2019

ALiSEA

Agro-ecology Learning alliance in South East Asia

COMMUNICATION MEDIA STUDY IN CAMBODIA

ALISEA CAMBODIA

VEATA MEY AND LUCIE REYNAUD

Table of Contents

Executive Summary

With an increased access to electricity and internet, rural populations in Cambodia currently have better chances to access media on a variety of electronic devices, ranging from TVs, radios, smartphones and many other tools. However, the records of the level of agricultural media accessed by farmers are scarce, while the majority of the populations are farmers. The communication media study was initiated with an aim to contribute to bring this untold situation to light. The study was introduced by Agroecology Learning Alliance in Southeast Asia (ALiSEA) under the support of GRET, and it was jointly developed by 12 ALiSEA Cambodia's members.

The study was developed with 2 main objectives including (1) determining media channels disseminating agriculture knowledge and information that most farmers depend on and how farmers access to those sources, and (2) identifying types of agricultural information and knowledge disseminated to farmers by different stakeholders, and approaches that stakeholders apply to reach target audience.

The research covered a period of 5 months from June to October 2018. It started with the meeting with ALiSEA members to plan and develop the research methodologies, data collection and analysis. In the study there were 354 individual farmer interviews in 10 provinces and 5 focus group discussions conducted to answer objective 1. There were also involvements from 13 organizations in the online survey to achieve objective 2.

According to the result of the study, it can be concluded that farmers from beneficiary group had better access to agriculture information from informal education and printed materials than their non-beneficiary counterpart. Informal education was selected as the most effective dissemination approach by most of the respondents as it is considered as an active means that could deliver precise messages. However, the beneficiary group showed low commitment to access education and publishing materials beyond what were provided, and they depend heavily on NGO staff as the main human resource when agriculture supports are needed.

Since TVs are widely available in most of the households in study areas, the weekly access to media through this electronic device is far ahead of other gadgets including smartphones, tablets, radio and computers. Dissemination of agriculture information to farmers through TV platforms seems to guarantee a promising result. However, the interaction between shows and viewers needs to be on the schedule in order to achieve the best result. Furthermore, the emergence of smartphone use among farmers could bring a new hope for development agencies in sharing information online to farmers. This is likely to be achievable in case farmers are trained or instructed on how to use this high-tech device properly.

Development agencies applied different communication strategies with various stakeholders. In disseminating agricultural information to their beneficiaries and other organizations in similar fields, most organizations used information education and experience exchanges as both tools can be achieved effectively under the full control of experienced personnel. On the contrary, in engagement with non-beneficiaries and public audience, they tend to put more focus on social media as it could reach many people quicker and in a huge amount. TVs programs and radio talk shows were not in the communication strategies of the respondents. However, when asked to identify most effective communication approaches, TV programs were ranked third behind social media and informal education.

SPECIAL THANKS

ALiSEA Cambodia would like to express sincere gratitude to all 12 members and stakeholders who have been very supportive and have contributed to this study.

1. Communication Media Overview in Cambodia

1.1 Actors in Agricultural Sector in Cambodia

In Cambodia there are many actors playing their parts in dissemination agriculture information to audiences with different purposes. On the government side, Ministry of Agriculture, Forestry and Fisheries (MAFF) and its subsidiaries play a major role in producing and disseminating agriculture information to public and especially to farmers based on the types of information (Zuhair & Katan, 2015), which range from crop production techniques to marketing for agricultural products. There are many development projects which are implementing by MAFF with the technical and financial supports from development partners. The Agriculture Services Programme for Innovation, Resilience and Extension (ASPIRE) project is one of the development programs run by the government. This project aims to improve local economic growth through enhancing profitable and resilient agriculture production technologies (MAFF, 2018).

Besides governmental institutions, non-governmental organizations (both local and international) and research centers also take a major part in disseminating agriculture information to farmers through their development and research projects. Each organization works in accordance with their expertise with specific goals to achieve in agriculture. There is a wide array of intervention areas that NGOs and research centers involve themselves with which range from improving crop production and access to irrigation, climate change resilience, value chain and marketing etc. These development agencies mostly work closely with farmers at grassroot levels.

On the contrary of above development agencies, there are many companies in private sector who are communicating with farmers to sell their products. Those business agencies include companies who produce, import and sell agriculture inputs and equipment, and companies that deliver services in agriculture such as business consultation firms. They work in different business levels, clients and areas based on their business goals and strategies.

1.2 Communication Tools and Types of Dissemination information

1.2.1 Television programs

Currently there are 15 terrestrial television stations in Cambodia broadcasting media in Khmer language (AsiaWave, 2018b). Besides these stations, there are also 4 cable television providers connecting viewers to more than 100 local and international channels every day. Among all those television channels, only a few are producing, and broadcasting shows about agriculture, for instance “A part of Mind” program on BTV, “Kasekar Kasekam” (Farmer and Agriculture) on Cambodian Television Network (CTN), and “Modern Agriculture” on CNC. These are not daily shows, and normally the TV stations broadcast these types of media once a week.

1.2.3 Radio program

In Cambodia, radio is another effective way of spreading news as can reach many people even in a very remote area as the signal receiving devices are highly available in the markets with very affordable prices that even families with limited means can afford at least one. Nationwide, there are more than 65 FM stations (AsiaWave, 2018a), broadcasting a wide range of combined programs

including religion, news, advertisements, sports news, music, agriculture and many other programs based on their purposes or sponsorships. Most FM radio stations in both local and international languages do not include agriculture programs in their show schedules, only a few stations are sponsored to broadcast educational agriculture talk shows. For instance, Women Radio FM102 is broadcasting a talk show on climate resilient practices every Friday at noon. This IDE funded-program aimed at promoting a climate-smart vegetable production. Lotus Radio FM 100.5 is another radio station that includes an agriculture show in the schedule. The program focuses on general agriculture topics rather that specific subjects.

1.2.4 Agriculture Books, Manual and Publications

Common Cambodians do not depend on books or other publications to receive information about agriculture. Only those who are involved in agriculture sectors such as students, lecturers, researchers, NGO workers and some farmers rely on these types of published tools. The main actors responsible for publishing books, technical manuals and other types of publication concerning agriculture include universities (Royal University of Agriculture…), research centers (Cambodia Development Resource Institute, Cambodian Agricultural Research and Development Institute…), Ministry and Departments of Agriculture, Forestry and Fisheries, NGOs (CEDAC, Sipar, CIRD etc.), and private companies which mostly consist of those who work in selling agriculture inputs and equipment such as pesticide companies.

1.2.5 Social Media and Website

Since there has been a significant increase in the use of smartphones and other digital devices, the chance of having access to internet in Cambodia is getting higher. According to a study by Open Institute, more than 96% of Cambodian citizens possess a phone, and 71% of all phone can view Khmer script which 21 % higher compared to 2015 (Phong et al., 2016). The number of active mobile user stood at 4.4 million in February 2017, while the amount of active social media users reached to 4.9 million at the same period. The most popular social media platform for Cambodian users was Facebook, dominantly attracting 4.8 million users in the country. Besides the increase in social media users, it is noticeable that there was a rise in the internet users, standing at 2.1 million in early 2017 (Joseph Soh, 2017).

Having seen the soar of popularity of the digital sector, many actors in agriculture in Cambodia have turned their focuses to the new methods in spreading information. Governmental institutions, local and international NGOs, research centers, and private companies have developed pages on Facebook, Channels on YouTube and website to disseminate information based on their interests. Each organization designs specific approach to ensure that the information spread reaches the targets. The most common types of media spread include video clips, photos, readable documents and messages.

2. Objectives of the Study

The study was developed with 2 main objectives including: (1) determining media channels disseminating agriculture knowledge and information that most farmers depend on and how farmers access to those sources, and (2) identifying types of agricultural information and knowledge disseminated to farmers by different stakeholders (government, NGOs, private sector and private sector), and approaches that stakeholders apply to reach target audience.

3. Scope of the Study

For the farmer survey, the study focuses on all types of agriculture including both chemical and non-chemical practices, and it was conducted in different geographical areas across the country to achieve a broader context. For the survey with development agencies, it was expected organizations from various sectors with a broad range of field of expertise could join and contribute substantially to enrich the quality of the study.

4. Research Methodology

4.1 Farmer Survey

4.1.1 Study Location

The study was conducted in 10 provinces, 17 districts, 40 communes and 81 villages. The detailed study areas are listed in appendix 1.

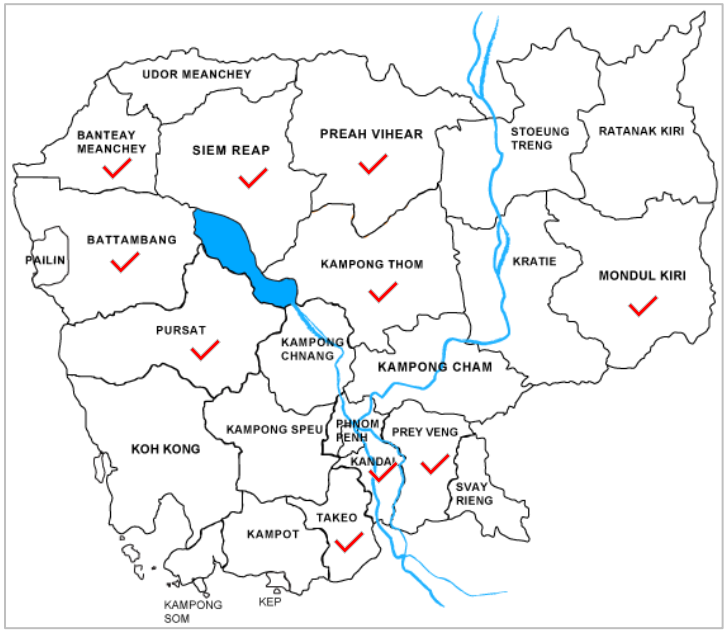

Figure 1 Study locations by provinces

4.1.2 Sample Sizes, Sampling and Number of Participated Organizations

There were 12 organizations in different areas of Cambodia took part in the data collection process of the study. Each organization was responsible for conducting 30 individual interviews with farmers who divided into 2 groups. The first 15 farmers were beneficiaries of the organization itself and the other 15 were non-beneficiary farmers living in the same or nearby the intervention areas of the organization. The 30 samples for the survey were randomly selected by the staff of the organization. So, the total samples for the individual interview were planned for 360 farmers. However, after the process of data cleaning, only 354 samples were qualified for the data analysis.

