American Journal of Agricultural and Biological Sciences 6 (3): 451-461, 2011
ISSN 1557-4989

Receiving the Agriculture Information through Mass Media and Interpersonal Sources among the Rural Community

[1]Md. Salleh Hassan, [1]Sulaiman Md. Yassin, [1]Hayrol Azril Mohamed Shaffril,
[2]Mohd Shahwahid Othman, [1]Bahaman Abu Samah,
[3]Asnarulkhadi Abu Samah and [1]Siti Aisyah Ramli.
[1]Laboratory of Sustainable Development and Agriculture Extension,
Institute for Social Science Studies, Universiti Putra Malaysia
[2]Department of Hospitality and Recreation, Faculty of Economy and Management,
Universiti Putra Malaysia
[3]Department of Social and Development Science, Faculty of Human Ecology,
Universiti Putra Malaysia

Abstract: Problem statement: Developing agriculture by disseminating the right information to the right groups has proven to be an effective strategy. In Malaysia, there are a number of sources; either mass media or personal sources that disseminate the agriculture information. The rural community, a group which are highly related to agriculture certainly have a pivotal need for agriculture information. Besides the existence of numerous sources of agriculture information, do the rural community especially those who living along Pahang and Muar Rivers have received adequate agriculture information from the mass media and interpersonal sources? This study would provide the answer for the query. **Approach:** This is a quantitative study, where a developed questionnaire was employed to gain the data needed. Through a simple random sampling, 900 respondents were selected. The respondents selected were among the villagers that live along Pahang and Muar Rivers. Descriptive and inferential analyses were employed to achieve the objectives determined. **Results:** Based on the results, rural community living along Pahang and Muar rivers do receive agriculture information at a high level from television, newspaper, family members, friends and village leaders and village administration members. Further analysis employed has proven that there is significant difference in receiving the agriculture information from mass media and interpersonal sources among rural communities in the three districts studied. **Conclusion/Recommendation:** It is recommended that brochures/pamphlets that contain information on the list of agriculture programs available on television, radio, newspaper and internet can be produced by the concern parties and distributed to the rural people. The concern parties in agricultural delivery system are recommended to employ the media that are pertinent in fulfilling rural community needs.

Key words: Mass media, rural community, Pahang and Muar Rivers, agriculture information, agriculture development, rural development, rural communities.

INTRODUCTION

Mass media in Malaysia:

Television: Television in Malaysia started its services in 28th December 1968. The first television station in Malaysia was owned by Radio Televion Malaysia (RTM) by that time operated *Rangkaian Satu* Channel and established the second channel (*Rangkaian Dua*) in 1969. Currently there are three major television stations in Malaysia. The government owned station; RTM and two private companies that run hundreds of television channels which are Media Prima and ASTRO. Among the famous television channels run by these two private companies are TV3, TV8, NTV7, TV9, Astro Prima, Astro Warna, Astro Arena and Astro Ceria.

Corresponding Author: Md. Salleh Hassan, Laboratory of Sustainable Development and Agriculture Extension, Institute for Social Science Studies, Universiti Putra Malaysia

Table 1 presents data regarding the percentage of household with access to television by state. Generally, all of the states in Malaysia documented a good percentage in term of television access. In 2004 for example, the percentage ranges from 87.1 to 98.1%.

Radio: The history of radio in Malaysia began in the year 1921. A.L Birch, an electrical engineer was responsible in bringing the first radio set to the country. He then initiated the Johore Wireless Association and started broadcasting. After seeing the successful efforts of Birch, the same association was established in Penang and Kuala Lumpur. After 90 years, currently there are three major companies that run hundreds of radio channels namely RTM (government owned), Media Prima (private company) and ASTRO (private company). Among the famous radio channels run by these companies are Radio KL, Radio Muzik and Klasik Nasional (RTM), Hot FM and FLY FM (Media Prima) and Era FM, Sinar FM and Hitz FM (ASTRO).

Table 2 clarifies on the percentage of household with access to radio/hi-fi set. Obviously, the percentage showed an increase from 2000-2002 in all of the states, nevertheless, the percentage showed a decrease from 2002-2004 in all states except in Kelantan. Besides the decrease in 2004 in almost all of the states, the percentage recorded in 2004 can be considered as high (ranging from 73.6 to 90.8%).

Internet: In the era of modernization, internet is indeed important for agriculture development especially for the process of disseminating the agriculture information. Generally, the latest statistic prepared by the Malaysian Communication and Multimedia Commission (MCMC), have confirmed that the internet usage among the rural community is still at a low level (Table 3). However, continuous efforts of the government for enhancing internet usage among the rural community are expected to increase the percentage. This can be clearly seen by the recent efforts of the government when the National Broadband Initiatives (NBI) was launched. The NBI has the main objective of making everybody have their own broadband. In 2010, it is expected that half of the Malaysian household have their own broadband services.

