Communication Channels for Agricultural Information to Farmers: A Case Study in Kampong Speu

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Abstract
The agricultural sector forms the backbone of the global economy and provides the major revenue for about 50% of the world’s population. Cambodia is not an exception. In view of this, agriculture has been one of the priority visions for 2030, which aims at transforming Cambodia into a middle income country and a country that is rapidly industrializing towards 2030. This study sought to establish the communication channels used by farmers in Kampong Speu province to access agricultural information, the impact of agricultural information and the challenges the farmers experience while trying to access the information. The target respondents of the study were the one hundred and twenty (120) farmers in the province of Kampong Speu, and the researcher was able to access 102 who comprised 85% of the total population of the respondents. Data was collected through a structured survey questionnaire; individual interviews, focused groups, and observations were also made during the farm visits. The data was collected using narrative analysis and exploratory analysis to graphically summarize the situation. Conclusions were drawn from the results of the data and analyses as follows: (1) farmers do not receive enough market information from independent public institutions and from civil society organizations; (2) NGOs and district agricultural officers are the favored institutions to consult for addressing constraints on farming activities; (3) The most common source of information came from middle men; (4) Farmers also preferred information sources and channels including farmer groups, district agricultural officers and village chiefs; (5) 95% of the farmers identified middlemen and farmer-to-farmer interaction (villagers) (88%) as the most preferred and reliable source of information; (6) Non-governmental organizations, VMN members, private information providers and the print media emerged as the least trusted sources of agricultural information; (7) Farmers received very little market information from local administrative and technical officials; (8) Radio is the most accessible medium of communication to farmers rather than newspapers and television. Radio as a mass media channel is repeatedly finding itself the preferred medium for communicating information about agriculture innovations as its reach far exceeds any other mass media channel. As such, radio is a powerful tool for information dissemination especially for hard to reach rural audiences as supported by the study of Myers 2008; (9) Ninety per cent of government officials said their institutions are involved in improving farming techniques, but this figure varied with 40% stating that they were involved often while another 40% said that their contact with villagers was less frequent. Government officials address farmers’ needs mainly through providing market information, vaccinations and training;
the main methods of communication are through village chiefs, commune chiefs and direct visits. A key to ensuring improved agricultural production is the role of the government official at village, district and commune levels.

Villagers participate in the village and commune development plans, but do not contribute to evaluating programs. Public institutions do not use direct methods e.g. village meetings, to learn about farming and farming issues in order to improve the agricultural sector. This was a preferred method of information sharing for many farmers and should be considered as part of any development strategy in the future.

Based on this result, the rural community receives more agricultural information from interpersonal sources compared to the mass media sources which is perhaps due to the frequency and the quality of interpersonal communication occurring between members of the rural community and interpersonal sources such as friends, family members and villagers. A close relationship between these groups enables agriculture information sharing because they are trusted by the community. Specific recommendations to improve communication and enhance agricultural productivity conclude this paper.

I. Introduction

The agricultural sector remains a significant part of the Cambodian economy, with about 80% of Cambodia's population and most of its poor relying on agriculture for their livelihood. Agriculture provides about 35% of Cambodia’s GDP and involves 56% of its labor force. The main products are rice, rubber, corn, vegetables, cashew and cassava. Unprocessed agricultural exports were projected to be more than 90% of total agriculture exports as a result of improved technologies, more irrigation systems and better access to mechanized services. To enhance the development of the agriculture sector, the government's policy increasingly recognizes the importance of communication channels. This is because the expansion of agriculture depends on the farmers’ knowledge and skills brought about by information that flows from the source to farmers. Access to appropriate information and knowledge is one of the biggest determinants of agricultural production (Masuki, Mowo, Kamugisha, Tanui, Tukahirwa & Adera 2010). This information includes changes in the environment and culture. Farmers need to interact with multiple sources of information to shape and enrich their knowledge base (FAO, 1995, from the study of Petronila Agnetti Ogola) to maximize output and minimize costs. There has also been a high output of agricultural research about new technologies that needs to be disseminated to farmers.
It is important for farmers to access markets both as producers and consumers. However, the rural poor lack physical access to markets (e.g., rural roads linking villages to market areas). The poor also lack the market-related skills and services needed to survive in competitive markets. In addition, the rural poor not only are usually less informed about markets and opportunities but also lack effective collaboration with the local authorities. They are poor in communication or have no confidence in risk management and decision making regarding any issues or challenges on the farm. For the rural poor in remote areas, efforts are needed to disseminate market information through digital means of communication (e.g. radio, television, mobile phones, newspapers, even the Internet) and non-digital means by face-to-face and group discussion, seminars, training, advocacy and farmers associations in order to increase their chances of identifying and undertaking profitable and sustainable activities.

This research paper will identify the communication channels used by farmers and evaluate these channels in terms of development projects in the Kampong Speu province. This paper will also identify the challenges faced by farms when trying to access information, and it will also evaluate the government’s involvement in the improvement of farming by using different communication channels to reach farmers.

The literature encompasses relevant theories, foreign and local research on agricultural communication, and also an evaluation of existing communication methodologies. The discussion will also include the concept of agricultural communication and the role of communication channels in disseminating information to farmers, communication channels used by farmers in Cambodia, the role of communication channels in improving agriculture in Cambodia, the type of information needed by the farmers, sources of information, and factors affecting dissemination of information, media and marketing.