All interviewers from 12 participated organizations were required to use semi-structured questionnaire in digital format for the interviews. The digital questionnaire was designed by using Open Data Kits (ODK) software, which is compatible with tablets and phones that use Android operation system.

In addition to the individual interviews with farmers to collect quantitative data, 5 focus group discussions (FGDs) with key informants in the potential study areas were conducted to collect qualitative data to justify information given by individual farmers. Three FGDs were conducted with NGOs' beneficiaries in Prey Veng, Siem Reap and Kampong Thom provinces, while there were only 2 FGDs were conducted with non-beneficiaries in Kampong Thom and Siem Reap provinces.

Table 1 Areas of study and number of samples

#	Organization	Study Area	Number of Beneficiary Interviews	Number of Non-Beneficiary Interviews	Number of FGDs
1	Louvain Cooperation	Kampong Thom	15	15	2
2	GRET	Siem Reap	15	15	2
3	AGRISUD	Siem Reap	15	15	0
4	IVY	Preah Vihear	15	15	0
5	FAEC	Takeo	15	15	0
6	ADG	Takeo & Battambang	15	15	0
7	ECOLAND	Kampong Thom	15	15	0
8	Mlup Baitang	Pursat	15	15	0
9	MIPAD	Mundulkiri	14	14	0
10	Natural Agriculture Village	Kandal	13	13	0
11	IRRI	Prey Veng	15	15	1
12	Ockenden	Banteay Meanchey	15	15	0
	Total		**177**	**177**	**5**

Besides conducting individual interviews with farmers and FDGs with key informants, the study also conducts an online interview with development agencies. The purposes of this online survey were to find out the main tools and approaches that development agencies used to disseminate

agricultural news to target farmers, other stakeholders and the public. An online questionnaire was sent out to ALiSEA's stakeholders. As a result, there were responses from 13 organizations from various fields including private companies, research centers, universities, NGOs and government institutions.

4.1.3 Data Analysis

After the farmer survey, all data were upload by the interviewers to ONA website, which is the server of the ODK program. The data were then downloaded in Excel format, cleaned, and analyzed in SPSS program.

4.2 Online Survey with Development Agencies

4.2.1 Data Collection

In order to reach many respondents at the same time, the questionnaire for the development agencies were developed in Google Form, and the link to the questionnaire was sent to expected respondents by individual email.

4.2.2 Data Analysis

After the survey period, the data were downloaded from Google Form in Excel format, and then it was analyzed in the Excel program itself.

5. Results

5.1 Individual Survey with Farmers

5.1.1 Geographic Information and Sources of Income

In the study, the age ranges of respondents were divided into 5 different groups. The youngest respondent was 21 and the oldest was 70 years old. The respondents in the age ranges between 21-50 represent more than 60% of the total sample. The average age of respondents was 44.9 years old. The female respondents consist of approximately 56 per cent of the total samples.

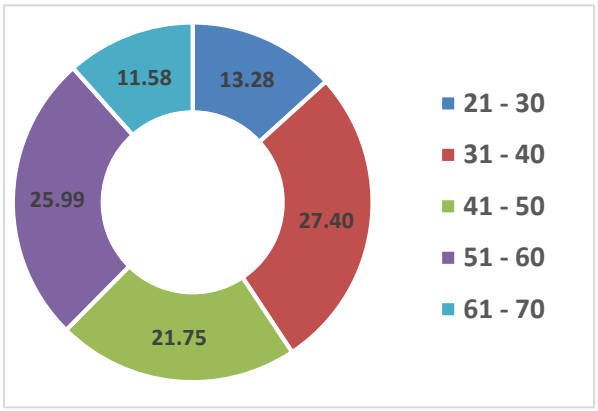

Figure 2 Age range of participants

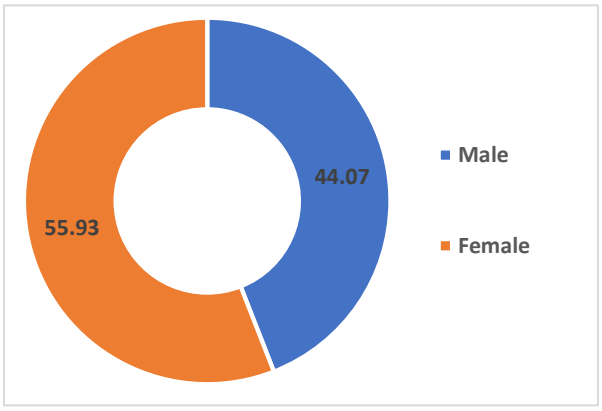

Figure 3 Gender percentage of farmers in the survey

According to figures 4 and 5, it is clearly seen than both beneficiaries and non-beneficiaries in study areas who took part in this study depended on rice production as the main income source. The vegetable production stood second, contributed at 20.34 per cent and 18.64 per cent of the income for beneficiaries and non-beneficiaries respectively.

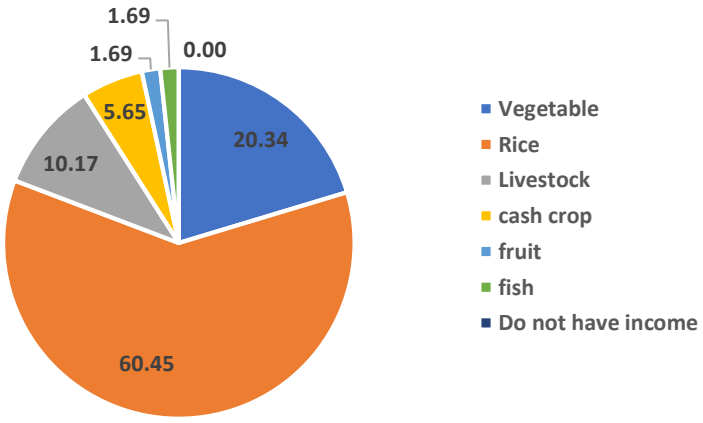

Figure 4 Major sources of Income of beneficiaries

Farmers who depended on fruit production and fisheries represented a very small proportion in this study, behind livestock and cash crop farmers.

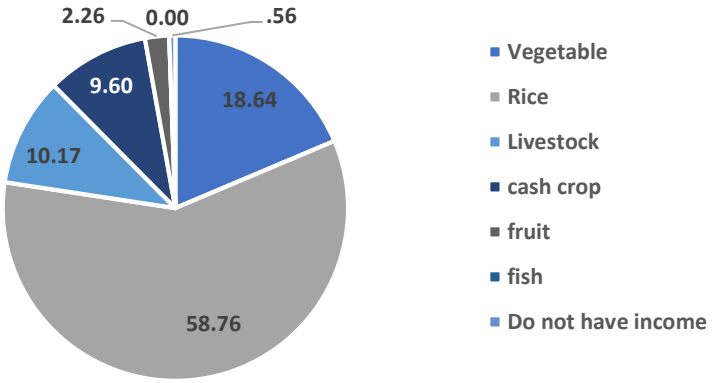

Figure 5 Major sources of income of non-beneficiaries

5.1.2 Access to Agricultural Training and Printed Materials

In the beneficiary group, since they are parts of development programs of NGOs, governmental institutions or private companies, there was a strong tendency towards them in terms of agriculture informal education participation. Approximately 92 per cent of beneficiary group attended at least 1 training concerning agriculture. In contrast, only around 47 per cent of the non-beneficiary group attend this type of informal education.

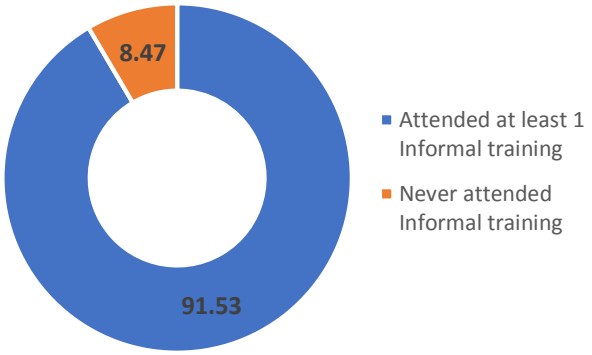

Figure 6 Previous Access to agriculture informal education of beneficiary group

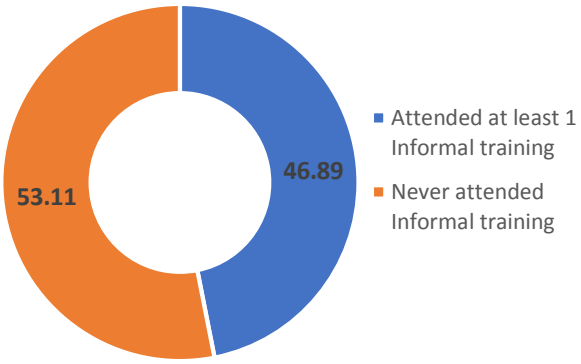

Figure 7 Previous Access to agriculture informal education of non-beneficiary group

Besides searching for the information about participation history of agriculture informal education from both groups, the study was also looking at the willingness to join the informal education in the future. From beneficiary group, 33.33 per cent of the 177 respondents showed a strong willing to

join paid and unpaid agriculture education in the future, while merely around 18 per cent of its counterpart similarly committed.

Most respondents from beneficiary group revealed that there are many benefits from participating informal education. Direct engagements with trainers and being able to collectively share experience among farmers during the events were the major reasons.

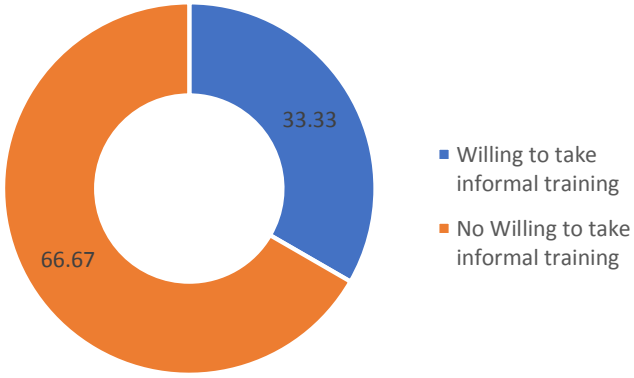

Figure 8 Willingness to access to agriculture informal education of beneficiary group

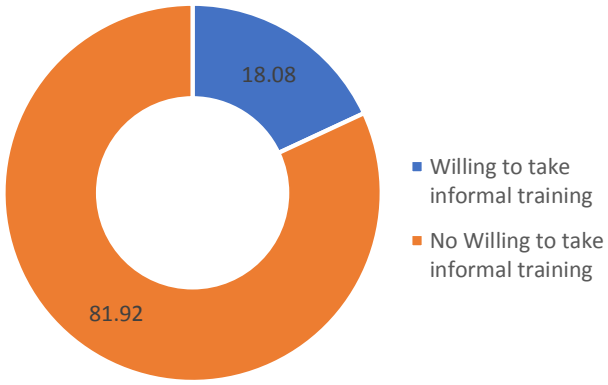

Figure 9 Willingness to access to agriculture informal education of non-beneficiary group

5.1.3 Access to Agricultural Printed Materials

Similar to the agriculture informal education, respondents from beneficiary group had better access to printed materials as almost 67 per cent of all 177 samples used to read agriculture printed materials. Meanwhile, only around 41 per cent having access to similar physical education materials. The most favorite printed materials mentioned in the responses were short technical manuals with big font characters and colored photos explaining the agriculture techniques, and leaflets with color pictures.