The NBI is not the only ICT project to be held by the government, ICT projects such as Community Broadband Center, PID (Rural Internet Center) and MID (Rural Information Center) have been proven to successfully cultivating ICT culture among the rural community.

Table 1:Household with access to television by state (%)

State	2000	2002	2004
Johor	88.8	96.1	95.4
Kedah	88.8	93.5	96.5
Kelantan	83.2	90.9	94.0
Melaka	90.3	95.9	97.8
Negeri Sembilan	91.1	95.1	96.6
Pahang	86.6	94.5	95.9
Pulau Pinang	90.3	95.8	97.1
Perak	90.1	96.4	98.1
Perlis	90.3	95.2	95.5
Selangor	87.1	95.0	97.8
Terengganu	86.4	92.0	92.6
Sabah	66.5	81.3	87.1
Sarawak	72.5	89.3	97.3
Federal Territory of Kuala Lumpur	84.6	97.9	93.8

Sources: Malaysia Communication and Multimedia Commission (2008)

Table 2: Household with access to radio/hi-fi set (%)

State	2000	2002	2004
Johor	83.5	89.2	87.1
Kedah	79.9	85.3	81.5
Kelantan	76.9	81.7	85.1
Melaka	85.1	92.8	90.8
Negeri Sembilan	85.8	90.9	90.3
Pahang	80.5	90.6	84.0
Pulau Pinang	83.8	89.3	86.2
Perak	83.8	90.4	88.2
Perlis	81.5	90.7	84.3
Selangor	82.1	90.6	88.2
Terengganu	74.0	79.8	73.2
Sabah	62.5	76.1	73.6
Sarawak	70.8	83.9	83.4
Federal Territory of Kuala Lumpur	79.8	88.8	88.0

Sources: Malaysia Communication and Multimedia Commission (2008)

Table 3: Household use of internet by urban and rural areas (%)

Year	Rural	Urban
2005	12.0	88.0
2006	18.0	82.0
2008	14.0	86.0

Sources: Malaysian Communication and Multimedia Comission (2008)

Newspaper: For newspaper, there are many choices for the Malaysian where currently there are 50 daily newspapers in Malaysia. A total of 26% of the newspaper are in Malay, 32% in English, 36% in Chinese and 6% in Tamil language (Media Planning Guide 2009). Table 4 illustrates the three major newspapers of each language in Malaysia. It can be seen that Harian Metro (Malay); The Star (English); Sin Chew Daily (Chinese) and Tamil Nesan (Tamil) were the top ranked newspaper based on the respective languages spoken in Malaysia.

Table 4: Ranking of daily newspaper based on language

Language	Ranking
Malay	1.Harian Metro
	2.Berita Harian
	3.Utusan Malaysia
English	1.The Star
	2.News Strait Times
	3.The Sun
Chinese	1.Sin Chew Daily
	2.Guang Ming
	3.Nanyang Siang Pau
Tamil	1.Tamil Nesan
	2.Makkal Osai
	3.Malaysian Nanban

Source: Nielsen Media Index (2009)

Table 5: Mass media usage among rural community in Malaysia

	Frequency		
Sources	Often (%)	Seldom (%)	Never (%)
Television	62.4	28.0	9.6
Newspaper	51.8	33.8	14.4
Radio	44.4	30.7	24.9
Journal	19.0	18.2	62.8
Internet	17.8	18.7	63.5
Book	17.1	36.4	46.5
Magazine	14.0	46.2	39.8
CD/ Cassette Video	10.9	16.2	72.9

Source: Hassan *et al*. (2010b)

There are a huge number of magazine in Malaysia. Currently, there are 349 magazines in Malaysia and more than 50% of these magazines are in English language (Media Planning Guide, 2009).

Agriculture information dissemination through mass media in Malaysia: Mass media are important in providing information for enabling the rural community to make informed decision regarding their farming activities, especially in the rural areas of developing countries (Lwoga, 2010). Information, as we know is the key for success in the operation and management process of the agriculture activities. Realizing the importance of mass media in developing the agriculture industries, both government and private sectors in Malaysia have taken initiatives in using the mass media to ensure the intended agriculture messages are received by the target groups.

Abu Hassan *et al*. (2009) have done a study on the usage of mass media among farmers community in the rural areas and found that majority of them still relied on the "traditional mass media" such as television, newspaper and radio, thus bring to a probability that these three mass media sources can be effective sources for agriculture information dissemination among the farmers in the rural areas (Table 5).

