

## แหล่งข่าวสารและช่องทางการสื่อสารในการผลิตยางพารา ของเกษตรกรสวนยางขนาดเล็กจังหวัดสงขลา

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### บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์สำคัญเพื่อศึกษาแหล่งข่าวสาร ช่องทางการสื่อสาร ในการเปิดรับข่าวสารเกี่ยวกับการผลิตยางพาราของเกษตรกรสวนยางขนาดเล็กในจังหวัดสงขลา โดยมีกลุ่มตัวอย่างจำนวน 128 ครัวเรือนจาก 7 ตำบล เครื่องมือในการเก็บข้อมูลคือ แบบสัมภาษณ์ สถิติที่ใช้วิเคราะห์ข้อมูลคือ ค่าร้อยละ ค่าเฉลี่ย ไคสแควร์และ Kendall's tau\_b ผลการวิจัยพบว่า แหล่งข่าวสารที่สำคัญคือ เพื่อนหรือเพื่อนบ้าน เจ้าหน้าที่กองทุนสงเคราะห์การทำสวนยาง ญาติพี่น้องและเจ้าหน้าที่รัฐอื่น ๆ ข่าวสารหลักที่ได้รับจากแหล่งข่าวคือ การใช้ปุ๋ย การควบคุมวัชพืชและโรค การปลูกและการตลาด โดยมีช่องทางการสื่อสารที่สำคัญในแบบต่าง ๆ ดังนี้ แบบรายบุคคลคือ การไปเยี่ยมเยียนที่บ้านหรือสวนและไปพบเจ้าหน้าที่ที่สำนักงาน แบบกลุ่มคือ การประชุม อบรมและงานวันเกษตรกร สื่อมวลชนที่สำคัญคือ โทรทัศน์ เอกสารสิ่งพิมพ์ วิทยุและหนังสือพิมพ์ ตามลำดับ

คำสำคัญ: การผลิตยางพารา, ช่องทาง, สวนยางขนาดเล็ก, แหล่งข่าวสาร

## Communication Sources and Channels in Rubber Production Practices of Rubber Smallholders

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### Abstract

The main objective of the study was to identify the communication sources and channels where rubber smallholders in Changwat Songkhla received the rubber production information. The respondents of 128 households were selected from 7 Tambons. Data were collected through an interview schedule. Percentage, arithmetic means, chi-square, and Kendall's tau\_b were used for data analysis. It was found that the main information source of the respondents was their neighbors or friends, followed by the Rubber Replanting Aid Fund officers, relatives, and government officials. Major topics obtained from information sources were on fertilization, weed and disease control, planting, and marketing. The preferred communication channels were on more personal method such as home or rubber plantation visit and meeting the government officials in their office. In terms of group method, the respondents obtained information from meetings, training course, and agricultural day. Informations were also received from mass media such as television, printed materials, radio, and newspapers.

**Keywords:** source, channel, rubber production practice, rubber smallholder

## Introduction

Agricultural Extension is still important for transferring new technologies or knowledge to farmers. It plays a leading role in extending economic, social, political, and changes. Its main goal is to improve farmers' living condition which consequently leads to the development of the whole country as farmers are the backbone of the country's economy (Sarikaphuti, 1978).

Agricultural extension is an important two-way communication process to transfer agricultural information from change agents to farmers. The extension workers are trying to communicate the knowledge to farmer through many methods: face to face contacts, meeting, demonstrations, radio programs, television programs, exhibitions, and printed matter (magazines, journals, newspapers, leaflets, and bulletins). These communicators use one of several possible channels of communication to impart information related to improve farming methods. They try to enhance agricultural techniques, generate more income and improve living condition of farmers (Sompong, 2000). At the same time, farmers can acquire knowledge, skills, attitudes, and values through interpersonal interaction. Information which is send to farmers will help a good living of them. Information is constantly changing. Farmers seek information to improve their everyday lives and to know the current events. They can receive information through the media such as printed media, mass media, and personal media. The effectiveness of such an interaction process depends on the ability to communicate. Therefore, we can say that communication is the heart of agricultural extension activities for not only extension agents need to be

competent agriculturists, but they also must know how to communicate effectively with farmer as well as learn how to stimulate learning (Custodio, 1998). In addition, the effectiveness of such an interaction process in farmer sector depends on one's ability to communicate, too.

