Morning News as the most popular radio program and 8.0 percent selected “Greetings.” In the Project without BCC group, 34.6 percent selected “Morning News.” In the control group, 53.8 percent selected “Morning News” as the most popular radio program, and 3.8 percent selected “Morning Newspaper Analysis.”

DJ Duke was selected as the most popular radio presenter by 11.5 percent of the respondents in the Project + BCC group. Other popular presenters selected by the same group were Bibiana Parangu (10.5%) and Geoffrey Likanyaga (1.8%).

## 4. LESSONS LEARNED

Several lessons have been learned as a project in the implementation of BCC campaign interventions and the process of BCC interventions' evaluations. These lessons are discussed below.

The behavior change continuum of “Aware – Remember/Recall – Believe – Practice/Adoption” is normally not linear<sup>3</sup>. Some people reached (Aware) with BCC messages may recall the messages and adopt without necessarily believing; instead, hoping to believe once they have tried and seen results. Conversely, some respondents reached may not recall the messages during an evaluation but report adoption and believe in the messages.

Comparisons between results of the initial and the follow-up evaluations show significant improvements in most of the variables. However, two specific variables had no significant improvements between the two evaluations:

- “Percent of respondents who can **remember** campaign messages from the posters on joint sale of farm produce” in the initial (7.8%) vs. percent of respondents remembering main messages from posters on joint sale of farm produce in the Project + BCC group in the follow-up (8.8%) shows that there is no significant improvement in the follow-up survey { $P = 0.725$  ( $\chi^2 = 0.12$ )}. The “joint sale” campaign has been implemented only once during the second BCC campaign in July/August 2013. However, messages promoting positive behaviors for most of the other GAPs have been covered more than once during the three BCC campaigns, including radio talk shows either as a single behavior or jointly. Thus, for faster adoption, a behavior should be targeted with repeated campaigns over time.
- Percent of respondents following the advice (**adoption**) of the BCC campaign messages from “posters on certified seeds” in the initial survey (24.3%) vs. following the advice from posters on certified seeds, fertilizer application, and line planting of rice in the Project + BCC group in the follow-up (27.4%) also show no significant improvement in the follow-up survey { $P = 0.5$  ( $\chi^2 = 0.434$ )}. The first BCC campaign focused on the “Use of certified seeds and appropriate use of fertilizers,” the two behaviors assessed during the initial evaluation. However, the third BCC campaign included other behaviors in the same print materials, including line/space planting on the same posters. Additional information on the third campaign posters make comparison between the initial and follow-up evaluation variables difficult, a potential source of “no significance” in improvement. Therefore, for consistency and good comparisons, campaign messaging should be similar during different rounds.

The introduction of new variables in the follow-up survey questionnaire means that level of significance of the improvement for some of the variables between the initial and follow-up evaluations cannot be done.

Although radio talk shows are more interactive, the number of respondents who heard the BCC messages via the talk shows was fewer than through radio announcements. The project’s BCC team should share talk show schedules with groups/associations in advance for better results.

Although the distributions of the BCC print materials during the past three campaigns have been successfully implemented, there is still room for improvement. A clear distribution plan follow-up mechanism helps with adherence to a distribution plan.

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<sup>3</sup> Ideally the numbers who are **aware** should be fewer than those who **recall**; who should be fewer than those who **believe**. Finally those who **adopt** should be fewer than those who believe

Adoption of GAPs is associated with whether one is a member of a group and the position one holds in a group or association. Therefore, it is important for the project to continue facilitating group/association formation and leadership structure as a complimentary strategy of enhancing GAPs uptake.

Two main reasons given by those who did not believe BCC campaign messages include lack of training or education in GAPs and low understanding or knowledge of GAPs; pointing at the need for an integrated approach by the project teams to ensure that beneficiaries are trained with BCC campaigns acting as a catalyst for faster adoption of GAPs.

## 5. CONCLUSIONS AND RECOMMENDATIONS

Comparisons between results of the initial and the follow-up evaluations show significant improvements in most of the BCC variables with the changes associated to the BCC campaigns. Therefore, the project's BCC campaigns are effective in enhancing uptake of GAPs. Radio was the most effective means of passing BCC messages among the project beneficiaries. Since better uptake of GAPs is associated with group/association membership, the project should continue to encourage group formation and leadership training among for group members and officials.

The project should continue to refine its evaluation strategies to assess, among others inter-and intra-village differences noted in BCC campaign message uptake in future evaluations for improved programming and learning.