Table 6: Level of agro-based website surfing among the rural community

	Percentage			
Name of agro-based website	0	1	2	Mean
Department of Agriculture Malaysia *www.agrolink.moa.my/doa*	70	22.9	7.1	0.37
Malaysian Agriculture Research and Development Institute *www.mardi.my*	76.9	18.4	4.7	0.28
Federal Agriculture Marketing Authority (FAMA) *www.agrolink.moa.my/fama*	79.3	15.6	5.1	0.26
Farmers Organization Authority(FOA) *www.agrolink.moa/lpp*	84.2	10.7	5.1	0.21
Agriculture Bank of Malaysia *www.agrobank.com.my*	84.2	13.6	2.2	0.18
Department of Fisheries Malaysia *www.agrolink.moa.my.dof*	85.6	11.6	2.9	0.17
Malaysia Palm Oil Board (MPOB) *www.mpob.gov.my*	89.3	8.7	2	0.13
University Putra Malaysia (Agriculture Based University) *www.upm.edu.my*	89.1	9.3	1.6	0.12
Department of Veterinary Services *www.agrolink.moa.my.jph*	90.2	7.1	2.7	0.12
Federal Land Consolidation and Rehabilitation Authority (FELCRA) *www.felcra.com.my*	88.9	10.2	0.9	0.12
Rubber Industry Smallholder Development Authority (RISDA) *www.risda.gov.my*	91.1	7.8	1.1	0.1

Source: Shaffril *et al*. (2009a), Note: 0= never, 1= seldom, 2= Always

People in the rural areas still hesitant to use the advance technology that are available to them (Abu Hassan *et al*., 2009). For example, in term of agriculture website surfing, Shaffril *et al*. (2009a) have concluded that the agro-based websites surfing among the rural community is at a low level. Table 6 has clarified the ten most agro-based websites surfed by the rural community in Malaysia. The most surfed agro-based websites was the official websites of Department of Agriculture Malaysia (M = 0.37), followed by the official website of Malaysian Agriculture Research and Development Institute (M = 0.28) and the official websites of Federal Agriculture Marketing Authority (M = 0.26).
Nevertheless, based on the mean score recorded from 0.10-0.37 (from the maximum mean score of 2.00) website surfing among the rural community is still considered low.

Depicted in Table 7 are four agriculture programs aired through television in Malaysia. We can conclude that RTM is the major producer of the agriculture programs on television. Up to this date there are three agriculture programs produced by RTM while Media Prima has produced one television program and aired on TV3.

Table 7: Agriculture programs aired on television channels in Malaysia

Agriculture programs	Duration	Channels
Agro Tech *Agrotek*	30 min	TV1 (RTM)
Agro Journal *Agro Jurnal*	30 min	TV1 (RTM)
Our Earth *Bumi Kita*	Based on the requirements	TV1 and TV2 (RTM)
Agro-Explorasi	30 min	TV3 (Media Prima)

Source: Hassan *et al*. (2010a)

Table 8: Agriculture programs aired on radio channels in Malaysia

Radio Channel	Agriculture Program	Day	Time
Klasik Nasional FM	Agriculture Best **Best Tani*	Monday to Thursday	12.30 p.m to 1.00 p.m
	Sekilas	Monday to Thursday	6.45 a.m to 6.50 a.m
Selangor FM	Agriculture in new Millennium **Pertanian Alaf Baru*	Tuesday and Thursday	11.30 p.m to 12.00 p.m
Negeri Sembilan FM	Agro Field **Laman Agro*	Monday	11.15 a.m to 12.00 p.m
Pahang FM	Prosperous Earth **Bumi Makmur*	Monday	11.15 a.m to 12.00 p.m
Kedah FM	Perspiration Services **Keringat Bakti*	Tuesday	12.00 p.m to 12.30 p.m
Perlis FM	Success Track **Jejak Jaya*	Thursday	12.00 p.m to 1.00 p.m

Hassan *et al*. (2010a). *Name of the programs in Malay

Agro Tech is a magazine type of television program. It consists of three segments that contain profile, research and development and technology. There is no fixed format for every episode produced. It depends on appropriateness, latest issues and the program demands.

Agro Journal is a documentary type of television program. It aims on important issues related to farmers, fishermen, SMEs and commodity industry. An episode in this program will be presented educationally and analytically. Among the main purpose of Agro Journal is to encourage and motivate the public to involve in agriculture industry in Malaysia.

Our Earth is a filler type of television program. The content program of Our Earth is a summarization initiated from either Agro Journal or Agro Tech. It was published mainly for filling the time gap that exists between two television programs.

Agro-Explorasi produced by Media Prima, it is a television program based on agro-farm concept. The main purpose of Agro-Explorasi is to promote the agriculture activities, husbandry and fisheries as potential employment especially for graduates who are still unemployed.