The ability to influence others depends on good technology and effective communication. For this, extension agents engaged in community development must be concerned not only with useful information but with effective communication. Communication managers should incorporate wide range of information channels into their outreach effort including interpersonal methods, traditional mass media and emerging online technology (Tucker and Nepier, 2002).

## Statement of the problem

Thailand is the largest producer of nature rubber in the world. Presently, there are rubber plantings about 12 million rai in southern, eastern and northeastern. About 97 percent or more than 1 million farms are small rubber holding which have average holding size between 13–25 rai (Petcharat, 2004). Small producers as they are, their number represent the total rubber producers in the country. Thus, a large number of rubber smallholders are directly or indirectly dependent on rubber production for livelihood. While the demand for rubber products is still high but the producers can not increase their production. The low rubber productivity results to low gross family income and for living condition of rubber smallholders (RRIT, 1999).

Agricultural extension officers are constantly struggling with the problem of accelerating rubber

production through the diffusion of farm innovations. To attain this end a clear concept of the communication process in all of its ramifications is essential. Of the various elements in the communication process, channels lie at the core. The desired information must be relayed through some media, the importance of the appropriate channels in the process of communication cannot be over-emphasized. Generally, several communication channels are involved in the total process. Consequently, the success with which one can promote diffusion of farm innovations depends on one's knowledge and ability to make use of a variety of channels.

Communicators must be selective in his approach to obtain satisfactory results. Various channels are not similar in their capacity to influence an audience; nor are they preferred or relied on to the same extent by an audience. Furthermore, a single channel is not suited to communicating all types of information. Therefore, channels which transfer knowledge through the audience are their nature and role in the communication process.

The aims of transferring innovation or technology to farmer need to change knowledge, attitude and behavior of them until they adopt it. Using information sources and communication channels will be different. Thus, the plan of transferring is important because appropriate information sources and communication channels will lead technology to all farmers. They can increase their knowledge of the new rubber productions technology which will bring a good living to them.

### **Objective of the study**

This research mainly to identify the sources and channels in rubber production practices of rubber smallholders. The specific objectives are as follows:

1. To describe characteristics of rubber smallholders.
2. To identify the sources and channels where rubber smallholders received the rubber production information.
3. To examine the relationship between characteristics of rubber smallholders with sources and channels.

### **Significance of the study**

This study provided insights on communication sources and channels in agricultural development of rubber smallholders to both government and private sectors in Thailand. The results of this study also showed rubber smallholders' rubber production practices useful when transferring appropriate rubber technologies to smallholders.

### **Scope and limitation of the study**

This study mainly focused on rubber production practices obtained from various sources and channels of rubber smallholders in Amphoe Hat Yai, Changwat Songkhla. The result of study may not be applicable to other areas due to different in economic conditions and situational factor.

### **Definitions**

**Characteristic of rubber smallholder** refers to the socio-economic characteristic of rubber

smallholders such as sex, age, education, religion, labor, size of rubber plantation, experience in rubber production, income of rubber production, membership to organization and credit.

**Sources** refer to source of information namely: agricultural extension officers, neighbor, friend, relatives, merchant, government official, salesmen, teacher, local leader who communicates rubber information to rubber smallholders.

**Channels** refer to the way or method which the rubber information is transmitted to rubber smallholders such as personal method, group methods and mass method.

**Rubber production practices** refer to rubber smallholder's practices from rubber plantation to post-harvesting. Production process includes rubber variety, planting, cultural practices, weed and disease control, fertilization, tapping, and sale product.

**Rubber smallholder** refers to the person who has rubber plantation area is between 2-50 rai based on the Rubber Research Institute of Thailand classification.

### Review of Related Literature

Mosher (1978) mentioned that the modern farmer constantly needs new information and new skills. Improved varieties do him no good unless he knows about them and knows how to use them. He cannot apply the proper pesticide unless he can identify different diseases and infestations and knows what to do about each. He cannot make good decisions about when and to whom to sell his products unless he has independent knowledge about current prices in different market-places. Moreover, since one of the features of a modern agriculture is that it is

steadily increasing in productivity, the modern farmer is dependent on research organizations. Not only must more productive techniques be constantly invented or developed but they must be tested near where each farmer lives to see what they will accomplish locally.