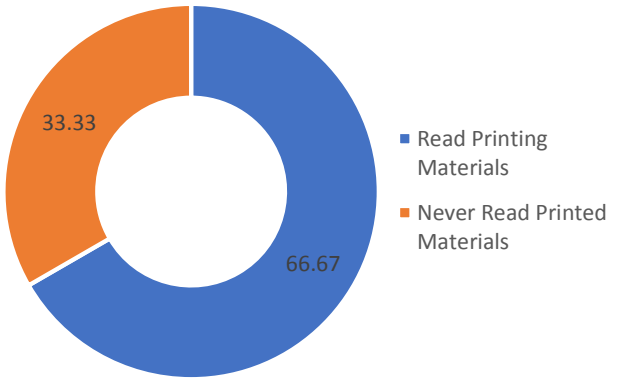

Figure 10 Previous access to agriculture printed materials of beneficiary group

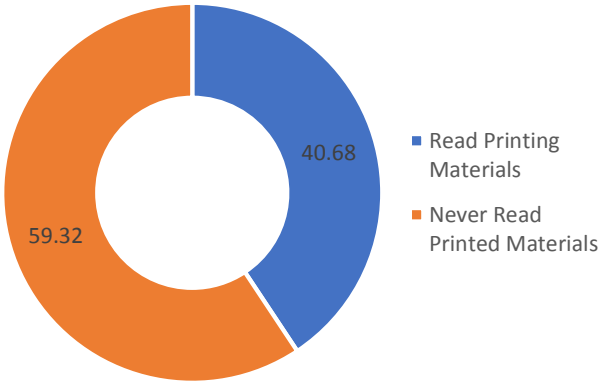

Figure 11 Previous access to agriculture printed materials of non-beneficiary group

Even though they may have learned about the benefits of agriculture technical books and other materials, respondents from both groups showed low interests in seeking for printed material in the future. Only 26.55 and 13 per cents from beneficiary and non-beneficiary groups prefer to seek access to those materials. The main reason behind these low percentages were the lack of interactions between readers and publishers when questions arise during reading.

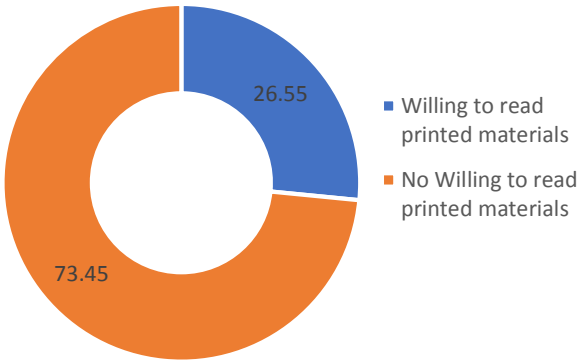

Figure 12 Willingness to access to agriculture printed materials of beneficiary group

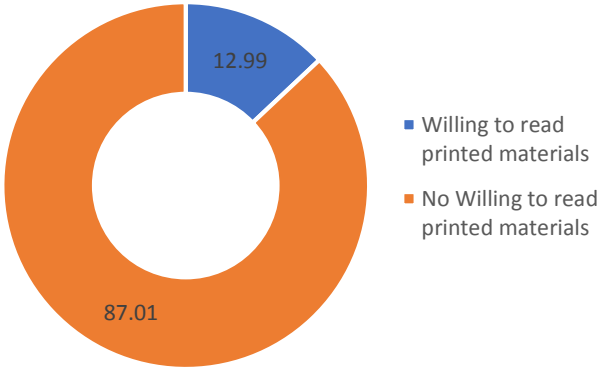

Figure 13 Willingness to access to agriculture printed materials of non-beneficiary group

5.1.4 Major Human Resources for Agriculture Information

For respondents from beneficiary group, NGO staff plays a critical role as the main resource for farmers in terms of technical supports and information sharing. A hundred twenty respondents among 177 selected this option as the top priority since the information from this source was mentioned "highly reliable" by many farmers interviewed. Government staff and cooperative also play significant roles as key informants for farmers.

Table 2 Key persons that farmers depend on for agriculture information

#	Source of Information	Beneficiary Group	Non-Beneficiary Group
1	Agricultural extension officer	71/177	28/177
2	Inputs sellers	43//177	51/177
3	NGOs staff	120/177	57/177
4	Other farmers	66/177	86/177
5	Middle-men / collectors	15/177	20/177
6	Relatives	34/177	50/177
7	Cooperative	68/177	17/177
8	Micro-finance institution	0/177	1/177
9	Others	7/177	19/177

On a contrary, for the non-beneficiary group, other farmers in the communities were determined as a major source of information when it comes to technical and market information. Eighty-six respondents benefited from this human resource, and they put the rest of the trust on NGOs staff and input sellers.

5.1.5 Household Possession of Electronic Devices

Among 5 major identified electronic devices, TVs stand on top of the list as the most possessed electronic devices owned by populations in the study areas. Almost 80 per cent of the respondents owned at least 1 TV at their household level. Based on the FGD, it was explained that TVs still play a major role for rural population to access media. Most people still rely on TV to receive a variety of information including news and entertainment programs. It is described as a friendly device which is convenient to access and operate. Smartphones are the second most popular devices that many respondents possess with around 49 per cent of the respondents own a touch screen phone which can access to various media including phone applications, TV and radio programs.

As most of respondents owns at least one TV, there is a small proportion of the total samples who own a tablet and computer. Only 4.24 and 1.41 per cent of the respondents who claimed to possess both devices respectively.

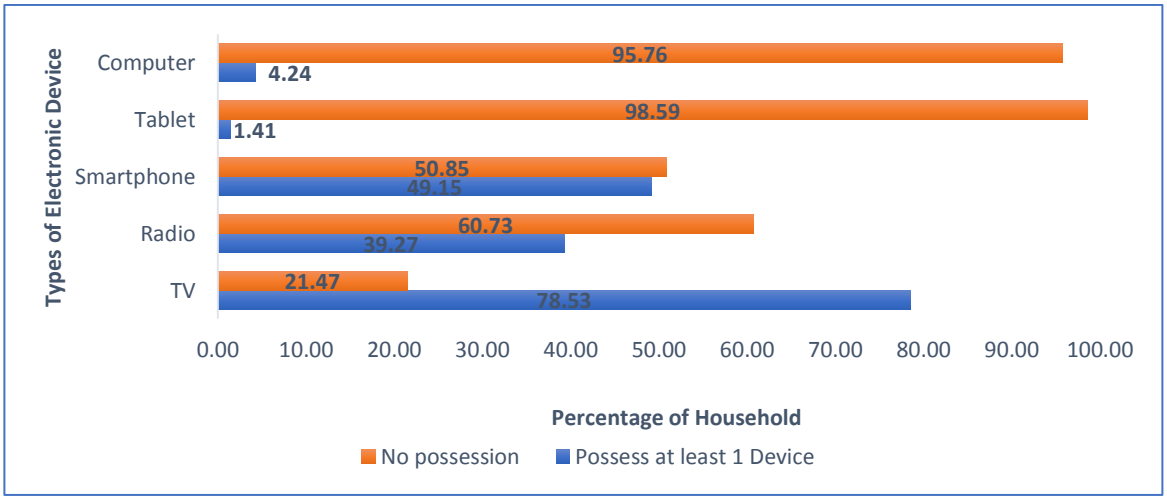

Figure 14 Electronic devices possession at household level

Since most of respondents own a TV at home, by looking at the data in table 3, there are different preferences between age groups of samples towards electronic devices. For example, smartphones are very popular among respondents aged between 21 – 40 which the possession percentage of 61.7 and 62.9 respectively, while radio is mostly possessed by the oldest group respondents. Tablets and computer were hardly possessed by any age groups.

Table 3 Number and Percentage of Respondents Owned Various Devices

Age Range	Total Number of Samples	TV		Radio		Smart Phone		Tablet		Computer		None	
		#	%	#	%	#	%	#	%	#	%	#	%
21 - 30	47	32	68.09	16	34.04	29	61.70	2	4.26	3	6.38	4	8.51
31 - 40	97	77	79.38	34	35.05	61	62.89	1	1.03	8	8.25	6	6.19
41 - 50	77	63	81.82	29	37.66	36	46.75	0	0.00	5	6.49	3	3.90
51 - 60	92	72	78.26	37	40.22	35	38.04	1	1.09	1	1.09	4	4.35
61 - 70	41	33	80.49	24	58.54	9	21.95	0	0.00	0	0.00	4	9.76

5.1.6 Weekly Access to Media

In connection to the dominant possession of TVs shown by the data in the previous section, respondents spent in average 4.3 days per week accessing media on this device, making agriculture programs screening on TV seem like one of the most effective agricultural dissemination tools to farmers. Respondents also spent 1.9 days in average a week to access news on Facebook, following by radio programs and videos on YouTube which they spent 1.9 and 1.4 days per week on these media respectively. Even some farmers possessed a computer, there was no record of website access from the interviews.