The significance of this study is that the results will help raise standards of living in the poor villages of Cambodia. Also, the results of the research will help to improve Cambodia’s agricultural sector by improving knowledge about rural market communication channels and how to improve them. Most importantly, this research will strengthen collaboration between farmers and government officials and it will also serve as an information base for reviewing policy, legislation and processes. Finally, it is hoped that the research findings will help to achieve the implementation of the Rectangular Strategy of the RGC in poverty reduction and good governance.
This study is based on a number of theoretical perspectives, including uses and gratification theory (Lin, 1999), rational choices theories which include utility maximization framework and social exchange theory (Strebel et al., 2004) adoption-diffusion theory (Rogers, 2003). Uses and gratification theory (UAG) perceives the message recipient as the one who selectively chooses, attends to, perceives and retains the media messages on the basis of the recipient’s needs. UAG theory acknowledges that users are goal driven decision-makers who select information communication channels that meet their needs. Social exchange theory suggests that extension clients are likely to use a particular source-channel combination when the social benefits are greater than the social costs. This theory also suggests that benefits are more likely to be realized when information is more relevant to clients’ needs and when channels provide detailed individualized information.

Agricultural communication as a branch of study in agriculture deals with the planning and management of agricultural information and methods of effectively communicating agricultural technology in farmers in order to bring about desired behavior changes and their farming practices for improved production (Age, et al., 2012). Agricultural communication can be defined as the exchange of information about agricultural and natural resources industries through effective and efficient media such as newspapers, magazines, television, radio, telephones and the web to reach appropriate audiences. Agricultural communication as a wide and varied field includes news writing, graphic designs, video and radio reporting and producers, special event planning, photography, web design, advertising and also public relations (Telg & Irani 2012). Sustainable development in agriculture is much dependent on generating appropriate technologies and creating effective communication strategies for dissemination of techniques to end users (Dimelu & Anyanwu, 2005, literature from Petronilla Agnetta Ogola).
Agricultural communication has evolved throughout the years. In the US in the 1700s, when the country was mainly agricultural, the means of communication were by word of mouth, from farmer to farmer and most information about how to grow crops came from colonists (Boone, Meisenbach, Tucker, 2003). In December 1777, the first American Agricultural magazine began its publication (Mott, 1968).

The early 1900s saw the growth of agricultural magazines and rural weekly newspapers about farming. Between the 1800s and 1920, the number of farm magazines and newspaper grew from 157 to 400 in circulation about farming, and grew to about 1 million in 1880, and then to around 17 million by 1920 (Boone et., al, 2000). Beginning in 1920, radio became the major communication channel for agricultural farming.

The significance of communication and communication tools in agriculture cannot be overemphasized. These are the concepts that aid in the diffusion of agricultural innovations and allow sharing of knowledge.

The use of mass media is inclined towards development communication and the development of media theory which advocates media support for the efforts of the government or an existing political regime to bring about national economic development. According to Moemeka (1965), “development communication is the application of the processes of communication to the development process. It is the use of principles and practices of exchange of ideas to the development objectives”. Development theory is premised on the perception that the problems that assail developing countries are due to ignorance and that change can only occur through provision of information. “Development communication seeks to create an atmosphere for change as well as providing innovations through which society may change”(Kumar 2011). Moemeka further posits that “mass communication in the development approach accords the importance of self-development at the village and neighborhood levels. With this approach, mass media is largely used to transmit information of a background nature to a group, village or community about their expressed needs and to disseminate innovations that they may meet some needs.

Agenda setting theory has been challenged by scholars who are of the view that it does not always work, Griffin (2009) posit that the “media agenda effects the salience of some issues for some people some of the time”. This is perhaps what informed McCombs in 1994 when he suggested that agenda setting theory “ignores the influence of social networks. These social networks provide various benefits to farmers such as identification, social rewards, social protection, prestige, and belonging among others. All these social networks and agencies may influence farmers by setting and even imposing their various agendas.
The concept and the use of communication channels or media is of great importance because the knowledge of this will provide keys for understanding and outcomes in the communication process. Exposure to (or use of various communication media or channels) is a precondition for any effect of media content on people to occur. It seems appropriate that the influence of any medium in a communication situation or on the message depends not merely on the type of media but also on how it is used, or the use to which it is put.

Other theoretical perspectives include rational choices theories such as the utility maximization framework and social exchange theory (Strebel et al., 2004), and adoption-diffusion theory (Rogers, 2003). Uses and gratification theory perceives message recipients as one, who selectively choose, attend to, perceive and retain the media messages on the basis of one’s needs. This focus shifts from media production and transmission functions to the function of media consumption. The theory acknowledges that users are goal driven decision-makers who select information communication channels that meet their needs. Social exchange theory suggests that extension clients are likely to use a particular source-channel combination when the social benefits are greater than the social costs. This theory also suggests that benefits are more likely to be realized when information is more relevant to clients’ needs and when channels provide detailed individualized information.

Of all mass communication media, radio is pervasive for many reasons: “radio dominates the media output of religious media particularly due to the lower economic and regulatory entry barriers for owners than those of newspapers, or television. Moreover, radio allows owners to expand the broadcast spectrum beyond urban areas, avoid economic barriers to consumers posed by high priced newspaper or television subscriptions and enables the medium to address high illiteracy rates of population AMDI (2006:310). Radio’s unique characteristics, pervasive and penetrative, make it the preferred media channel and more so the nature of its delivery, “talk” that is carried through all radio formats; features, drama, music, news, and documentaries among others appeal to the audience differently. Myers (2008:18) observes that radio programs of a development nature “work better on radio than television because radio is better for communicating complex ideas and has added value of the listener’s imaginations.” However, radio programs will attract a large following if well produced, and will also depend on the content, format or style and presentation. Myers (2008:19) further observes the challenges development content on radio faces. African radio, according to Myers, produces programs within a tight budget that require retaining dedicated teams of writers, actors, technicians, editors, vehicles, fuel, etc. Myers further argues that “it is therefore no accident that the African airwaves are full of live studio-based programs such as news, DJ-led music shows, call-in programs, and live studio discussions. This gives African radio a very fresh sound, but it has
its danger in terms of broadcasting unconsidered opinion, myth and rumors, trivia and at times, incitement to political or ethnic violence, when live discussions are badly managed.