Communication process is not completed without a channel through which the message moves. Rogers (1983) defined a communication channel as the means by which messages get from one individual to another. He said that communication channels were mass media channels and interpersonal channels too. A mass medium enables the message from a source or a few individuals to reach an audience of many whilst interpersonal channels which are more effective in persuading an individual to adopt a new idea involve a face-to-face exchange between two or more individuals.

Rogers (1995) noted that a communication channel is the means by which messages get from individual to another. Communication is defined as the process by which participants create and share information with one another in order to reach a mutual understanding. The nature of the information-exchange relationship between a pair of individuals determines the conditions under which a source will or will not transmit the innovation to the receiver and the effect of the transfer.

Mass media channels are often the most rapid and efficient means to inform an audience of potential adopters about the existence of an innovation, that is, to create awareness-knowledge. Mass media channels are all those means of transmitting messages that involve a mass medium, such as radio, television, newspapers, and so on, which enable

source of one or a few individuals to reach an audience of many.

Schramm (1979) wrote that regardless of how much of development activity is localized, the media will continue to be asked to inform, teach, and please, as they always have been asked. He also adds that one of the most important functions of the mass media is to feed interpersonal channels.

On the other hand, interpersonal channels are more effective in persuading an individual to accept a new idea, especially if the interpersonal channel links two or more individuals who are similar in socioeconomic status, education, or other important ways. Interpersonal channels involve a face-to-face exchange between two or more individuals.

### Hypotheses

The study about characteristics, source and channel of rubber smallholders were proceeded on the following hypotheses:

1. Demographic characteristics of rubber smallholder are related to sources in rubber production practices.
2. Demographic characteristics of rubber smallholder are related to channel in rubber production practices.

## METHODOLOGY

### Location of study

The study was conducted in Amphoe Hat Yai, Changwat Songkhla consisted of 13 Tambons. Rubber plantation in Hat Yai was about 90.8 percent of total agricultural area. In Changwat Songkhla, Amphoe Hat Yai was the second area for rubber plantation, it was less than Amphoe Sadao (Songkhla

Provincial Agricultural Office, 2002).

### Population and sampling technique

The total population was 1,279 households in 7 Tambons. Ten percent of population was taken as the sample size consisting of 128 households (Department of Agricultural Extension, 1985). Because of in 6 Tambons, there were no rubber smallholders. They planted rubber plantation more than 50 rais and somebody were not in agricultural sector. Then the study focused in 7 Tambons. Samples from each village were identified by proportional sampling. Rubber smallholder names were arranged in alphabetical order in each of the selected villages and about ten percent of the names are selected from each by using simple random sampling technique.

### Research instrument

The structured interview schedule was used as research instrument to collect data from the respondents. It was related to the characteristics of rubber smallholder, sources and channels rubber production practices. The instrument was consisted of closed-end and open-ended. Questions divided into 3 parts:

Part I Characteristic of rubber smallholders: sex, age, education, religion, labor, size of rubber plantation, experience in rubber production, income from rubber production, membership of organization, credit, and information exposure.

Part II Information sources and communication channels which send information about rubber production practices: methods, frequency, topic of information, etc.

Part III Problems or obstacles related to information sources and communication channels which the rubber smallholders have encountered.

#### Data collection

Data were collected by using interview with respondents with the structured interview schedule. The respondents were chosen from each of the selected Tumbon in Amphoe Hat Yai. The data were collected from April - June 2005. They were analyzed and presented through percentage, frequency, mean, and chi-square. Data showed characteristics of rubber smallholder, sources and channels of their rubber production practices.