# REFERENCES

1. United Republic of Tanzania, 2012 Population and Housing Census. (2013, September). National Bureau of Statistics Ministry of Finance, Dar es salaam, Tanzania.
2. BCC Campaign Effectiveness Assessment Report – NAFAKA project. (2013, July).
3. An Evaluation Plan of the Effectiveness of the Behavior Change Communication (BCC) Interventions in the NAFAKA Project. (2013, September).
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# APPENDIX I

## NAFAKA PROJECT BCC CAMPAIGN EFFECTIVENESS EVALUATION FOLLOW-UP SURVEY QUESTIONNAIRE

### INSTRUCTIONS TO THE ENUMERATOR

- Introduce yourself, then state the purpose of your visit (remember to greet).
- Verify that you are in the right household per the sampling sheet (Project sites).
- Verify that you are about to interview the right respondent per the sampling sheet (Project sites).
- Move to the next household (if not in the list) in case you miss the sampled respondent.
- Ask for permission to start the interview.

### BASIC INFORMATION:

Date \_\_\_\_\_ (dd/mm/yy) Questionnaire No.\_\_\_\_\_

Region \_\_\_\_\_ District \_\_\_\_\_

Cluster \_\_\_\_\_ Village \_\_\_\_\_

Respondent target group:

1. Project/No BCC
2. Project + BCC
3. Control

### DEMOGRAPHICS

1. What is your sex? *Jinsi yako?*  
A. Male/*Mume*  
B. Female/*Mke*
2. How old are you? *Umri wako?* \_\_\_\_\_ (Years/*Miaka*)
3. What is your marital status?/*Hadhi ya ndoa?*  
A. Single  
B. Married  
C. Divorced/Separated  
D. Widowed
4. What is the highest level of education you attained?/*Kiwango cha elimu yako?*  
A. None  
B. Primary  
C. Secondary  
D. College/University  
E. Others; Specify: \_\_\_\_\_

5. What is your main occupation? (Probe) / *Shughuli yako kuu ni ipi?* (Choose only one)
- Crop production / *Kilimo cha mazao*
  - Livestock keeping / *Ufugaji*
  - Business / *Biashara*
  - Others; Specify / *Nyingine ainisha* \_\_\_\_\_
- 5b. What is your position in NAFAKA project group? *Nafasi yako ni ipi kwenye Kikundi kilichopo chini ya mradi wa NAFAKA?* (Choose only one) **SKIP IN CONTROL AREA**
- Group chair / *Mwenyekiti*
  - Other group official / *Kiongozi ngazi nyingine*
  - Lead farmers / VBAAs / *Mkulima Kiongozi*
  - Ordinary group member / *Mwanachama wa kawaida*
  - Not a member of NAFAKA project group / *Si mwanachama wa kikundi cha mradi wa NAFAKA*

## GENERAL COMMUNICATION

- 5c. Which is the most common type of communication channels/media in this area (Village/Ward)? / *Ipi ni njia ya mawasiliano kwenye eneo lenu (kijiji/kata)?* – Probe/dodosa (Choose one only)
- Radio / *Redio*
  - TV / *Luninga*
  - Phone / *Simu*
  - Community meetings / *Mikutano ya vijiji.*
  - Print materials like leaflets/brochures/posters/newspapers, etc. / *Mabango, vipeperushi, majarida*
  - Others; Specify / *Mengineyo, eleza* \_\_\_\_\_
- 5d. Which communication channel/media do you think is appropriate for delivering/receiving messages on Good Agricultural Practices (GAPs) in this area (Village/Ward)? / *Unafikiria ni njia ipi sabibi ya mawasiliano ya kupata taarifa kubusiana na mbinu za kilimo bora katika eneo hili.* Probe (Choose one only)
- Radio / *Redio*
  - TV / *Luninga*
  - Phone / *Simu*
  - Community meetings / *Mikutano ya vijiji*
  - Print materials like leaflets/brochures/posters/newspapers, etc. / *Mabango, vipeperushi, majarida*
  - Others; Specify / *Mengineyo, eleza* \_\_\_\_\_

## NAFAKA BCC CAMPAIGNS

(Make a brief background explanation of the BCC campaigns already conducted by the NAFAKA project)

6. Are you aware of any of the following campaigns conducted by the NAFAKA project? (Prompt to the respondent one by one) / Je una ufahamu wowote juu ya kampeni za mradi wa Nafaka za uhamasishaji katika yafuatayo?