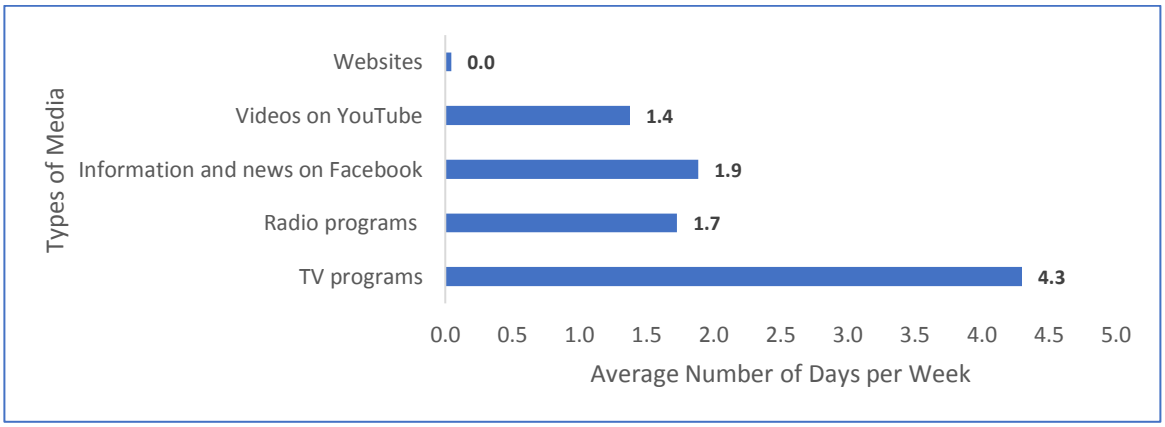

Figure 15 Weekly access to media by respondents

Older respondents seem to spend more time watching TV than their younger counterparts. Respondents in age groups between 41-50, 51-60, 61- 70 spend 4.6, 4.4 and 4.8 days per week respectively watching programs on TV. On the contrary, respondents in younger ages prefer to spend more time on Facebook and YouTube, while the radio programs are mostly attracted to oldest age group of respondents.

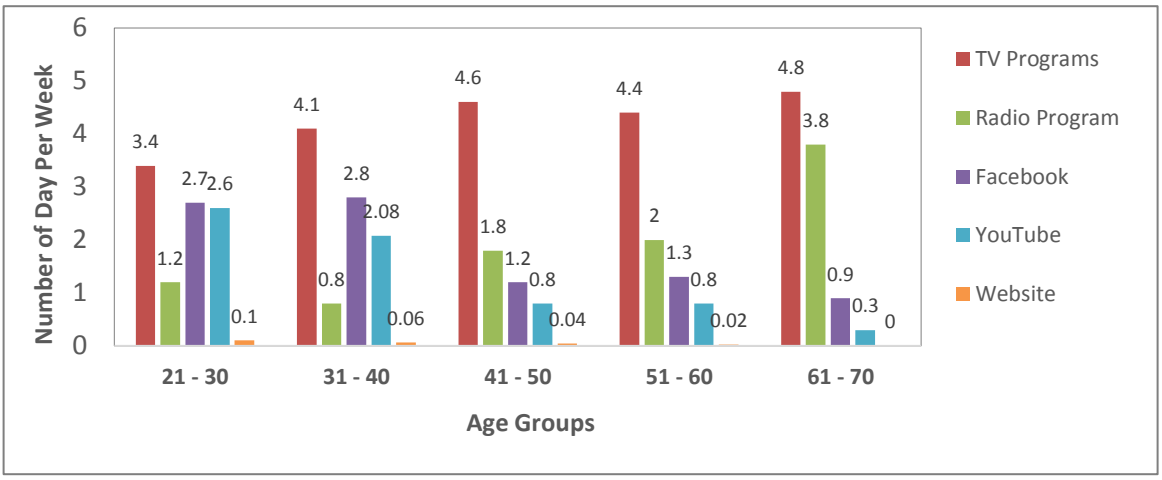

Figure 16 Weekly access to media by respondents in different group ages

5.1.7 Agriculture Information Search on Media

Even though, TV programs seem a promising dissemination tool for agriculture program, the reality went in an opposite direction. Among a total of 354 respondents, only around 42 per cent searched for agricultural programs on TV. Based on the responses from the FGDs, it was mentioned that agricultural shows were screened in the morning or at late nights when it is not suitable for farmers to access those programs. Respondents mostly prefer to access shows on TV during noon or in the early evening when mostly TV drama or other entertainment programs are screened.

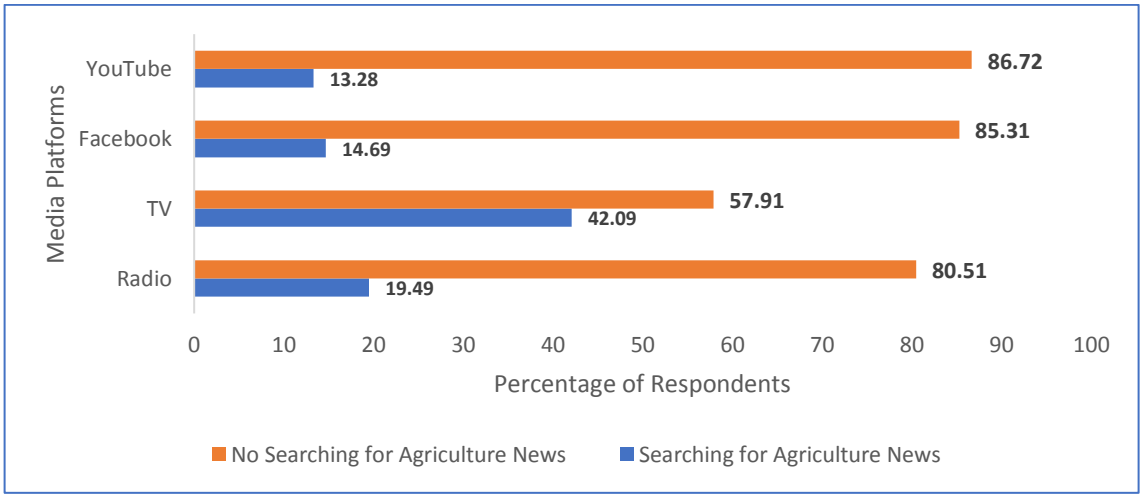

Figure 17 Agriculture information search on different media platforms

Surprisingly, according to the data shown in figure 17, radio may no longer be a popular platform to broadcast agricultural program since only a shy of 20 per cent of the respondents searched for farming techniques and news on radio. Listening to radio has become a leisure activity for most of the respondents based on testimonies recorded in the FGDs.

Despite there is an emergence of the use of smartphones among farmers, the ability to operate applications on those high-tech devices among them was under the expectation. Only 14.69 and 13.28 per cent of the total respondents were capable of making a search for agriculture news on Facebook and YouTube. Most respondents were not fully aware of how to operate those both well-known applications. Interestingly, when respondents access Facebook and YouTube applications, they viewed only what showed on the screens, without any further knowledge of how to search for information on both applications.

According to the data in table 4 below, it can be clearly seen younger respondents (21 – 40 years old) seem to search for agricultural media on social media more than their older counterparts. Forty-three among 97 respondents in the age range between 31 – 40 years old confirmed that they search more agriculture media on Facebook more than other media platforms, while samples who aged between 51 – 60 search for agriculture media on TV.

Table 4 Agriculture Media search by respondents in different age groups

Age Range	Total Number of Samples	Radio		TV		Facebook		YouTube	
		Yes	No	Yes	No	Yes	No	Yes	No
21 - 30	47	9	38	15	32	**19**	**28**	6	41
31 - 40	97	10	87	38	59	**43**	**54**	23	74
41 - 50	77	**29**	**48**	**36**	**41**	14	63	9	68
51 - 60	92	18	74	**37**	**55**	19	73	9	83
61 - 70	41	14	27	**22**	**19**	6	35	1	40
Total	**354**	**80**	**274**	**148**	**206**	**101**	**253**	**48**	**306**

Among a total sample of 354, only 170 respondents confirmed that they possess at least a smartphone. Surprisingly, only 101 and 48 of out 170 respondents searched for agriculture media on Facebook and YouTube applications respectively.

Table 5 Agriculture Media search by respondents who own a smartphone

Smart Phone Owner	Number of Respondents who Search Agricultural media on Facebook and YouTube	Animal Production	Vegetable Production	Fruit Production	Rice Production	Fertilizer Preparation/ Application	Pest Management	Marketing	Others
170	Facebook Search: 101/170	**31/101**	**29/101**	14/101	16/101	6/101	9/101	4/101	2/101
	YouTube Search: 48/170	**23/48**	**21/48**	13/48	11/48	7/48	10/48	0/48	4/48

The most popular topics for Facebook searchers were animal and vegetable productions as 31 and 29 out of 101 respondents looked for these topics. Similarly, these topics were also ranked first and

second of the most sought-after topic on YouTube. Only a very few respondents searched for market information on both applications.

5.1.8 Preferred Media Platforms and Dissemination Approaches for Agriculture Media

Based on the data provided in figure 18, it is clearly seen that the majority of the respondents (59.04 per cent) selected TV programs as their top choice in terms of agriculture information dissemination since they stated that messages through TV were highly visible, understandable, and very accessible compared to other audio and highly technical platforms such as radio, Facebook or YouTube. However, it was suggested that the screen time of agricultural shows on TV needs to be adjusted based on the preference schedules of farmers.

Radio programs and Facebook were considered less significant by respondents as effective media platforms. It was mentioned that audio tools may longer be relevant for sharing agriculture news since people are attracted to more visual tools. This statement could bring some hopes for social media applications such as Facebook and YouTube. However, since they are too technical for farmers, both applications are not considered as friendly tools for respondents.

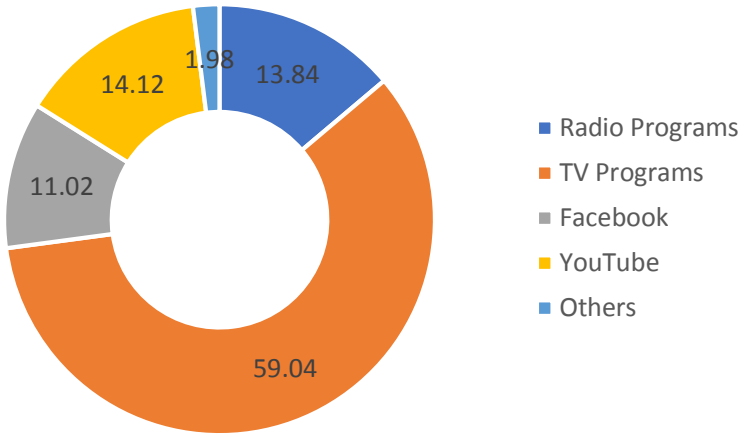

Figure 18 Preferred agriculture media platforms by respondents

According graph 19 which shows the preferences towards agriculture media platforms by respondents in different age groups, TV is a dominantly popular platform for all samples; while radio is relatively popular for youngest and oldest age groups. The middle-aged respondents (from 31 to 50 years old) seem to depend on Facebook and YouTube to search for agriculture media after TV.