Radio therefore remains the most cost effective means of building awareness and supporting the adoption of new farming practices by small scale farmers. Although radio is the most popular mass medium, agriculture programming in most Asian countries is executed with little participation from the farmers and extension agents.

However, significant statistics that boost farming production and marketing through radio as the channel of communication include:

- Along with radio, mobile phones are the most accessible forms of technology, covering over 70% of the world’s population. Training via such technology can be particularly beneficial. (Source EFA Global Monitoring Report, 2012, p. 290).
- AM/FM radios count for 86% of the total time adults aged 25-54 spend listening to three main audio platforms. Adults listen to eight times more of AM/FM radio than satellite radio and seventeen times more than internet audio streaming. (Source: Where Radio Fits in the Media Landscape”, Arbitron, 2012).
- AM/FM radio is heard by a variety of decision influencers with 43% of respondents aged 25 to 54 saying they listen with their children, 38% listen with their spouse or partner. (Source: Where Radio Fits: Radio’s Strength in the Media Landscape, Arbitron, 2012).
- Farmers engaged in the design and development of farm radio programming were almost 50% more likely to take up agricultural practices deemed to improve their food security than passive listeners. (Participatory Radio Campaigns and Food Security: How Radio can Help Farmers Make Informed Decisions ,Kevin Perkins, Doug Ward, Mark Leclair, Farm Radio International, 2011, p.5)
- Weekly SMS alerts sent to the phones of listeners 30 minutes prior to a broadcast can boost radio campaign listenership by 20%. (The new Age of Radio: How ICTs are Changing Rural Radio in Africa, Bartholomew Sullivan, Farm Radio International, 2011, p. 5).
- 25 out of 51 countries (49%) have radio channels available on a combined platform, while 13% are available on cable only and 8% on satellite only. (UNESCO Institute for Statistics, UIS).
- In Southeast Asia, Thailand tops the region’s chart with about 5,000 community stations - most of them operating without licenses. In populous Indonesia, community radio has also taken off rapidly, but the number of stations is in the hundreds rather than thousands. The
Philippines count more than 55 community radio stations independent of government and commercial interests operating outside the cities and using low powered transmitters. (Voices from Villages: Community Radio in the Developing World. CIMA, 2011, p.10).

- Radio is the most reliable channel for distributing news, information and entertainment in the Philippines’ rural interior, where mountains often impede TV signals. According to the National Commission on Culture and the Arts, radio reaches 85% of household in the country, whereas television reaches just under 60%. (Philippines: Media and Telecoms Landscape Guide. Infoasaid 2012, p. 13).

II. Communication in Cambodia

In Cambodia, the first communication channel started from word-of-mouth communication, regular markets that brought people together periodically, pilgrimage to holy sites when much information was exchanged among participants beyond religious thoughts and ideas. The range of communication was expanded by transportation technologies that are not considered part of ICT - automobiles, bicycles, trucks and other mechanical means that facilitate people’s movement. As literacy has spread, and printing in the form of manuals, books, fliers, handouts, etc., increased, these became important for transmitting information within rural areas. These means of communication enabled the literate to communicate with those who had no or little education. A major innovation for dissemination of information to farmers was introduced and expanded in the 20th century, particularly extension services in the form of demonstrations, crop plots, training, to make the content of communication more visual and experiential and to acquaint farmers with resource and technology opportunities for their own financial interests. These were more about organization than technology, but they complemented oral communication with written media, then with audio visual technology (recordings, films, radio, television, etc).

Radio formats in Cambodia are designed to reinforce messages in order to bring about change among farmers to adopt new farming techniques for improved productivity. Radio producers do this through program planning which informs the selection of topics, presentation of the topics on radio with interviews from selected experts and farmers, to enable farmers to effectively use radio in their knowledge sharing efforts and contribute to improved livelihoods on a large scale. Nearly all Cambodian farmers are radio listeners and use radio as a source of news and information rather than for mere entertainment. Information that the radio provides to Khmer farmers is: better farming methods, improved seeds, timely planting, agroforestry, better harvesting methods, soil conservation, marketing, post-harvest handling, link from farm to market, raise general awareness of opportunities, provide technical information, demonstrate or train, diagnose problems and recommend solutions, respond to follow-up questions raised by farmers, provide mass advisories, facilitate access to credits and inputs, assist with business planning, conduct surveys,
monitoring and evaluation, and diversification. Rural radio gives farmers an opportunity to interact with each other and other relevant authorities such as extension workers, crop and animal experts, through format like live talk shows, phone in programs, and location broadcast. Since rural radio is community based, it can be used to mobilize people towards community development work such as construction of dams, protected wells and immunizations of animals.

In 2015, TV was still the most dominant source of news in the country, followed by Facebook/internet and radio according to the Open Institute. One of the most important shifts in the industry, as reported by the Open Institute study, the rise of Facebook was “the most important source of communication about Cambodia”, displacing TV for the first time. The study found that the most important source of news about Cambodia was facebook/Internet (30%) with a total of 4.8 million users according to geeksincambodia.com, followed by TV (29%), word-of-mouth (23%), and radio (15%). Print advertising will decrease as internet use continues to rise, with the internet eventually becoming the number one form of advertising in the future. Facebook is a huge source in Cambodia. Billboards and tuktuk advertising remain popular. Newspapers only reach rural areas slowly and large numbers of farmers are illiterate. Broadcasts are often at the wrong times for farmers to listen, unless they take their radios to the field with them.