#### Results and Discussion

##### Characteristics of Rubber Smallholders

Around 59 percent of the respondents were men and 41 percent women. The average ages of the respondents were 51.9 years. Majority at 80.5 percent were Buddhists and the rest were Muslims. Most of the rubber smallholders at 55.5 percent graduated pratomsuksa 4. The average member of household was 4.5 persons. A half of all rubber smallholders had the plot of rubber plantation more than one. The average size of rubber plantation is 14.4 rai per household and most of rubber smallholders were owners. Around 79.0 percent of the respondents have been growing the rubber for more than 10 years at an average of 25.4 years. There were 2 types of labor used in rubber production. One was family labor with the average of 2.0 persons per household. Another was employment and the average was 2.1 persons. Around 70.3 percent of the respondents sold their rubber product as rubber

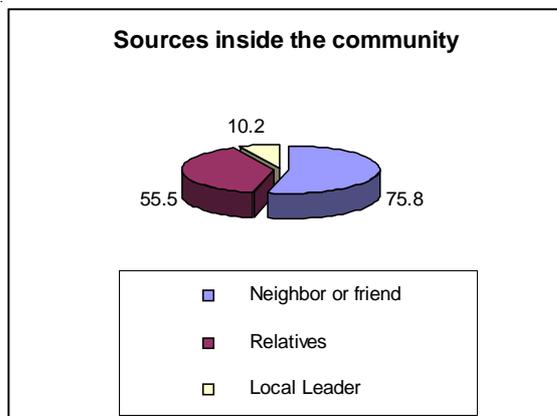
latex, 18.8 percent sold as rubber sheet and 10.9 percent sold both. A half of smallholders sold these rubber products to the merchants and 40.6 percent sold them to the group of rubber latex buyer. The average daily income was 884 baht. The total annual income earned from rubber production of rubber smallholder from January to December, 2004 about was 194,832 baht. The average tapping day in a week was 4.8. It was the minimum of 3 days a week and maximum of 6 day. Within a year, rubber smallholders tapped the rubber tree for 6 to 9 months and a rest period of 3 to 6 months. The average total number of day of tapping was 220 days per year and about 140 days per year for resting. Around 72 percent of the respondents were member of an organization. Three major organizations which have rubber smallholder members were the group of the rubber latex buyer, the cooperatives and the customer group of Bank for Agriculture and Agricultural Co-operatives. The rubber smallholder member had opted not be a member of any organization because they thought that membership was unnecessary for the production, they have no time for the activity of the organization and they did not use money from financial institute. Most of these who did not apply for credit use their own money, found credit unnecessary, and they didn't like having debt, etc. The major financial institutions for the respondents who loaned for rubber plantation were Bank for Agriculture and Agricultural Co-operatives, the Rubber Replanting Aid Fund and the Co-operatives. They used the loan for many activities: planting, rubber variety, fertilizer, and weed and disease control. Refrigerator, motorcycle and television were the basic household electric facilities in most of the rubber smallholders. Half of the

respondents never read newspaper because of eye problem (30 percent); found it unnecessary (22.8 percent) and low ability to read because of low education. Those rubber smallholders who read newspaper were more interested in the news about product marketing more than other topics.

**Sources**

The respondent's frequency of using the sources identified on rubber information is shown in figure 1 and 2. Of the eight information sources mentioned, neighbors and friends as a source were cited by the most rubber smallholders (Figure 1). The next most frequent source of information cited was the Rubber Replanting Aid Fund officers, followed by the relatives, the agricultural extension officers, local leaders, the extension officer of private sector, the government official, and the salesmen (Figure 2). The most information topic on rubber received the fertilization, weed and disease control, and marketing. The agricultural extension officers, they got the topic about fertilization, rubber variety and planting. The

**Figure 1 Percentage distribution of respondents who reported by used rubber information sources inside the community**



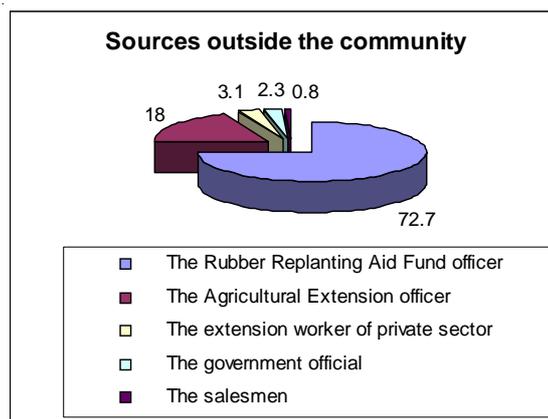
Note: A respondent used more than one source.

Rubber Replanting Aid Fund officers provided the rubber smallholders with information about on fertilization, weed and disease control, and planting to rubber smallholders.