Besides the 4 dominant media platforms mentioned in the charts, there were also some respondents that depend on other media application to access agriculture news and information. Those applications include Telegram and WhatsApp chats, which were moderately popular among respondents aged between 31-40 years old.

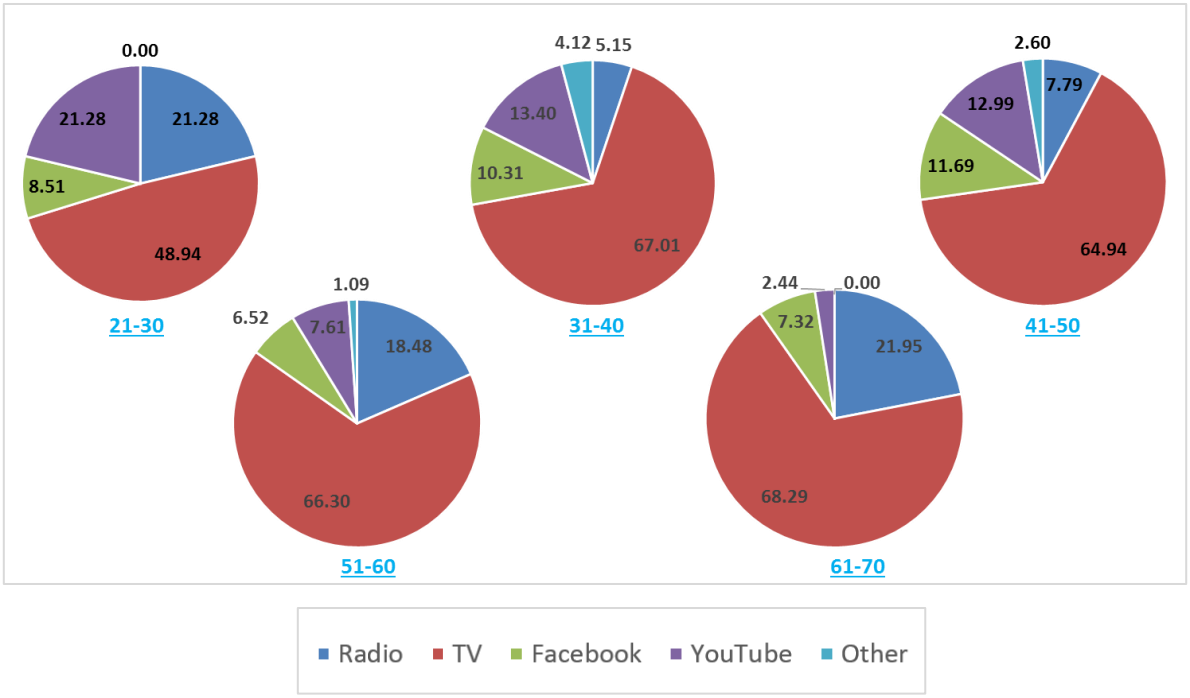

Figure 19 Preferred agriculture media platforms by respondents in different group ages

When questioned the preferred dissemination approaches for agriculture information, 65. 82 per cent of the total respondents selected informal education. As key informants shared in the FGDs that this type of approaches allows farmers to engage directly with trainers and fellow participants to questions and share experience during the events. More importantly, many agricultural informal educations including real practices that could have a huge impact on the adaptation of the techniques delivered. The other 3 options including technical book reading, short technical document reading and short video watching received insignificant votes as respondents believed that those approaches were passive and, in some cases, inapplicable.

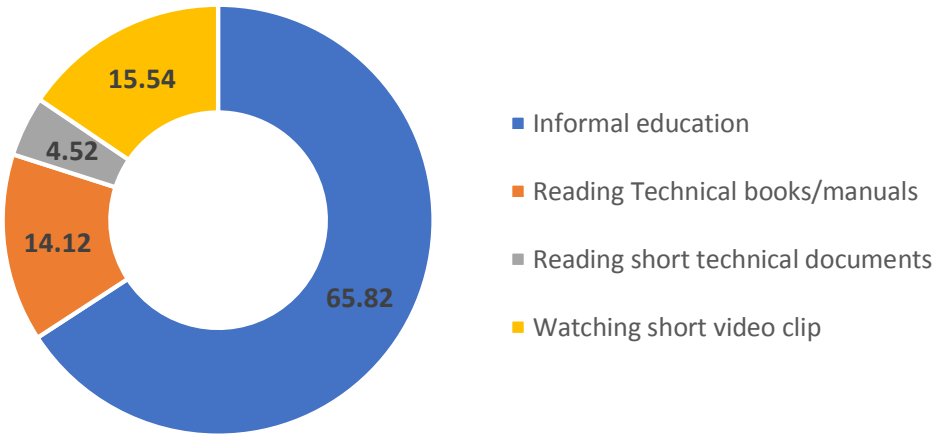

Figure 20 Preferred agriculture dissemination approaches by respondents

Besides informal education which preferred by all age groups, respondents in age groups between 41 – 70 seems to cope well with books and manuals as means to get agriculture information. In contrast, younger respondent prefers to watch more video clips as their second choice after informal education.

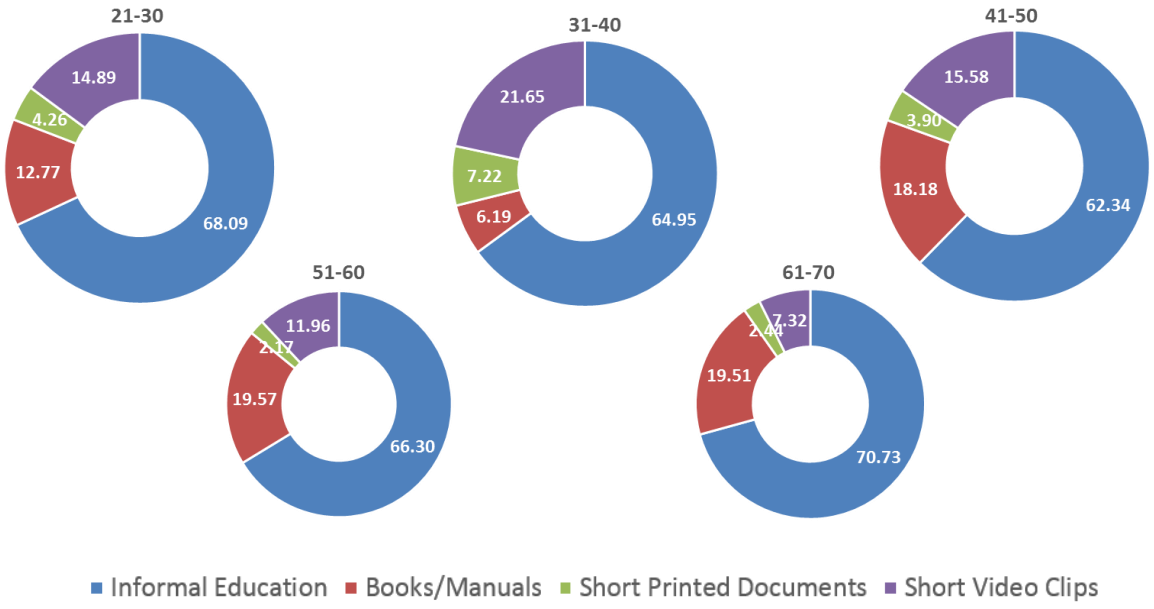

Figure 21 Preferred agriculture dissemination approaches by respondents in different group ages

5.2 Online Survey with Development Agencies

After a period of a month for the online survey, there were 13 organizations engaged in the online survey. Among 13, respondents from NGOs made up to almost 50 per cent of the total samples, followed by those from governmental organizations, private companies, and research centers. The also sought to hear views from farmer organizations; however, during the process, none of them participated in the online survey.

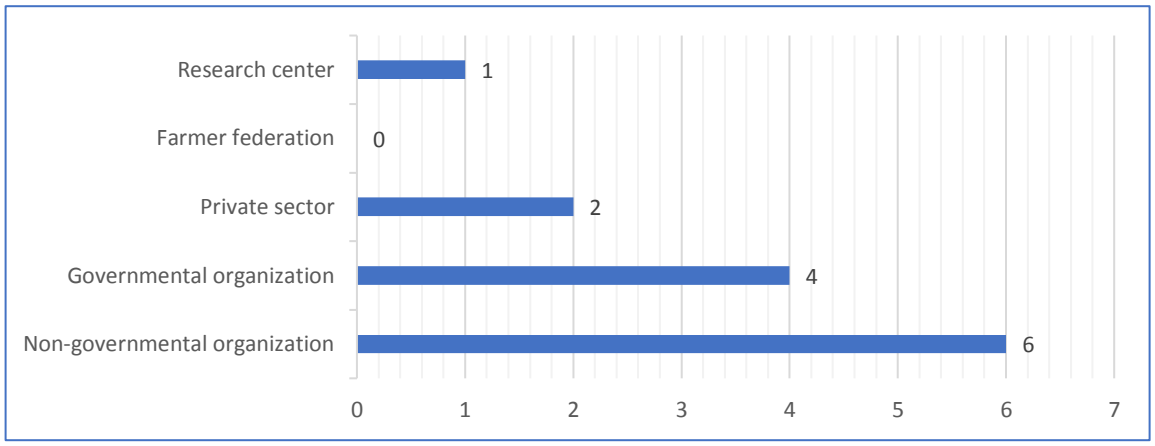

Figure 22 Types of Respondents

The online survey consisted of a series of questions related to approaches at institutional level that organizations used to disseminate agriculture information to different stakeholders. Questions concerning constraints in spreading agricultures and what are the best approaches were also included. The following sections are summary results from the online survey.

5.2.1 Dissemination Approach for Beneficiaries

According to figure 19 below, it is clearly seen that informal education and experience sharing were the common approaches used by the majority of the respondents. Ten among 13 organizations believed that these two approaches precise and effective and could leave longer impact for their beneficiary farmers. Disseminating agriculture information to farmers using printed materials, radio talk shows, and TV programs were less popular among all categories of respondents. However, more than half of the organizations also deployed social media as one of their disseminating tools to engage with their farmers as it showed that it could each many people at one time.