III. Role of Communication Channels in Disseminating Agricultural Information

Information plays a key role in agricultural development and production and effective communication will help facilitate mutual understanding among farmers, agricultural scientists and extension workers (Agbola 2000). Knowledge and information are basic ingredients for increased agricultural production and productivity. Access to agricultural information is therefore one of the countervailing factors that contribute towards increased food production. Mass media, commercials and government agencies and agents as well as personal contact have assumed a major function of disseminating information about farm matters with other farmers, friends and relatives. Market information can be shown to have significant benefits to farmers, and also to traders. Unfortunately, information on market prices, quantities traded and other marketing-related matters rarely reaches farmers in developing countries. Farm radio would appear to represent an important way of overcoming this problem, if difficulties relating to information availability and cost can be overcome. Farmers can use market information in two ways: Current or Immediate information to negotiate with traders, to decide whether or not to go to market and, in some case, which market to visit or supply. Historical information, such as a time series of prices over several years, can be used to make decisions regarding product diversification or the production of out-of-season crops. It may even be used to help basically subsistence farmers identify opportunities for cash income. At the simplest
level, the availability of market information can enable farmers to check on the prices they receive vis-à-vis the prevailing market prices. One of the best examples of this comes from Indonesia, where market prices for vegetables are broadcast daily on radio stations for all major production areas. Most countries have introduced government-run market information systems (MIS) at one time or another. By and large these have failed to meet their objectives and have experienced problems of sustainability. In Africa, MIS have tended to thrive while supported by donor projects, only to fade away when the donors leave, until resuscitated by a new donor. The flaws of this system lie in that they pay inadequate information to the quality of data collected, which can often be poor and not an accurate reflection of prevailing market prices. In many countries, market information services are doing a good job, and in others they are working hard to overcome problems. Farmers can of course obtain information from farmers or from traders but both sources are unreliable, for obvious reasons. Information available to rural traders on urban market prices is almost certainly more up-to-date than that provided by market information services, as not only do traders regularly visit these markets, but they also learn about market conditions from other traders. Increasingly, traders are now in direct contact with markets by standard telephone and, where available, cellphones.

IV. Marketing and Media in Cambodia

Marketing and media is evolving daily in Cambodia and competition is heating up as new players enter the scene. As the industry continues to develop, there are more and more options available to help spread communication. This includes video and multimedia production, translation, design, media buying and graphic design. The market has recently seen a rise in branding agencies as Cambodia continues to embrace brands. Many companies offer Facebook and social media marketing packages – controlling Facebook feeds to maximize exposure of one’s business. Marketing events are popular. Government and non-governmental organizations are increasingly interested in digital marketing. Others are engaged more in market research and analysis conducting surveys on consumer activity and in some cases building on their analysis with the provision of strategic advice and consulting services such as Publicity Co and TNS Global. However, word-of-mouth is still networking to farmers. Every Cambodian network has a thought leader: That could be anyone; it could be the local mechanic. In the west, it might be a particular blogger who follows trends, whereas here in Cambodia, it’s your uncle or your cousin or local businessman. And if these thought leaders recommend your company, you are favored in that network.

The major challenge when it comes to agricultural research are copycats. In Cambodia, there is little recourse for this under current intellectual property laws. Khmer communication is quite direct and factual, so the use of metaphorical messages or idiom is often lost. It is important to be aware of what can translate from English to Khmer when writing copy. Another common problem is promotional pitfalls. With
promotions and give-aways being a popular tool in the Kingdom, overdoing it can at times be a problem. Cambodia is lacking in the variety of talent available for events. A solution is to get acts from the neighboring countries (B2B Cambodia).

V. Government policies and strategies to improve the agriculture market

The Royal Government of Cambodia (RGC) articulates its agriculture policy in the Rectangular Strategy "to improve agricultural productivity and diversification, thereby enabling the agriculture sector to serve as the dynamic driving force for economic growth and poverty reduction." Key elements of the agricultural development policy draw upon the Cambodian Millennium Development Goals (CMDG) 2003, the Socio-Economic Development Plan (SEDP-II) 2001-2005 and the National Poverty Reduction Strategy (NPRS) 2003-2005, and focus on 1) improving agricultural productivity and diversification; 2) land reform and mine clearance; 3) fishery reform; and 4) forestry reform (RGC 2004).

Complementing the agricultural development policy is Cambodia's National Strategic Development Plan 2006-2010 (NSDP), which has the overall aim "to reduce poverty, and implement the government's Rectangular Strategy for the enhancement of the agricultural sector" (RGC 2006). The NSDP further stipulates the primary need to develop a national Strategy for Agriculture and Water (SAW) by 2006. However, SAW 2006-2010 was only completed in 2007, lagging one year behind the plan. The SAW laid out five programs: institutional capacity building; food security; agriculture and agri-business; water resources management; agricultural research and de, development (MAFF & Mo WRAM 2007).

An Agricultural Sector Strategic Development Plan 2006-2010 formulated by the Ministry of Agriculture, Fisheries and Forestry (MAFF) also outlines seven priority goals, and the constraints and actions to be taken to reach these goals. These include: 1) food security, productivity and diversification; 2) improving and strengthening agricultural research and extension systems; 3) market access for agriculture products; 4) institutional and legislative development framework; 5) land reform, reform land tenure and pro-poor land access; 6) fisheries reform; and 7) forestry reform (MAFF 2005).