Campaign	Yes / Ndio	No / Hapana	Source (Radio/Print Material)
Use of certified seeds? / <i>Matumizi ya mbegu bora?</i>			
Appropriate use of fertilizers? / <i>Matumizi ya mbolea?</i>			
Use of storage facilities? / <i>Kubifadhi mazao</i>			

Campaign	Yes/ Ndio	No/ Hapana	Source (Radio/Print Material)
<i>ghalani?</i>			
Joint sale of farm produce?/ <i>Kuuza kwa pamoja?</i>			
Line/space planting?/ <i>Kupaanda kwa mstari/nafasi?</i>			
Weeding/weed management/herbicide and insecticide application?/ <i>Kupalilia/udhibiti wa magugu na wadudu na matumizi ya viuagugu?</i>			
Early farm operations, including land preparations?/ <i>Maandalizi ya shamba mapema?</i>			
Relying on agriculture experts?/ <i>Kufuata wataalamu wa kilimo/afisa ugani?</i>			
Sources of farm inputs (agro-dealers, etc.)?/ <i>Sehemu zinakopatikana pembejeo za kilimo (mawakala wa pembejeo)?</i>			

#### PRINT MATERIALS

1. Which of the following BCC campaign materials have you ever seen?/ *Umewahi kuona chochote kati ya vitu vifuatavyo vinavyohamaisha matumizi ya?*

Campaign Materials	Yes/ Ndio	No/ Hapana	Where Did You See the Material?/ <i>Wapi umeona vitu hivi?</i> <b>(Indicate one only)</b>
Posters on certified seeds, fertilizer application, and line planting of rice?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda mpunga kwa msitari?</i>			
Posters on certified seeds, fertilizer application, and line planting of maize?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda mahindi kwa msitari?</i>			
T-shirts on certified seeds and appropriate use of fertilizers?/ <i>Fulana ya Nafaka kuhusu mbegu bora na matumizi ya mbolea?</i>			
Posters on crop storage?/ <i>Mabango kubusu ubifadhi wa mazao ghalani?</i>			
Posters on joint sale of farm produce?/ <i>Mabango kubusu uuzaji wa mazao?</i>			

2. Can you remember the main messages of the following BCC campaign materials?/ *Je unaweza kukumbuka ujumbe wowote wa kuhamasisha matumizi ya?*

Campaign Materials	Yes/ Ndio	No/ Hapana	What Message Can You Remember?/ <i>Unakumbuka ujumbe gani?</i>
Posters on certified seeds, fertilizer application, and line planting of rice?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda mpunga kwa msitari?</i>			

Campaign Materials	Yes/ Ndio	No/ Hapana	What Message Can You Remember?/ <i>Unakumbuka ujumbe gani?</i>
Posters on certified seeds, fertilizer application, and line planting of maize?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda mabindi kwa msitari?</i>			
T-shirts on certified seeds and appropriate use of fertilizers?/ <i>Fulana kubusu mbegu bora na matumizi ya mbolea?</i>			
Posters on crop storage?/ <i>Mabango kubusu uuzaji wa mazao?</i>			
Posters on joint sale of farm produce?/ <i>Mabango kubusu uuzaji wa mazao?</i>			

3. Did you **believe** the BCC campaign messages in the following materials?/*Je unaamini ujumbe wowote wa kuhamasisha matumizi ya?*

Campaign Materials	Yes/ Ndio	No/ Hapana	If NO, give a reason/ <i>Kama hapanza, taja sababu (Give one only)</i>
Posters on certified seeds, fertilizer application, and line planting of rice?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda mpunga kwa msitari?</i>			
Posters on certified seeds, fertilizer application, and line planting of maize?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda mabindi kwa msitari?</i>			
T-shirts on certified seeds and appropriate use of fertilizers?/ <i>Fulana ya Nafaka kubusu mbegu bora na matumizi ya mbolea?</i>			
Posters on crop storage?/ <i>Mabango kubusu uuzaji wa mazao?</i>			
Posters on joint sale of farm produce?/ <i>Mabango kubusu uuzaji wa mazao?</i>			

4. What was the main reason given by those who did **not believe** the campaign messages?/*Sababu kuu zilizowafanya wasiamini ujumbe wa uhamasishaji?*
- 

5. If you believed the messages, have you **followed the advice** of the campaign messages?
- Yes/*Ndio*
  - No/*Hapana*

- 5a. Followed advice from which campaign?/*Kutoka kwenye kampeni?*

Campaign	Yes / Ndio	No/ Hapana
Posters on certified seeds, fertilizer application, and line planting of rice?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda</i>		

<i>mpunga kwa msitari?</i> Posters on certified seeds, fertilizer application, and line planting of maize?/ <i>Mabango kubusu mbegu bora, matumizi ya mbolea na kupanda mahindi kwa msitari?</i>		
--	--	--

6. What is the one thing that could additionally be done to convince farmers to follow the advice of such campaign messages?/*Unafikiri ni kitu gani cha ziada kingefanyika ili kuwashawishi wakulima wafuate ushauri wa matumizi ya mbegu bora na mbolea?*
- 
- 

## RADIO CAMPAIGNS

7. Do you own a working radio in your home?/*Je, unamiliki redio inayofanya kazi nyumbani kwako?*  
A. Yes/*Ndio* *Go to Q15* →  
B. No/*Hapana*
8. Do you access a working radio somewhere else on a regular basis?/*Kuna sehemu nyininge tofauti na nyumbani ambapo huwa unasikiliza redio?*  
A. Yes/*Ndio*  
B. No/*Hapana*
9. What is your favorite radio station?/*Ni kituo gani cha redio unapenda kusikiliza Zaidi?*
- 