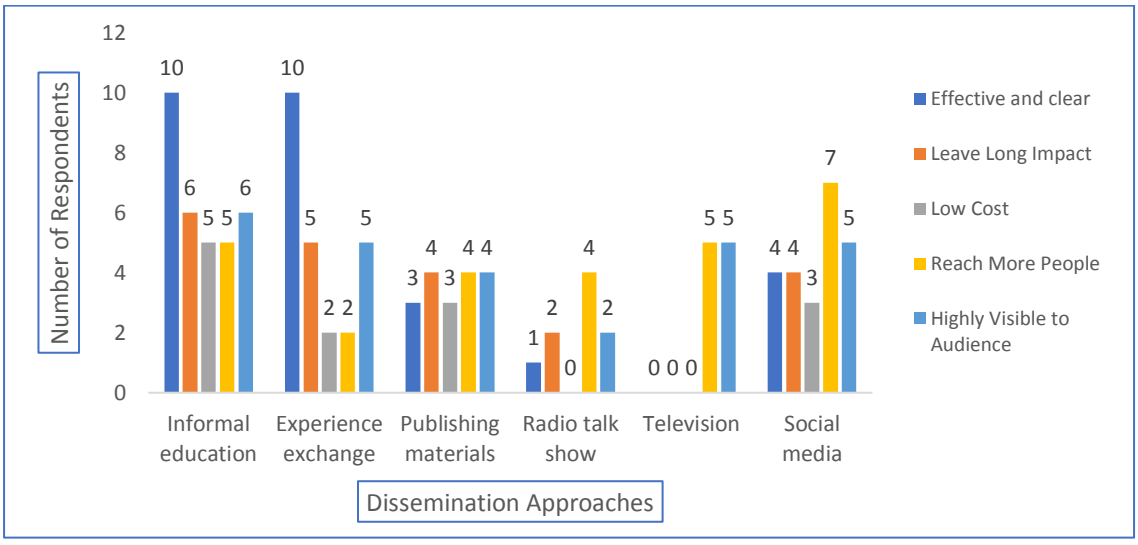

Figure 23 Dissemination approaches for beneficiaries

5.2.2 Dissemination Approaches for Non-Beneficiaries

In contrast to the approaches used to reach beneficiary farmers in the last section, 9 out of 13 respondents put the focus on social media as a tool to engage with farmers who are not under their interventions as it is seen as a way that could reach many people at the same time. Some organizations preferred to use informal education and publishing materials to attract non-beneficiary farmers as they experienced that both approaches are highly visible to audience and the impact could last long. Radio talk shows and TV programs were similarly deemed ineffective as previous section for this type of audience.

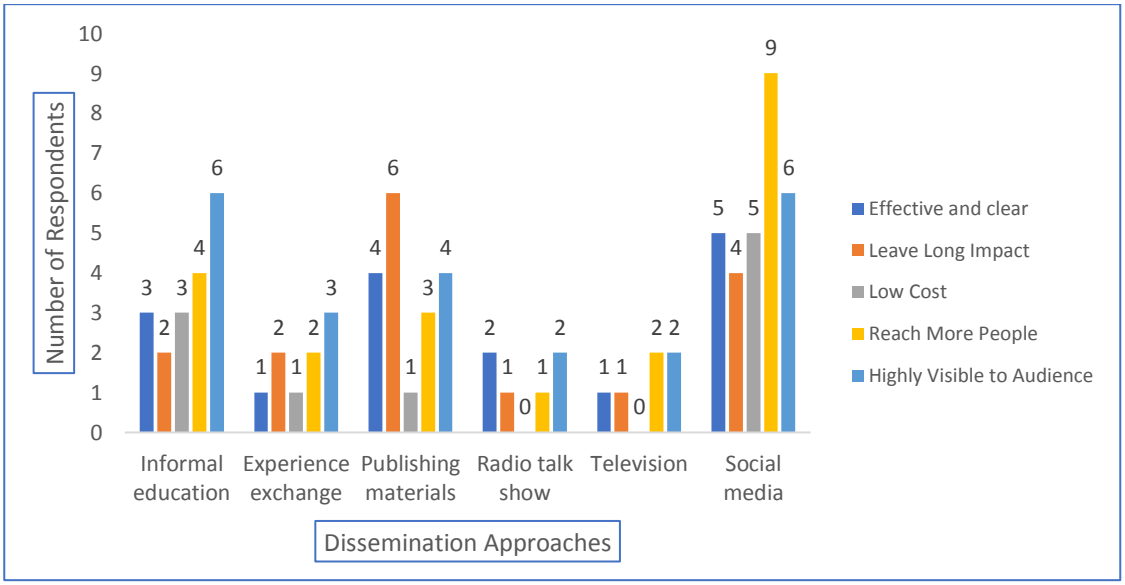

Figure 24 Dissemination approaches for non- beneficiaries

According to data shown in the chart below, it is likely that most organizations tend to focus on social media as a main dissemination approach to the general public as almost half of the respondents selected this option. Social media is perceived by participated organizations as a precise way to spread message and could reach audience effectively. Surprisingly, the radio talk shows and the TV programs were not the prioritized options by the respondents. Only 3 organizations included radio and TV programs in their communication strategies, and they tend to put less focus on the informal education and experience exchanges for this audience.

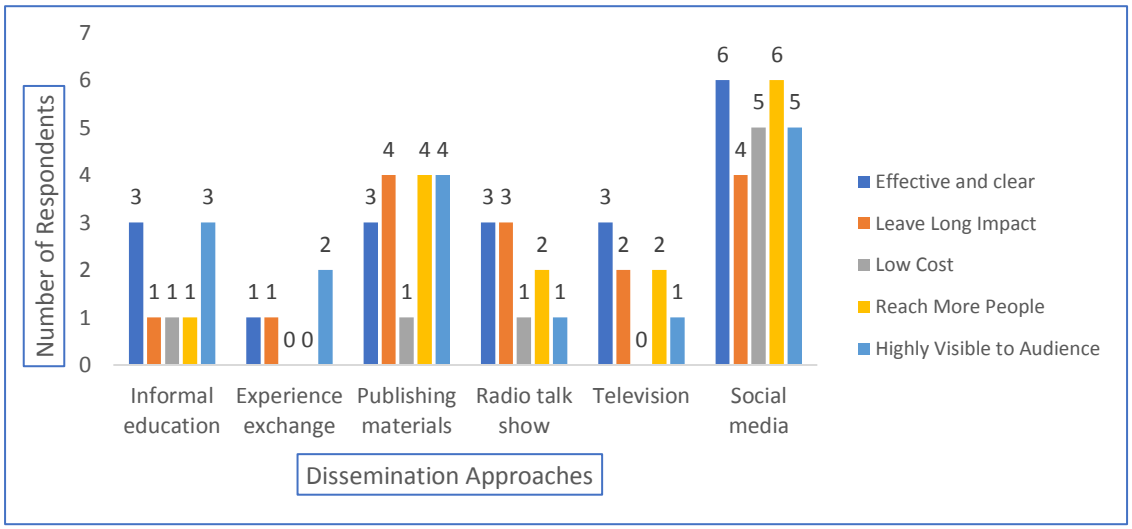

Figure 25 Dissemination approaches for public audiences

5.2.4 Dissemination Approaches for Other Organizations

As communication tools with other organizations, respondents pay similar attention on social media, informal education, experience exchange, and sharing printed materials. It is clearly seen that organizations who took part in this survey considered the 4 mentioned approaches as clear and could leave a long impact for the messages they delivered, compared to TV and Radio programs which are high cost and somewhat irrelevant for their communication

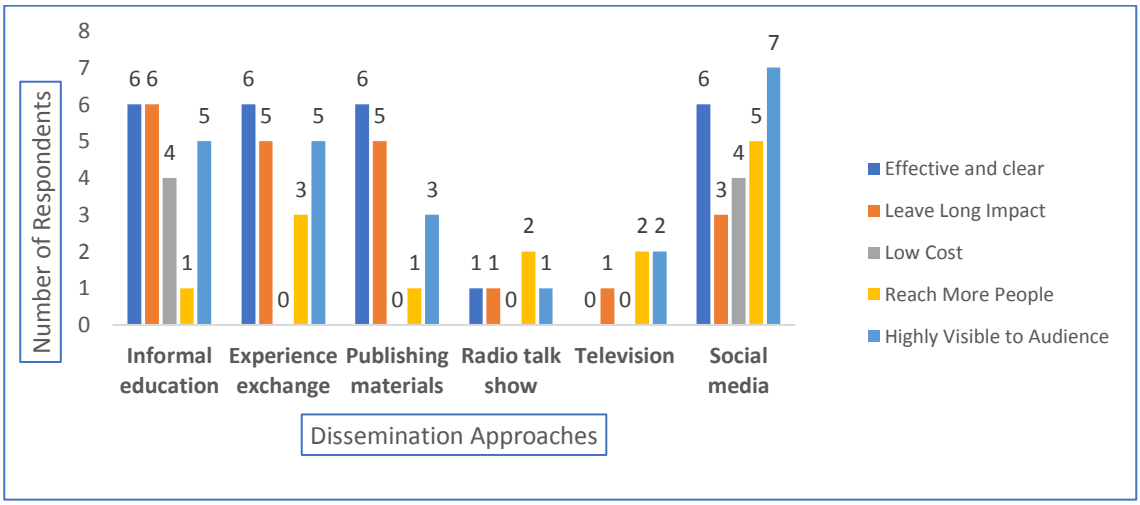

Figure 26 Dissemination approaches for other organizations

5.2.5 Constraints to disseminate agriculture information

In communication with different stakeholders, there were many constraints raised by respondents. The most significant challenge identified was the lack of budget as 12 out of 13 organizations agreed on this point. It was followed by the lack of time to prepare operational dissemination approaches and the lack of references to develop communication tools.

Table 6 Major constraints for agriculture information dissemination

Types of Constraint	Proportion
Lack of time to prepare effective tools	7/13
Lack of references to design tools	6/13
Lack of budget	12/13
Lack of communication/knowledge/skills	1/13
Lack of data of the effective communication	1/13

5.2.6 Most effective means of information dissemination to farmers

Based on the responses from the survey, the majority of organization agreed that informal education is the most effective approach to disseminate agriculture information to farmers. This tool was believed to be highly effective in delivering technical knowledge to farmers and it could leave spillover effects to the community.