Recently, the government launched a policy to promote paddy rice production and milled rice export. This policy refines the government's major strategic policy measures to promote agricultural development, with emphasis on a new pace and scale. The aim is to further strengthen the foundations for economic growth, accelerate poverty reduction, and improve the living standards of the Cambodian people. Towards this end, this latest policy adopts a three pronged-strategy: productivity enhancement, diversification and agricultural commercialization (RGC 2010).
Other directives for agricultural development, food security and poverty alleviation include:

- The National Water Resource Policy
- Strategic Development Plan on Water Resources and Meteorology 2009-2013
- Circular No. 3 on Food Security and Nutrition in the Kingdom of Cambodia
- Statement of the government of Cambodia on the national fishery sector policy
- National Fisheries Sector Policy and Law on Fisheries (MAFF 2006)
- National Programs for Household Food Security and Poverty Reduction 2007-2011
- Strategic Framework for Food Security and Nutrition in Cambodia 2008-2012
- National Adaptation program of Action for Climate Change (NAPA)
- Law on Investment (5 August 1994)
- Law on Amendment on the Law on Investment (23 March 2003)
- Sub-Decree on Mortgage and Transfer for the Right over an Economic land Concession (29 August 2007)
- Royal Decree NS/RK/0609/009 (20 June 2009) to provide incentives for agricultural development in Cambodia.

The Government of Cambodia uses three domains of resources, technology and organization to make different and respective contributions to the capacities of the country, communities and individuals for meeting farmers’ needs. Resources represent the broad category of inputs into process production, whether these are economic, social or political, that can meet needs and wants. Technology refers to everything from knowledge to machinery that is required to convert available inputs efficiently and effectively into more or valued inputs for meeting farmers’ needs and wants more fully, reliably or innovatively. Organization then pertains to the social, economic, administrative and other structures that can manage the various processes of production that are necessary to meet human needs and wants. This includes functions like accessing resources and adapting technology. These meta-factors of development resemble land, labor and capital in that there can be diminishing returns in any one of these three domains if it is to be worked on and expanded without making appropriate modifications and increases in the other or two. Further, any of these three can become a development bottleneck needing particular attention and improvement so that these three Meta factors can contribute productively and in a complementary way to meet needs and wants and enhance capacity. These three broad categories should be regarded as based in organizations where technology is employed to utilize available or acquirable resources to best advantage. These are not simply separate domains. Organizations can be a crucial factor in expanding the acquisition of resources and then managing them to the best advantage (Norman Uphoff 2012). However, overall, there is a lack of
recent research on the communication habits and needs of farmers in Cambodia, and the following survey sample can hopefully generate further insight, and also point towards more substantial research that can help to address this gap.

**VI. Finding the Best Answers**

This study uses a combination of two approaches: desk research and field survey. The desk research included reviewing policy documents, literature reviews and an overview of statistical data. The field survey consisted of a farmer survey, interviews with villagers, a group interview with VMN members, government officials and others involved. The field survey was held in Kompong Speu Province, where structured interviews were used. A short description of each tool is given below.

Questionnaires were designed by the researcher and validated by professors. Data used was primary data using questionnaires and secondary data from information taken at the FLD-Farmer Opportunity Project. Interviews were also undertaken using two methods: Individual Interview and Focus Group Discussion. There were two types of individual interview: 1) Individual Farmer Interview, and 2) Governmental Official Individual Interview. The villagers were randomly selected by FLD staff. The interviewees were recorded at random, but to ensure that diversity of participants in term of geography, groups, expertise and hierarchical levels were observed. The Focus Group Discussions generated keen debate, however it was felt that the best way of representing the ideas discussed was to ask the interviewees to consolidate their thoughts using a ranking exercise. The participants of the focus group discussion generally were the people who are the members of the Village Market Networks or saving groups of FLD, different interest groups, and the village development committee, Village Chiefs, Commune Authorities and farmers. Collected data was processed through the SPSS program.

Market information received in 2010 that helped to make decisions for investment in farming activities was:

<table>
<thead>
<tr>
<th>#</th>
<th>Q1.1 Types of Market Info. Received</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Price of Fish</td>
<td>88.3</td>
<td>11.7</td>
</tr>
<tr>
<td>2</td>
<td>Price of Pork</td>
<td>85.2</td>
<td>14.8</td>
</tr>
<tr>
<td>3</td>
<td>Price of Rice</td>
<td>84.5</td>
<td>15.5</td>
</tr>
</tbody>
</table>
On average, 53% of the people knew about prices of the above products. Most of the people, knew prices that were related to their consumption such as the price of fish, pork, rice, chicken, vegetable, beef, price of gasoline, price of ingredients and prices of agricultural inputs. This result had served as a basis for investment decision-making. Farmers can therefore forecast the possible income for any production business they intend to make.

Ways of Receiving Information

<table>
<thead>
<tr>
<th>Product</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price of Chicken</td>
<td>83.6</td>
<td>16.4</td>
</tr>
<tr>
<td>Price of Vegetables</td>
<td>77.7</td>
<td>22.3</td>
</tr>
<tr>
<td>Price of Beef</td>
<td>74.8</td>
<td>25.2</td>
</tr>
<tr>
<td>Price of Gasoline</td>
<td>71.1</td>
<td>28.9</td>
</tr>
<tr>
<td>Price of Ingredients</td>
<td>46.4</td>
<td>53.6</td>
</tr>
<tr>
<td>Price of readymade clothes</td>
<td>11.8</td>
<td>88.2</td>
</tr>
<tr>
<td>Price of Cereals</td>
<td>5.6</td>
<td>94.4</td>
</tr>
<tr>
<td>Price of agri. Inputs</td>
<td>4.2</td>
<td>95.8</td>
</tr>
<tr>
<td>Others</td>
<td>2.3</td>
<td>97.7</td>
</tr>
</tbody>
</table>