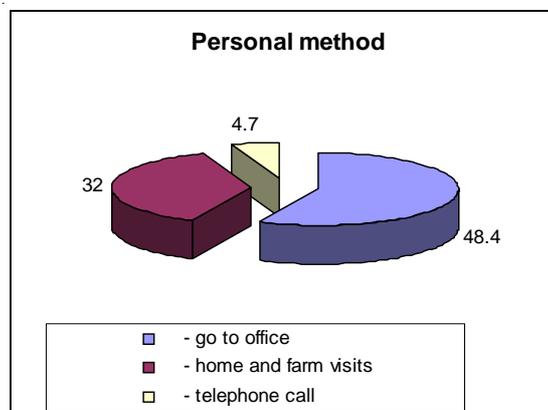
**Channels**

The rubber smallholders obtained rubber information through many communication channels and are presented in figure 3, 4 and 5. Around 48 percent of respondents personally to the office of

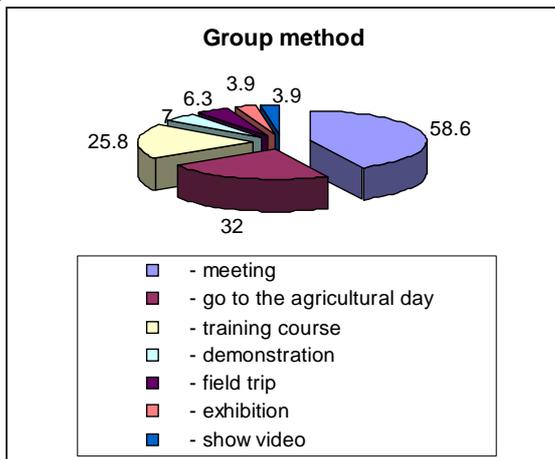
**Figure 2 Percentage distribution of respondents who reported by used rubber information sources outside the community**



**Figure 3 Percentage distribution of respondents who received the rubber information from the channels by personal method.**

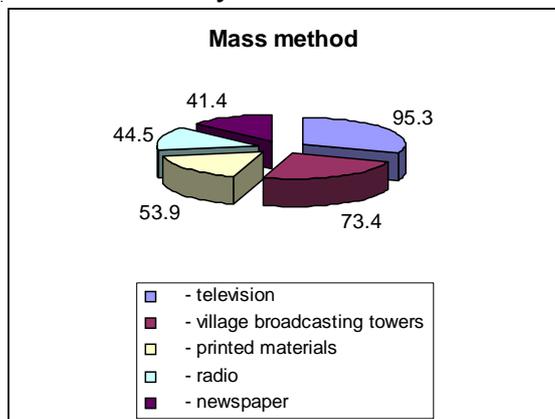


**Figure 4 Percentage distribution of respondents who received the rubber information from the channels by group method.**



Note: A respondent received the rubber information more than one channel.

**Figure 5 Percentage distribution of respondents who received the rubber information from the channels by mass method.**



Note: A respondent received the rubber information more than one channel.

source, 32 percent visited at home or in the rubber plantation by the Rubber Replanting Aid Fund officers and 4.7 percent obtained information by making a call though (Figure 3). In terms of group meeting used at 58.6 percent, the agricultural day at 32 percent

and training course at 25.8 percent (Figure 4). In the mass method, most of the respondents at 95.3 percent had television as media channel. The printed materials were used by 47.7 percent, 44.5 percent used radio, and 41.4 percent used newspaper (Figure 5). Around half of respondents never read any printed agricultural materials. This was because they did not have any and 16.4 percent had the problem with their eyesight. The Rubber Replanting Aid Fund gave rubber printed material to rubber smallholders more than any other office. Leaflets and pamphlets were the most type of printed materials given out by the government sector. About the radio, there were 40.5 percent of the respondent listened the radio and 52.6 percent of them listened it every day. They listened to the radio from 12.00 p.m. to 1.00 p.m. more than other period. In addition, most of rubber smallholder (85.9 percent) watched television every day. This favorite time was from 6.00 p.m. to 8.00 p.m. Finally, Only 45.7 percent of rubber smallholders obtained the rubber news from the village broadcasting towers.

**Relationship between the characteristics with sources and channels**

There were no relationships between sex, religion, and credit with all sources inside the community. For sources outside the community, there were no relationships between sex, religion, and credit with almost are information sources except for credit which had positive relationship with the agricultural extension officers, at 0.05 significant level (Table 1).