> *"The farmers we work with are vulnerable or poor, therefore they are risk adverse to trying new things. To combat this, we firstly find slightly richer, more innovative farmers who are willing to take a risk of new ag techniques, work with them for a season and then other participants can see that the technique works and then will be more likely to try the new ag techniques. The seeing is believing methodology. This is why we have found that trainings with ongoing coaching/support and improving the market chain for ag inputs and products - all combined, has been the most effective." — Fauna and Flora International*

Table 7 Most effective dissemination means chose by development agencies

Dissemination Means	Proportion
Informal education	12/13
Publishing tools	6/13
Radio programs	4/13
TV programs	8/13
Social media	10/13
Exchange visits	3/13

Following the informal education, social media ranked the second most effective approach to spread agriculture information. It is perceived by respondents as a quick, effective and can reach

numerous people at the same. It was also mentioned that using social media as a dissemination tool is very ideal in current Cambodian context as there is an emergence of the use of smartphones among farmers, especially the younger ones.

> *"Most farmers have smart phone to use. They use it very often, even if they are in bed and meal time." – Mlup Baitong Organization*

It is also contradictory for the TV programs being the third most effective tools to share agriculture information. In the previous sections, many organizations did not consider using TV for their agriculture communication program; and as it comes to the last part, 8/10 respondents saw TV program of one of the most promising tools to reach farmers in terms of agriculture information sharing.

> *"TV programs are also important because most farmers like watching TV. The knowledge transfer through this will be seen by millions of farmers. Some of them will try new techniques." – The Department of Industrial Crops of the GDA*

> *"TV is still popular in the countryside especially for smart-phoneless farmers, they include illiterate can see and listen to each process of the agriculture production." – Mlup Baitong Organization*

6. Conclusion

According to the result of the study, it can be concluded that farmers from beneficiary group had better access to agriculture information from informal education and printed materials than their non-beneficiary counterpart. Informal education was selected as the most effective dissemination approach by most of the respondents as it is considered as an active means that could deliver precise messages. However, the beneficiary group showed low commitment to access education and publishing materials beyond what were provided, and they depend heavily on NGO staff as the main human resource when need agriculture supports.

Since TVs are widely available in most of the households in study areas, the weekly access to media through this electronic device is far ahead of other devices including smartphones, tablets, radio and computers. Dissemination of agriculture information to farmers through TV platforms seems to guarantee a promising result. However, the communication between shows and viewers needs to be on the schedule in order to achieve the best result. Furthermore, the emergence of smartphone use among farmers could bring a new hope for development agencies in sharing information online to farmers. This is likely to be achievable in case farmers are trained or instructed on how to use this high-tech device well.

Development agencies applied different communication strategies with various stakeholders. In disseminating agricultural information to their beneficiaries and other organizations in similar fields, most organizations used informal education and experience exchange as both tools can be achieved effectively under the full control of experienced personnel. On the contrary, in engagement with non-beneficiaries and public audience, they tend to put more focus on social media as it could reach many people fast and in a huge amount. TVs programs and radio talk shows were not in the communication strategies of the respondents. However, when asked to identify most effective communication approaches, TV programs were ranked third behind social media and informal education.

Reference

MAFF. (2018). Agriculture Services Programme for Innovation, Resilience and Extension. Ministry of Agriculture, Forestry and Fisheries. Retrieved from http://aspirekh.org/

AsiaWave. (2018a). Radio Stations in Cambodia. Asia Wave. Retrieved from https://www.asiawaves.net/cambodia-radio.htm

AsiaWave. (2018b). Television Stations in Cambodia. Asia Wave. Retrieved from https://www.asiawaves.net/cambodia-tv.htm

Joseph Soh. (2017, February 9). Cambodia's 2017 Social Media & Digital Statistics. Retrieved from http://geeksincambodia.com/cambodias-2017-social-media-digital-statistics/

Phong, K., Srou, L., & Sola, J. (2016). *Mobile Phone and Internet Usage in Cambodia 2016*. Phnom Penh: Open Institute.

Zuhair, M. L., & Katan, H. (2015). THE SETTING-UP OF E-COMMERCE FOR FISHERY SECTOR IN CAMBODIA: A PROPOSED FRAMEWORK.

Appendix 1 List of Research Areas

#	Organization	Province	District	Commune	Village
1	Ockenden Cambodia	Banteay Mean Chey	Munkul Borey	Kouk Balang	Kouk Balang
					Ta A'an
				Ta Lom	Preah Sre
					Chong Kouk
					Ta Lom Chong
				Sras Raing	Chamkar Chek
2	Eclosio	Battambang	Banan	Bay Damram	Kampong Chaeng
					Ta Sa'rng
					Krala Peang
				Phnom Sampov	Phnom Sampov Keut
					Krapeu Cheung
					Kda'orng
			Sang Ke	Kampong Preang	Os Touk
					Sambok Ork
				Raing Kesey	Vatt Kandal
		Takeo	Tramkak	Kus	Chheu Teak Thkoul
					Chamkar Ang Kang Tboung
					Ang Kralanh
				Cheang Tang	Ang Baksey
					Sandor
				Nhe Nhang	Russey Srok
				Tapem	Por Preah Sang
				Angtasaoum	Por Phott
					Trapaing SraNge
3	FAEC	Takeo	Tramkak	Cheang Tang	Ang Baksey
				Tapem	Ta Mom
				Trapaing	Prey Ta Loy
				Angtasaoum	Trapaing SraNge
				Oudam Sorya	Trapaing Thlann
					Taso
					Trapaing Trakeat
					Trapaing Chhouk
				Ou Saray	Trapaing Plu
				Tram Thom Kang	Ta Suon
4	Louvain Cooperation	Kampong Thom	Baray	Baray	Banak
				Chhouk Khsach	Kdam Har
			Santuk	Chraub	Chey Mungkul
5	ECOLAND	Kampong Thom	Steung Sen	Srayov	Kamraeng
					Chambak
					Rakar
6	Natural Agriculture Village (NAV)	Kandal	Sa'ang	Koh Khsach Tunlea	Chong Koh Keut
				Kraing Yov	Tuol Krouch
				Svay Brateal	Baren Leu

					Baren Kraom
					Ou Romcheck
7	MIPAD	Mondolkiri	Ou Raing	Dak Dam	Pu Chorb
					Pu Traeng
					Pu Les
				Saen Monorum	Pu Rang
8	International Volunteer of Yamagata (IVY)	Preah Vihea	Tbaeng Meanchey	Por	Por
					Por Khoeun
					Sralov Toung
			Cha'um Khsan	Cha'um Khsan	Cha'um Khsan
9	International Rice Research Institute	Prey Veng	Peam Ror	Prey Kandieng	Sdao
					Punlei
10	Mlup Baitang	Pursat	Kra Kor	Chheur Tom	Bam Nak
					Cham Chass
					Tean Prey
					Kabas
				Thnaot Chum	Chheu Teal
				Ou Sandan	Kraing Thom
			Phnom Kravanh	Pra Ngel	Kampeng
					Ou Srav
11	Agrisud	Siem Reap	Prasat Bakorng	Kandek	Kun Mek
					Chres
					Trapaing Teum
					Ou
					Spien Ka'ek
			Siem Reap	Krabey Riel	Prama
					Kouk Doung
					Krasaing
					Beung
				Chreav	Bos Kralanh
12	GRET	Siem Reap	Sotr Nikum	Kien Sangke	Chrey Khang Cheung
					Chrey Khang Tbong
				Dan Ron	Kouk Russey Cheung
					Kouk Russey Tbong
					Beng
				Pa Pel	Trapaing Trom
					Trach Pak
					Pa Pel Lech
				Sam Ra'orng	Sam Ra'orng Cheung
			Prasat	Balang	Thlouk Kambott
	12 organizations	**10 Provinces**	**17 Districts**	**40 Communes**	**81 Villages**

Appendix 2 Questionnaire for Farmer Interview

Communication Media Study

Questionnaire for Farmers

Date of interview: ……

Name of Interviewer: ……

Contact of interviewer: ……

Respondent status: ☐ Beneficiary of interview's organization

☐ Non-beneficiary of interview's organization

Part I: Inclusion Criteria for Respondent Selection

1. How much agricultural land do you own? (a qualified respondent must own 4 hectares or less of agricultural land which exclude the residential area)
   ……ha

Part II: Demographic Data

2. Information of the respondent

   Name: …….. Age: …… Sex: ☐ Male ☐ Female

   Village: …… Commune: ……..

   District: …… Province…….

3. How many people currently in your household?
   …… Person(s)

Part III: Income

4. What is the monthly average income of your household in the last one year (including on-farm and off-farm incomes)?

   …… Riels

5. What is your main income from agriculture in the last 1 year? (list only one main income generation activity)

   Source…….. (For example: rice or cashew) Income ……(Riel/year)

Part IV: Agriculture Activities

6. How many members are actively involved in agriculture in your family?

   …….. Person(s)

7. Do your agricultural practices comply with any of below standards? (multiple answers)
   1. Organic ☐
   2. PGS ☐
   3. GAP ☐
   4. Chemical-Free ☐
   5. Others, please specify…… ☐
   6. None ☐

Part V: Agriculture Information Reception

8. Do you usually attend informal education (training, field day, meeting, seminars…) when you want to learn new agricultural techniques or get the information about agriculture?
   1. Yes ☐
   2. No ☐

9. Do you usually read printed materials (technical books/manuals/leaflets/brochures/ newspapers/magazines…) when you want to learn new agricultural technique or get the information about agriculture?
   1. Yes ☐
   2. No ☐

10. Who are your main resource persons of information when you are looking for agriculture advice? (multiple answers)
    1. Agricultural extension officer ☐
    2. Inputs sellers ☐
    3. NGOs staff ☐
    4. Other farmers ☐
    5. Middle-men / collectors ☐
    6. Relatives ☐
    7. Cooperative ☐
    8. Micro-finance institution ☐
    9. Others, please specify…… ☐

11. What types of electronic devices, which can access to agricultural information, do you have? (multiple answers)
    1. TV ☐
    2. Radio ☐
    3. Smartphone ☐
    4. Tablet ☐
    5. Other…… ☐

12. On average, how many days per week do you access to the following media?

1. TV programs ……day(s)/week
2. Radio programs ……day(s)/week
3. Information and news on Facebook ……day(s)/week
4. Videos on YouTube ……day(s)/week
5. Websites ……day(s)/week
6. Other…… ……day(s)/week

13. Do you usually look for agriculture information from radio programs?
    - ☐ Yes, go to question # 14
    - ☐ No, go to question # 17

14. What agriculture topics have you listened? And on what radio channels?
    ……..

15. Did you try to put what you heard from the radio into practice on your farm?
    - ☐ Yes
    - ☐ No

16. What time do you think is the best for agriculture radio program?
    ……AM/PM (can be set on tablet)

17. Do you usually look for agriculture information from TV programs?
    - ☐ Yes, go to question #18
    - ☐ No, go to question # 21