**Total** 635.50 564.50
**Average** 52.96 47.04

Table 1

Figure 1 based on the above chart reveals that farmers mostly received market information from middlemen (up to 95%) and neighbors or villagers (88%). They receive some information from media (5%), V.M.N. representatives (5), private information providers (4.2%) and NGOs (3%). Results showed that the farmers’ biggest source of information came from middlemen and villagers, usually face-to-face. At the other end,
farmers’ information from the local administrative and the technical official as well as media is very little because according to the interviews, most farmers do not read newspapers or watch television at home and only a few had radio. Also, visits by local administrative and technical officials and advocacy were not as significant as being able to provide adequate information as needed. Furthermore, according to interviews, most farmers wanted to listen also to new farming techniques on radio but most of them did not own a radio. Overseas, radio has been a tool used extensively for educational programs in teaching, health, literacy training, nutrition and promotion of changes in farming practices to improve agricultural practices (Nwaerondu & Thompson, 1987).

**Improved Farming Activities as a Direct Result of Market Information**

![Improved Farming Activities as a Direct Result of Receiving Market Information](image)

**Figure 2** shows that farmers’ involvement in production is largely rice production, livestock and vegetables. According to interviews, these are the most saleable and profit making products, followed by fruit and root crops. This information involved villagers and the middlemen with whom they have direct contact.

**Ways of managing risks associated with farming activities**

![Risk Management Confidence](image)
Figure 3 based on the above chart, shows that most of the farmers utilized their own skills (47%) and nearby services such as village-livestock agents (43%), NGOs (31%), community representatives (15%) and the C.C. (6%) rather than using district and provincial related departments. This means that the advanced skills or services of the agricultural department have not reached the community level.

**Degree of confidence in managing associated risks**

![Risk Management Confidence Chart](image)

Figure 4 shows that 59% have “Little” confidence in risk management ability; 23% have no confidence; while 15.3% have moderate confidence. This result shows that because farmers have little knowledge about managing activities in the farm safely, many have very little confidence that they can manage anticipated risks because information about managing risks is very limited.

**Ways to Promote Domestic Products**

![Ways to Promote Domestic Products Chart](image)

Figure 5 shows that in promoting domestic produce, the farmers desired to use organic fertilizers (94%), reduce pesticides (78%), reduce chemical fertilizers used (71%) and try to meet market demand (52%). Many of them believe that marketing of products through an advocacy program has little impact on promotion of agricultural products. According to interviews, farmers believe that consumers today are well-informed and health conscious and they choose products that are healthy, safe and contain lesser chemicals that are not good for health. In addition, those interviewees who responded to questions about good promotion of agricultural products believe this is facilitated by meeting the market demands of these
products. However, the market situation today according to respondents showed that there is only limited production of different agricultural varieties (shown in figure 2) where most of the farmers’ preferential production is on rice, livestock and fruit.

Payment Capacity on the Farmer Information Service (in $)

Figure 6 shows that seventy seven per cent of the farmers are willing to pay for the suggested/tested farming information service. Preparedness to pay ranged from, on average, $0.07 to $2.43. Only 0.9% were willing to pay more than $2.43; while 23% of them cannot pay at all because of they are poor. Some of them were not willing to pay at all.

Convenient Means for Receiving the Market Information Service

Figure 7 reveals that most find face-to-face meetings (84%) and training courses (76%) as the most convenient ways of receiving market information. They consider the telephone and letter of correspondence as less effective. Across the globe, face-to-face communication remains a key tool in farmers’ learning and obtaining information. It is the most basic and persuasive method of obtaining information as the farmers can readily ask follow up information, ask questions, and other issues can be readily answered by authorities. Training courses for farmers are also another method for improving farmer to farmer
communication through presentations of visually illustrated processes, methods, graphs, illustrations. These assist with decision-making whether to adopt or not to adopt agricultural practices.

Radio as Means of Communication

![Listen to Radio](image)

**Figure 8** shows that 58.6% of farmers listen to radio; 22.8% listen moderately; 15.3% have little interest in listening and 3.3% do not listen to radio. According to interviews, radio is a popular means of communication but many do not have a radio.

Agricultural Products for Family Consumption

![Agricultural Products for Consumption](image)

**Figure 9** shows all agricultural products produced by farmers for family consumption. Almost all farmers produce rice (100%), vegetables (97%) and chicken (100%) for family consumption. Next to these, 71% of them raise pigs, 63% raise cattle, 53% plant cereals, 24% farm fish and 21% produce other agricultural products for family consumption. They also produce other agricultural products such as lotus, watermelon, fruit trees, root trees and raise ducks, and palm sugar. According to interviews, as much as possible, they wanted to produce products with lesser amount of chemicals to protect the family from the hazards brought about by these chemicals according to information they received on mediums of communication such as group discussions, face-to-face with neighbors and friends who are knowledgeable.
Agricultural Products for Sale

<table>
<thead>
<tr>
<th>Types of Agricultural Products</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Vegetables</td>
<td>78.9</td>
<td>21.1</td>
</tr>
<tr>
<td>Chicken</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Pig</td>
<td>94.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Cow/Buffalo</td>
<td>68.4</td>
<td>31.6</td>
</tr>
<tr>
<td>Cereals</td>
<td>47.4</td>
<td>52.6</td>
</tr>
<tr>
<td>Fish</td>
<td>21.1</td>
<td>78.9</td>
</tr>
<tr>
<td>Other</td>
<td>21.1</td>
<td>78.9</td>
</tr>
</tbody>
</table>

Table 2 shows products produced by the farmers that they think are saleable and there are market demands according to direct information that they received from middlemen. Besides the above products, a number of people also produce fruit trees and a few of them also produce root palm sugar for sale.