The correlation analysis indicated that the most of the relationship between characteristics of rubber smallholders with information sources inside the community were not statistically significant except

**Table 1 Relationship of the characteristics and sources by chi-square.**

Variables	Sex	Religion	Credit
1. Inside the community			
- Relatives	0.209	0.149	0.259
- Neighbor or friends	0.199	0.191	0.270
- Merchants	0.168	0.133	0.190
- Local leaders	0.228	0.219	0.204
2. Outside the community			
- Merchants	0.163	0.252	0.267
- Agricultural extension officers	0.134	0.177	0.257*
- Rubber Replanting Aid Fund officers	0.246	0.187	0.216
- Official of government	0.149	0.063	0.087
- Official of private sector	0.149	0.077	0.155
- Salesman	0.106	0.044	0.129

\* refers to the significant level at 0.05

\*\* refers to the significant level at 0.01

size of rubber plantation with the relatives and neighbors and friends. Also there has significant relationship between experience in rubber production and the local leaders.

Number of labor and size of rubber plantation were positively related with the merchant at 0.01 level but the income per year of respondents had positively correlated with the merchant and the agricultural extension officers at the 0.05 significant level.

Age was negatively correlated with the Rubber Replanting Aid Fund officers and the officials of private sector at the 0.05 significant level.

Education was negatively correlated with the government officials at the 0.05 significant level but it was positively correlated with the officials of private sector at the 0.01 significant level.

Experience in rubber production of rubber

smallholders was positively correlated with the government officials at the 0.05 significant level and it was negatively correlated with the officials of private sector at the 0.01 significant level (Table 2).

In personal method, there were no relationships between sex, religion, and credit with going to office and calling by phone, except the religion was positive relationship with visit at home or rubber plantation at 0.05. Credit had positive relationship with visit at home or rubber plantation at 0.01 too (Table 3). The number of labor was positive significant with going to the office at 0.01 level. Also there had positive significant between size of rubber plantation with going to the office at 0.05 level and visit at home or rubber plantation at 0.01 level but the experience in rubber production was negatively significant with calling by phone at 0.05 significant level (Table 4).

**Table 2 Relationship of the characteristics and sources by correlation.**

Variables	Age	Education	Number Of labor	Size of rubber plantation	Income per year	Experience in rubber production	Member of organization
1. Inside the Community							
- Relatives	-0.043	0.030	0.034	0.144*	0.082	-0.104	0.057
- Neighbor or friends	-0.086	0.077	0.060	0.157*	0.079	-0.122	0.050
- Merchants	-0.030	-0.097	0.115	0.093	-0.057	-0.050	0.038
- Local leaders	-0.111	0.017	0.100	0.085	0.107	-0.161*	0.131
2. Outside the community							
- Merchants	0.022	-0.047	0.194**	0.173**	0.136*	0.045	-0.039
- Agricultural extension officers	-0.029	-0.034	0.021	0.059	0.143*	-0.019	0.035
- Rubber Replanting Aid Fund officer	-0.121*	0.107	0.102	0.069	-0.083	-0.019	0.087
- Official of government	0.056	-0.143*	0.065	-0.064	-0.023	0.145*	-0.077
- Official of private sector	-0.137*	0.197**	-0.103	-0.041	-0.072	-0.226**	-0.064
- Salesman	0.048	-0.055	0.101	0.066	0.025	0.098	0.001

\* refers to the significant level at 0.05

\*\* refers to the significant level at 0.01

In the group method, there were no relationship between the demographic characteristics of rubber smallholders and demonstration, meeting, training course, field trip, exhibition, video, the agricultural day, and campaign (Table 3). Age had negatively correlated with the contest in agricultural day but education had positive relationship at 0.01 level. Number of labor had positive and significant association with the demonstration at 0.01 and campaign at 0.05 level. Experience in rubber production of rubber smallholders is found negative significant with the demonstration at 0.05 and the

contest in agricultural day at 0.01 level. Member of organization had positive and significant association with the training course, field trip, the contest in agricultural day at 0.05 level and meeting at the 0.01 significant level (Table 4).