18. What agriculture programs have you watched? And on what TV channels?
    ……..

19. Did you try to put what you heard from the TV into practice on your farm?
    - ☐ Yes
    - ☐ No

20. What time do you think is the best for agriculture TV program?
    …… AM/PM (can be set on tablet)

21. Do you have a Facebook account?
    1. ☐ Yes, if yes go to question # 22
    2. ☐ No, if no go to question # 23

22. Who created your Facebook account?
    ……..

23. Do you usually look for agriculture information from Facebook (personal devices or others' devices)?
    - ☐ Yes, go to question #24
    - ☐ No, go to question #27

24. What agriculture topics do you look for on Facebook?
……

25. Do you follow specific people or pages (e.g. key farmer, extension staff, companies, NGOs etc.) for agricultural information on FB?
☐ Yes, go to question #26
☐ No, go to question #27

26. Who or which organization?
……

27. What time do you usually access to Facebook?
…… AM/PM (can be set on tablet)

28. Do you usually look for agriculture information from YouTube?
☐ Yes, go to question #29&30
☐ No, go to question #31

29. What agriculture topics do you look for on YouTube?
……

30. What time do you usually access to YouTube?
…… AM/PM (can be set on tablet)

31. Do you have access to other means of getting information (e.g. advice from sellers, WhatsApp group, plant clinic)?
☐ Yes, go to question #32
☐ No, go to question #33

32. What topics?
……..

33. In your opinion, which are the best means of information dissemination about agriculture to reach farmers?
    1. Informal education (training, field day, meeting, seminars…) ☐
    2. Technical books/manuals) ☐
    3. Leaflets/ brochure, simple technical guides) ☐
    4. Radio programs ☐
    5. TV programs ☐
    6. Social media (Facebook, YouTube, Instagram, Messenger…) ☐

34. Please explain why you selected those means?
……..

Thank you!!!

Appendix 3 Guiding questions for Focus Group Discussion (FGD)

Communication Media Study

Guiding Questions for Focus Group Discussion

Interview location: ……. village …… commune

……. District …….. Province

Date: …….

Moderator: …….

Moderator's contact: …….

Number of Participant: ……. male ……. Female

1. Informal Education

1.1. How many of you (participants) have joined informal education (training, field day, meeting, seminars…) about agriculture organized by government agencies, NGOs, and private companies? (ask participants to raise hands)

……. (number of males)/ ……. (number of females)

1.2. Do you think informal education is a good way to disseminate agriculture information to farmers? Yes, why?

……..
……..
……..
……..
……..
……..

No, why?

……
……
……..
……..
……..

2. Printed materials

2.1. How many of you (participants) have read printed materials (technical books/manuals/leaflets/brochures/ newspapers/magazines…) published by governmental institutions/NGOs/companies for agriculture information? (ask participants to raise hands)

……. (number of males)/ ……. (number of females)

2.2. Do you think publishing tools are good ways to disseminate agriculture information to farmers?
Yes, why?

……..
……..
……..
……..
……..
……..

No, why?

……
……
……..
……..
……..

Which types of printed materials do you find useful? Why?

……
……
……..
……..
……..

3. Radio

3.1. How many of you (participants) have access to radio?

……. (number of males)/ ……. (number of females)

3.2. How many of you (participants) listen to radio for agriculture information?

……. (number of males)/ ……. (number of females)

3.3. Do you think radio is a good way to disseminate agriculture information to farmers?
Yes, why?

……..
……..
……..
……..
……..
……..

No, why?

……
……
……
……
……

4. Television

4.1. How many of you (participants) have access to TV?

……. (number of males)/ ……. (number of females)

4.2. How many of you (participants) watch TV for agriculture information?

……. (number)/out of……. (number)

4.3. Do you think TV is a good way to disseminate agriculture information to farmers?
Yes, why?

……
……
……
……
……
……

No, why?

……
……
……
……
……
……
……

5. Facebook

5.1. How many of you (participants) have access to Facebook?
……. (number of males)/ ……. (number of females)

5.2. How many of you (participants) look for agriculture information on Facebook?

……. (number of males)/ ……. (number of females)

5.3. Do you think Facebook is a good way to disseminate agriculture information to farmers?
Yes, why?

……
……
……
……

No, why?

……
……
……
……
……

6. YouTube

6.1. How many of you (participants) have access to YouTube?

……. (number of males)/ ……. (number of females)

6.2. How many of you (participants) look for agriculture information on YouTube?

……. (number of males)/ ……. (number of females)

6.3. Do you think YouTube is a good way to disseminate agriculture information to farmers?

Yes, why?

……
……
……
……
……
……

No, why?

……
……
……
……
……

7. Other Approaches

7.1. Beside above approaches, what are other sources that you depend on to get agriculture information from?

……
……
……
……
……

8. Conclusion

8.1. In conclusion, what tool do you think is the most effective one to disseminate agriculture information to farmers? And why?

……
……
……

Appendix 4 Online Questionnaire for Development Agencies

Communication Media Study - Online Questionnaire for Development Agencies

* Required

1. **Name** *

2. **Surname** *

3. **Email** *

4. **Name of the Organization** *

5. **Title/Position in your organization** *

6. **Head Quarter Address (Capital/Province)**

7. **Operational provinces**

8. **Field(s) of intervention in Agriculture** *

9. **Organization type** *
Check all that apply.

- [ ] Non-governmental organization
- [ ] Governmental organization
- [ ] Private sector
- [ ] Farmer federation
- [ ] Research center
- [ ] Other: _____

10. **1. What sort of agriculture information do you usually disseminate? (you can choose more than one)**
Check all that apply.

- [ ] Agroecology practices (organic agriculture, IPM, SRI, agroforestry, conservation agriculture, Integrating farming)
- [ ] Safe farming practices (GAP, Chemical-free)
- [ ] Intensive agriculture (increasing yield and promoting the use of agro-chemicals...)
- [ ] Agricultural marketing (value chain management, product branding…)
- [ ] Food processing (agricultural product value-added, product packaging…)
- [ ] Inputs advertisement (agrochemical, farm equipment…)
- [ ] Other: _____

11. **2. What are the dissemination approaches (general strategies) do you use to spread agriculture information to agricultural stakeholders?**

_____

_____

_____

_____

_____

12. **3. What types of dissemination tools have you used to spread agriculture information to beneficiary farmers? and why? (you can choose more than one dissemination tools and more than one reasons)**

Check all that apply.

	Effective and clear (in terms of knowledge spreading)	Leave long impact	Low cost	Reach more people	Highly visible to audience
Informal education (training, meeting, seminars…)	☐	☐	☐	☐	☐
Experience exchange (field day, on-site visit…)	☐	☐	☐	☐	☐
Publishing materials (technical books/manuals/leaflets/ brochures…)	☐	☐	☐	☐	☐
Radio talk show	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Social media (Facebook, YouTube, Instagram, Messenger…)	☐	☐	☐	☐	☐

13. **4. What types of dissemination tools have you used to spread agriculture information to non-beneficiary farmers? and why? (you can choose more than one dissemination tools and more than one reasons)**

Check all that apply.

	Effective and clear (in terms of knowledge spreading)	Leave long impact	Low cost	Reach more people	Highly visible to audience
Informal education (training, meeting, seminars…)	☐	☐	☐	☐	☐
Experience exchange (field day, on-site visit…)	☐	☐	☐	☐	☐
Publishing materials (technical books/manuals/leaflets/ brochures…)	☐	☐	☐	☐	☐
Radio talk show	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Social media (Facebook, YouTube, Instagram, Messenger…)	☐	☐	☐	☐	☐

14. **5. What types of dissemination tools have you used to spread agriculture information to consumers? and why? (you can choose more than one dissemination tools and more than one reasons)**

Check all that apply.

	Effective and clear (in terms of knowledge spreading)	Leave long impact	Low cost	Reach more people	Highly visible to audience
Informal education (training, meeting, seminars…)	☐	☐	☐	☐	☐
Experience exchange (field day, on-site visit…)	☐	☐	☐	☐	☐
Publishing materials (technical books/manuals/leaflets/ brochures…)	☐	☐	☐	☐	☐
Radio talk show	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Social media (Facebook, YouTube, Instagram, Messenger…)	☐	☐	☐	☐	☐

15. **6. What types of dissemination tools have you used to spread agriculture information to public audience? and why? (you can choose more than one dissemination tools and more than one reasons)**

Check all that apply.

	Effective and clear (in terms of knowledge spreading)	Leave long impact	Low cost	Reach more people	Highly visible to audience
Informal education (training, meeting, seminars…)	☐	☐	☐	☐	☐
Experience exchange (field day, on-site visit…)	☐	☐	☐	☐	☐
Publishing materials (technical books/manuals/leaflets/ brochures…)	☐	☐	☐	☐	☐
Radio talk show	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Social media (Facebook, YouTube, Instagram, Messenger…)	☐	☐	☐	☐	☐

16. **7. What types of dissemination tools have you used to spread agriculture information to other organizations? and why? (you can choose more than one dissemination tools and more that one reasons)**

Check all that apply.

	Effective and clear (in terms of knowledge spreading)	Leave long impact	Low cost	Reach more people	Highly visible to audience
Informal education (training, meeting, seminars…)	☐	☐	☐	☐	☐
Experience exchange (field day, on-site visit…)	☐	☐	☐	☐	☐
Publishing materials (technical books/manuals/leaflets/ brochures…)	☐	☐	☐	☐	☐
Radio talk show	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Social media (Facebook, YouTube, Instagram, Messenger…)	☐	☐	☐	☐	☐

17. **8. At the moment, what are your main constraints to disseminate agriculture information? (you can choose more than one)**

Check all that apply.

- ☐ Lack of time to prepare effective tools
- ☐ Lack of references to design tools
- ☐ Lack of budget
- ☐ Other: _____

18. **9. In your opinion, which are the most effective means of information dissemination to farmers in current context? (you can select more than one)**

Check all that apply.

- ☐ Informal education (training, meeting, seminars…)
- ☐ Publishing tools (technical books/manuals/leaflets/ brochures…)
- ☐ Radio programs
- ☐ TV programs
- ☐ Social media (Facebook, YouTube, Instagram, Messenger…)
- ☐ Other: _____

19. **10. Please explain why you selected above options in Q9?**

_____

_____

_____

_____

_____