People ask for advice when faced with farming constraints
Figure 10 states that when farmers are faced with a constraint on their farming, they generally go to the District Agricultural Office (50%), NGOs (47%), Village Chief (37%), model farmers (37%), cc (34%) because these are the direct channels where they can talk face-to-face and ask for advice. Accordingly, these channels are the most easy and accessible means to answer queries and give reliable advice.

Long-term natural resource management

Long-term resource management is of two types - the impact of agricultural techniques, and climate change on sustainable natural resource management.

Figure 11 reveals that there is a range of negative effects caused by present agricultural techniques on the natural environment. Many respondents were concerned about the impact of harmful insects (53%), the effect on human & animal health (47%), loss of soil fertility (40%), decrease in biodiversity (32%), and soil erosion (21%). Only 16% said that soil fertility had improved. This information was taken by the farmers from advocacy on the effects of modern farming techniques. This advocacy was organized by NGOs responsible for farming accountability and the harmful effects not only on human and animal health and soil fertility but also on human health. Certain measures were taken to lessen this impact as advocated
to farmers was to take action such as reducing dirty water, improving nutrient use, carrying out land risk assessments and managing water margins according to interviews conducted with farmers.

**Preventive measures for climate change to maintain growth of agricultural yields**

![Graph](image)

**Figure 12** indicates that a considerable amount of action was taken to maintain growth of agricultural yields: 61% of the farmers said that they had used new seed varieties, 53% Food preservation, 40% reconstruction of dikes, dams, 40% diversified income sources, 26% increased awareness & daily adaptation to climate change, 18% Increase in water supply sources and 18% tree plantation/reforestation as advised by local district farmers’ supervisors.

**Ways to trade farm products**

![Graph](image)

**Figure 13** shows that the main means for trading farm produce is through middlemen from outside (up to 87%) as middlemen came in contact with farmers on a regular basis with face-to-face communication. Middlemen are the primary source of information for what farmers need to know such as product demand, pricing, handling and linkages. Second, the farmers sell to villagers in the village as they are the direct consumers of the products. Third, through direct sale at local markets (55%), through village collectors...
(42%) and the last through V.M.Ns/C.B.Os. Results showed also that digital marketing has not reached farmers at this time of technology-driven communication.

Ways to collectively promote farm products in the village

Figure 14 reveals that most of the farmers do not collectively promote their farm products. The common way of promoting farm products is word of mouth (32%). Second, using the V.M.N representative (21%); Third, NGOs; sometimes, they also used Trade fairs (8%); C.C (5%) and the District office (5%). Collective promotion is not being done because farmers’ associations are not active enough and less knowledgeable about marketing as a means of reaching consumers or buyers.

Levels of Involvement of Governmental Institutions in Farming Activities

Ten government officials were interviewed. Below are the results from the interview:

Figure 15 shows that ninety per cent of the governmental officials said their institutions were involved in improving farming techniques and the farm products produced by farmers. A majority said that they had some involvement; (40%) and only (10%) of them said that they were always involved. Ten per cent said that they did nothing related to this. Results indicate that only a small percentage of government officials were involved. Other levels of involvement are shallow and not wholehearted.

Ways of Engagement of the governmental institutions with farming issues
Figure 16 shows different ways of communication engagement of different government institutions with farming issues and problems. The most popular way of communicating to farmers by government institutions is through Reports from the Village Chief (60%), as the village chief is also directly responsible to farmers and has immediate access to farmers. Because the governments’ direct communication is mostly with the Village Chief, there was less interaction between government and the farmers. Second most popular is the Report from the District Office (50%) and Visit to village (50%). Other ways are through Reports from the CC (30%), Commune forum (30%), and Word of mouth (20%). News/media (10%) and others (20%). News media is the least popular channel as there are many farmers who do not read newspapers, magazines, or have no television at home.

Government’s Responses to Farmers’ Needs in relation to farming techniques and marketing of farm products

Figure 17 shows that most of the interviewed government officials make three important inputs to the farmers: sharing market information (70%), providing agricultural skill training (60%) and provision of vocational training (50%); while field visits (50%), improve farm product quality (40%), improve
marketing activities (40%), road improvement (30%), provide hardware support, improve irrigation systems (20%) and other inputs (30%). Sharing market information has the highest percentage as this is the most popular channel that can reach all farmers because they need all information necessary for production, marketing and advertising, pricing and market demand. Provision of agricultural skills training is just as important because new techniques of farming translate onto greater productivity.

**Visit frequency of the related governmental officials to better understand farming needs and improved marketing of farming products**

![Visit Frequency of the elated Gov. Officials to Village](chart1)

*Figure 18* states that there are two main visits of the related governmental officials to the village: Monthly (70%) when there is a request (50%); Once every two months and once a year (10%). There are no quarterly visits and yearly visits. According to interviews with farmers, this frequency of government visits provided little information on the part of the government to exactly deal with real farmers’ scenarios and that decision-making of the governments as to issues regarding farming and farmers are mostly based from reports by the Chief of the Village as reflected in *figure 14*.

**Communication means of the villagers to get governmental institution service on farming and marking**

![Communication Means of the Villagers](chart2)
Figure 19 reveals that there are several means of communication that the villagers use in order to communicate with different related government officials in order to get services on farming and the marketing of farming products. Telephone calls are the most popular (up to 60%); second, Letter to the Commune Chief (50%); Letter to the District Chief (30%); Media (10%); and Other (30%). Telephones became the most popular means of farmers’ communication as some of them are illiterate while others do not have writing skills.