About the mass method, there were no relationship between sex, religion, and credit with newspaper, the printed materials, radio, and village broadcasting tower, except the religion was positive relationship with the television at the 0.05 significant level (Table 3). The relationship between age and newspaper was negative significant at 0.05 level.

**Table 3 Relationship of the characteristics and channels by chi-square**

Variables	Sex	Religion	Credit
1. Personal method			
- Go to office	0.077	0.115	0.058
- Phone	0.184	0.090	0.099
- Visit at home or rubber plantation	0.100	0.227*	0.278**
2. Group method			
- Demonstration	0.010	0.035	0.089
- Meeting	0.173	0.168	0.278
- Training course	0.172	0.196	0.176
- Field trip	0.089	0.004	0.131
- Exhibition	0.060	0.088	0.123
- Video	0.131	0.053	0.003
- Go to the agricultural day	0.176	0.122	0.052
- Campaign	0.106	0.044	0.061
3. Mass method			
- Newspaper	0.281	0.207	0.261
- Printed materials	0.207	0.114	0.224
- Radio	0.202	0.212	0.150
- Television	0.171	0.327*	0.123
- Village broadcasting tower	0.295	0.388	0.226

\* refers to the significant level at 0.05

\*\* refers to the significant level at 0.01

Education is found positive significant with newspaper at 0.01 level, printed materials, and radio at the 0.05 significant level. Also there was positive significant between size of rubber plantation with newspapers at 0.01 level and radio at 0.05 level. The relationship between the income per year was positive significant with newspaper at 0.05 and radio at 0.01 level. Members of organization had positive and significant relationship with newspaper at 0.05 level and the printed materials at 0.01 significant level (Table 4).

## Conclusion and Recommendations

### Conclusion

Communication is basic to all human undertakings. It is a process of transmitting ideas, attitudes, knowledge, skills, and behavior patterns. Consequently, communication in agricultural extension is process of transmitting new ideas, skills, knowledge, and technology related to improve practices of farming. Each event is a consequence of an act of communication. An act of communication

**Table 4 Relationship of the characteristics and channels by correlation.**

Variables	Age	Education	Number of labor	Size of Rubber plantatio	Income Per year	Experience in rubber production	Member of organizatio
1. Personal method							
- Go to office	-0.020	-0.043	0.291**	0.155*	0.046	0.052	0.048
- Phone	-0.025	-0.016	-0.068	0.008	-0.036	-0.148*	-0.005
- Visit at home or rubber plantation	0.029	-0.092	0.093	0.175**	-0.083	0.088	-0.100
2. Group method							
- Demonstration	0.009	-0.033	0.212**	0.105	0.050	-0.137*	0.135
- Meeting	0.007	-0.043	0.031	0.001	-0.008	-0.027	0.228**
- Training course	-0.005	0.055	0.021	0.041	-0.022	-0.013	0.198*
- Field trip	0.002	-0.002	0.001	-0.025	0.087	-0.046	0.177*
- Exhibition	-0.010	0.007	0.036	-0.027	-0.054	-0.091	0.141
- Video	0.027	0.058	0.081	-0.032	0.029	-0.116	0.080
- Agricultural day	-0.240**	0.257**	0.086	0.020	0.003	-0.309**	0.160*
- Campaign	-0.112	0.113	0.150*	0.073	0.043	-0.103	0.001
3. Mass method							
- Newspaper	-0.149*	0.369**	0.051	0.152*	0.205**	-0.057	0.148*
- Printed materials	-0.090	0.168*	-0.055	-0.032	0.080	-0.058	0.322**
- Radio	-0.088	0.127*	0.073	0.179**	0.146*	-0.115	0.034
- Television	-0.087	0.026	-0.002	0.019	0.040	-0.038	-0.054
- Village broadcasting tower	-0.016	0.053	0.152	-0.019	0.126	0.181	0.015

\* refers to the significant level at 0.05

\*\* refers to the significant level at 0.01

involves the key elements such as source, message, channel, and receiver. Of these elements, channels lie at the core since desired information needs to be relayed through some media.