10. What is your main reason for favoring/preferring the radio station above?/*Ni sababu gani kuu inayokufanya upendelee kusikiliza redio hiyo?*
- 

- 10a. What is the radio station that is mostly received/with the best reception in this area?/*Ni kituo cha redio?*
- 

11. What is your popular radio programme?/*Kipindi gani maarufu cha redio kinachokuvutia?*
- 

12. Who is your most popular radio presenter?/*Ni mtangazaji gani maarufu anaekuvutia?*  
Presenter/*Mtangazaji:* \_\_\_\_\_ Radio station/*Kituo cha redio:* \_\_\_\_\_

13. Have you ever heard NAFAKA project-related message(s) on the radio?/*Umwewahi kusikia matangazo yanayohusiana na mradi wa Nafaka kwa redio?*  
A. Yes /*Ndio*  
B. No / *Hapana*

- 13a. What type/style of messaging did you hear?/*Ni aina gani ya ujumbe ulionsikia?*  
A. Radio Announcement/*Matangazo redioni*  
B. Radio talk show/program/*Mjadala redioni*  
C. Others; Specify/*Mengineyo, eleza* \_\_\_\_\_

14. On which radio station did you hear the NAFAKA messages?/*Ni kituo gani cha redio ulisikia ujumbe buo?* (**Choose only ONE**)  
A. Radio Ulanga  
B. Abood FM

- C. Pambazuko FM
- D. Radio Mwangaza
- E. Others; Specify \_\_\_\_\_

14a. When did you hear that radio announcement/talk-show message(s)?/Ni lini ulisikia huo ujumbe wa matangazo /mjadala redioni? (Probe for time and season)

Radio Campaign	Year	Month(s)	Season

15. Can you remember the NAFAKA-related messages from the radio?/Je, unaweza kukumbuka ujumbe ulousikia kwenye redio kubusiana na mradi wa Nafaka?

- A. Yes /Ndio
- B. No/Hapana

16. Did you follow the advice of the radio message(s)? Je, uliufata ujumbe huo?

- A. Yes/Ndio
- B. No/Hapana → Go to Q23c

17. Which of the following practices did you adopt as a result of listening to the BCC radio campaign announcements?/Ni vitu gani ulivyojifunza na ukavifanyia kazi baada ya kusikia matangazo ya kampeni redioni? (Choose all applicable)

Campaign	A. Yes	B. No
Use of certified seeds?/Matumizi ya mbegu bora?		
Appropriate use of fertilizers? Matumizi ya mbolea?		
Use of storage facilities? kubifadhi mazao ghalani?		
Joint selling of crop produce? Kuuza kwa pamoja?		
Line/space planting?/Kupaanda kwa mstari/nafasi?		
Weeding/weed management/herbicide and insecticide application?/ Kupalilia/udhibiti wa magugu na wadudu na matumizi ya viuagugu?		
Early farm operations, including land preparations?/Maandalizi ya shamba mapema?		
Relying on agriculture experts?/Kufuata wataalamu wa kilimo/afisa ugani?		
Sources of farm inputs (agro-dealers, etc.)?/Sehemu zinakopatikana pembejeo za kilimo (mawakala wa pembejeo)?		

17a. Which of the following practices did you adopt as a result of listening to the BCC radio talk show(s)?/Ni vitu gani ulivyojifunza na ukavifanyia kazi baada ya kusikia mjadala wa redioni ? (Choose all applicable)

Campaign	A. Yes	B. No
Rice/Maize planting and input application?/Kilimo cha mpunga/mahindi na matumizi ya pembejeo?		
Group/association formation and leadership?/Uundaji wa vikundi/vyama vya wakulima na uongozi?		

Access to finance?/ <i>Huduma za kifedha?</i>		
Post-harvesting and marketing linkages?/ <i>Shughuli baada ya mavuno na upatikanaji wa masoko?</i>		
Attending demo plots for training in GAPs?/ <i>Kubudhuria shamba darasa kwa mafunzo ya mbinu za kilimo bora?</i>		
Women in agriculture?/ <i>Wanawake na kilimo?</i>		
Weeds and insect management/herbicide application/ <i>Udhibiti wa magugu na wadudu na matumizi ya viuagugu?</i>		

17b. What was the main reason why you did not follow advice (**adopt**) from any of the radio campaign messages?/*Sababu kuu ni ipi, kwanini baufuati ushauri au ujumbe kutoka kwenye kampeni za radio?*

---

*End*

*Thank the Respondents*

*Review the questionnaire for completeness*

Name of Enumerator: \_\_\_\_\_

Signed: \_\_\_\_\_

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