**Types and levels of villagers' participation in promoting social accountability & good governance**

![Communication Means of the Villagers](image)

Figure 20 Based on the above chart, there were six types and levels of villagers' participation in promoting social accountability and good governance. First, the most active forms of participation were through the Village Development Plan (90%). Second, CC integration development plan (60%). Third, District integration development plan (20%). Fourth, participating in bidding processes (20%). Fifth, accountable box (10%) and other (10%). Results showed farmers were willing to take active participation in the development plan so they could align their farming activities to the village plans according to interviews.

VII. Conclusion

1.5 Scope and Limitation of the Study

This research focused on Communication Channels and their Impact on the Livelihood Projects of Kampong Speu Farmers covering 2 Districts, 10 Communes and 22 Villages. There were constraints on data gathering because some villages in Kampong Speu were located far from the major towns and are isolated; also data collection was hampered by the busy schedules of farmers at harvest seasons. Also,
although representative of the Kampong Speu area, caution must be taken when applying these findings to other areas. However, the results of this survey can provide a useful base from which to extrapolate findings of research in other areas.

Overall, this research found that farmers do not receive enough market information from independent public institutions and from civil society organizations. NGOs and the district Agricultural Officer are the favored institutions to consult to address constraints on farming activities. The most common source of information came from middlemen. Farmers also preferred information sources and channels including their own experiences, farmer groups, district agricultural officers and the village chief. 95% of the farmers identified middlemen and farmer-to-farmer interaction (villagers) (88%) as the most preferred and reliable source of information. Non-governmental organizations, VMN members, private information providers and the print media emerged as the least trusted sources of agricultural information. Farmers received very little market information from local administrative and technical officials. It can therefore be concluded that more agricultural information is received from interpersonal sources compared to mass media sources. This is perhaps due to the frequency and the quality of interpersonal communication that occurs between members of the rural community and interpersonal sources such as friends, family members and villagers. These are close, trusted relationships.

Radio is the most accessible medium of communication to farmers, more so than newspaper and television. Radio as a mass media channel is repeatedly finding itself the preferred medium for communicating information about agriculture innovations as its reach far exceeds any other mass media channel. As such, radio is a powerful tool for information dissemination especially for hard to reach rural audiences, as supported by the study of Myers 2008.

Ninety per cent of government officials said their institutions are involved in improving farming techniques, but this figure varied with 40% stating that they were involved often while another 40% said that their contact with villagers was less frequent. Government officials address farmers’ needs mainly through providing market information, vaccinations and training. The main methods of communication are through village chiefs, commune chiefs and direct visits. A key to ensuring improved agricultural production is the role of government officials at village, district and commune levels.

Villagers participate in village and commune development plans, but do not contribute to evaluating programs. Public institutions do not use direct methods e.g. village meetings to learn about farming and
farming issues in order to improve the agricultural sector. This was a preferred method of information sharing for many farmers and should be considered as part of any development strategy in the future.

IX. Recommendations

The following recommendations based on the above research are:

- Enable farmers to gain access to and control over more and better resources on favorable terms to which they can contribute to their own production process and for which they can be remuneratively compensated.
- Inform farmers about and give them access to new or better technologies that can make their available resources more productive and also better knowledge and skills for utilizing these technologies.
- Link them into organizations, formal or informal, that give them access on favorable terms to resources and technologies as well as to market for their products.
- Enable farmers’ organizations to function more effectively using their available resources and technologies more productively.
- Provide more training and market research to the VMN committees including rapid market analyses, identification of market segments and production planning.
- Provide training on business skills, such as those that enable farmers to do a profit -and-loss analysis.
- Facilitate farmers' active access to government policy and to understanding their rights in trade and business transactions.
- Facilitate market linkages between farmers and the private sector.
- Increase effectiveness of farmer negotiations with input suppliers, buyers, traders and local authorities - this empowerment can be achieved through group mobilization, as a group voice can be more powerful than an individual voice.
- Provide strong local support in program interventions, (i.e. through using a multi-stakeholder approaches, working in parallel with local officials and building consensus). Curriculum and training materials are important project deliverables.
- NGOs should position themselves as facilitators within market chains. A number of specific areas in which NGOs could play a role were identified. These include: facilitating linkages with research institutes in the undertaking of market research; linking farmers with business and government; linking training throughout the chain; and using connections with government and international advocacy organizations to link with policymakers for pro-poor advocacy.
- Integrate NGOs' activities and strategies with policy of local authorities.
• Ensure local staff are adequately trained; and ensure a long-term plan is developed with local authorities - developed and agreed at early stages of project development.
• Train local authorities (such as village committee, commune council, district official and other technical and marketing institutions and, etc.) in market oriented production.
• Provide information on markets, technology and all other factors related to market-oriented production.
• Define roles of agricultural extension workers so that extension workers are required to support farmers in both technical and market-oriented areas.
• Disseminate research outputs, particularly those relevant to the design of specific support activities.

In general, the study provides practical insight into the dissemination of market information to farmers through different channels in order to improve agricultural productivity and to enhance marketing strategies.

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References
Masuki, Mowo, Kamuigisha, Tanui, Tukahirwa and Adera (2010). In the Study of Assessing Farmers’ Communication Channel and Its Impact in Agriculture (study of Petronila Agnetti Ogola).

Pomsri Laurujisawat. *Improving incomes by linking farmers to market opportunities "A case study of CPF’s contract farm*. Charoen Pokphand Group.


Website link: [http://www.fao.org/docrep/009/a0159e/A0159EOO.htm#TOC](http://www.fao.org/docrep/009/a0159e/A0159EOO.htm#TOC)

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