This research attempted to study communication sources and channels in rubber production practices of rubber smallholders. Regarding the communication sources of respondent from inside their community, neighbor or friend was the most important for rubber information (fertilizer,

weed and disease control, and marketing). The Rubber Replanting Aid Fund officer was the most important source from outside community for further information in fertilizer, weed and disease control, and planting. As for respondent use of communication channels, personal method especially home and farm visit were the most important interaction in satisfying them for rubber information. Demonstration, meeting, and field trip were the important methods of group contact in satisfying respondents were member of

an organization. The most important mass media was television because anyone can access to information through this media and it was the basic facility in every household. In addition, other communication channels such as radio, newspaper, and printed material can use for respondent who had education. This study further tried to find the relationship between the personal characteristics and sources and channels and analyzed relative influence of sources and channels. There were the relationships between the background characteristics with communication sources outside the community more than source from inside their community. Characteristics about rubber production such as number of labor, size of plantation, income per year, and experience in rubber production had correlated with communication channels (personal method, group method, and mass method) more than the personal characteristics (age, level of education, religion, and credit).

Consequently, this study showed that there were many communication sources and channels in satisfying respondents' need for information. Communication sources and channels should be geared to the needs and fitness of rubber smallholders and implemented through persons and methods that offer the greatest chance of success.

### Recommendations

The following recommendations from this study should be implemented:

1. Personal interaction between extension agents and farmers should be enhanced effective communication. The reduction of the number of rubber smallholders per Rubber Replanting Aid Fund

officers would enable the officers to have work in face to face interactions with all their clients.

2. The Rubber Replanting Aid Fund officers and the agricultural extension officers were found to be the important source of information. Most rubber smallholders obtained detailed information about their rubber production from these agents. Therefore, it is essential that they should not only have a through training in rubber production subject matter but also in communication skills. They should be given the training course related to rubber production and communication skills every year.

3. Television was relatively more used than other mass method. It is, therefore, necessary to make effective use of television as a channel for communicating farm information. Television can be used to bring information of rubber production by increasing the frequency and duration of broadcasts.

4. To help the rubber smallholders evaluate usefulness and applicability of the recommended rubber production in local situations, extension officers should insure that successful demonstrations are conducted in each community. To enable the rubber smallholders to try the practice, extension officers must get the visual evidence validated by the peer group. It is, therefore, essential to secure participation and involvement of the peer group in any demonstration. This will provide them with similar learning experiences and enable them to compare their notes and in validation of the evidence.

### References

Custodio, P.A. (1998). **Communication behavior, Indigenous knowledge, and Farmer Participation in a Village-Based Participatory**

- Research and Extension Project in Sustainable Agriculture.** M.S. Thesis, University of the Philippines Los Banos. Department of Agricultural Extension. (1985). **Principle and Agricultural Extension Method.** (2<sup>nd</sup> ed). Bangkok: Ministry of Agriculture and Cooperatives.
- Mosher, A. T. (1978). **An Introduction to Agricultural Extension.** Singapore: Singapore National Printers.
- Petcharat, J. (2004). An Analysis of Rubber Unsmoked Sheet Cost of Production for Small Holders, Southern Thailand. **Songklanakarin Journal of Social Sciences and Humanities**, 10(2) May-August, 189-202.
- Rogers, E. M. (1983). **Diffusion of Innovations.** (3<sup>rd</sup> ed). New York: The Free Press.
- \_\_\_\_\_. (1995). **Diffusion of Innovations.** (4<sup>th</sup> ed). New York: The Free Press.
- Rubber Research Institute of Thailand. (1999). **The Annual Report of Rubber Research Institute of Thailand 1999.** Bangkok: Ministry of Agriculture and Cooperatives.
- Sarikgaphuti, Y. (1978). **Policy and Method in Operation of Department of Agricultural Extension in 1978.** Bangkok: Ministry of Agriculture and Cooperatives.
- Schramm, W. (1979). **Mass Media and National Development 1979.** Paris: UNESCO.
- Sompong, N. (2000). **Mass communication for Extension.** Bangkok: Kasetsart University Press.
- Songkhla Provincial Agriculture and Cooperatives office. (2002). **Agriculture and Cooperative Databases of Songkhla province.** Songkhla: Ministry of Agriculture and Cooperatives.
- Tucker, M. and T.L. Napier. (2002). Preferred sources and channels of soil and water conservation information among farmers in three midwestern US watersheds. **Journal of Agriculture, Ecosystems and Environment**, 92, 297-313.