In term of agriculture programs aired on radio, currently there are seven agriculture programs aired through radio. Two of the agriculture programs are aired through national radio station; Klasik Nasional. Not all of the states radios in Malaysia have their own agriculture programs. Up to this date only five states in Malaysia do have their own agriculture programs (Table 8). Some of the programs are conducted with cooperation of related parties such as Department of Agriculture.

Interpersonal sources as a source for agriculture information dissemination: Besides using the mass media, significant roles of extension agents, friends, relatives and village leaders in disseminating the agriculture information cannot be denied (Djojomartono and Pertiwi, 1998). Even in the modern day nowadays, the interpersonal communication channels are more effective, needed and believed by the farmers than the mass media to obtain information related to agriculture. Opara (2008), in her study has revealed that extension agents are the main sources for agriculture information among the farmers. There are several reasons for this and among which are the popularity of the extension agents among the farmers and the close relationship that occur between the extension agents and the farmers. Rees (2000) have agreed with what have been revealed by Opara (2008) when he claimed that farmers admitted the importance of the extension agents though there are unsatisfied with the quality and frequency of their interactions. Community leaders are also among the influential agriculture information sources among the farmers and this is not surprising as it has been proven by Opara (2008). Furthermore, Rees (2000) have claimed that NGOs are significant sources for agriculture information in the areas where they are active. Interestingly, it was revealed by Okwu and Daudu (2011); Lwoga *et al*. (2011); Ogbama (2010) and Daudu *et al*. (2009) that friend, relatives and neighbours are regularly available and accessible to the farmers to gain the agriculture information they need.

Fig. 1: Flow of Pahang River and Muar River

Pahang River and Muar River: Pahang River as one of the major rivers in Malaysia is the longest river in Peninsular Malaysia flows through two states in Malaysia; Johor and Negeri Sembilan. It covers 459km in length and rises in two headstreams, Jelai and Tembeling which are about 10 miles (16km) north of Jerantut and flows south past Temerloh, paralleling the Main Range to Mengkarak where, at the break of slope between the mountains and the plains, it brusquely turn eastward. Through alluvial plains of more than 20 miles (32km) in width, the river completes its 271 miles (436 kilometres) passage to empty into the South China Sea. Three quarters of its drain area is in Pahang and a quarter is in Negeri Sembilan whereby involve 29,300 km^2 of drained areas. Major town like Pekan, Maran, Temerloh, Jerantut, Kuala Lipis, Raub and Bentong which are located in the Pahang River basin is still a vital and essential source of community daily life. Several significances that is contributed by Pahang River to the people living along it are (1) source of protein (fish and fresh lobster), (2) mode of transportation; 3) sources of income (ex: aquaculture industry and sand mining industry) and (4) social and cultural activities (ex: recreational activities, leisure activities and annual events such as "Pesta Berakit" (Yassin *et al*., 2010).

Similar to Pahang River, Muar River is still indeed crucial for those community lives along it, flowing through states of Malaysia; Johor and Negeri Sembilan. Starting from a place in Negeri Sembilan called Jempol, it flows to Malacca Straits through Kuala Muar. Muar River is famous for its history as a route used by Hang Tuah, a well-known Malay warrior in his pursuit of Tun Teja, a beautiful princess for the Sultan of Malacca. Also, along the Muar River there are several historical monuments such as Bukit Kepong Police station, Kota Buruk and World War 2 bombed bridge called "Jambatan Patah".

Aside from the historical value, Muar River is popular with its fresh lobster. For fishing enthusia sts, Muar River is their fishing heaven. The lucrative price of fresh lobster which can reach up to USD12 per kilo is one of the reasons that the local and outsider fish for it (Yassin *et al*., 2010)

Jempol in Negeri Sembilan is a place where Pahang River and Muar River almost meets. The stream of Pahang River which is Serting River flows into Bera River. Meanwhile, Jempol River flows into Muar River. Historically, it was a important route for trading activities. To continue to Terengganu, trading boats from Muar River used this route to reach Kuala Pahang in Pekan or Kuala Lipis. The boats need to be pulled 300 meters overland at Jalan Penarikan before proceeding their journey to either Pahang River or Muar River. Interestingly, the site is named as "Penarikan" which is a Malay word for pulling because of the boats pulling activity done there. Fig. 1 illustrates the flows of Pahang River and Muar River.

MATERIALS AND METHODS

This is a quantitative study where a developed questionnaire was employed to gather the required data. Through a simple random sampling, 900 respondents were chosen. The chosen respondents were the villagers living along Pahang and Muar Rivers. The respondents were from three main districts in which the Pahang and Muar Rivers flow namely Pekan (end of Pahang River), Bahau (place where Pahang and Muar Rivers are nearly connected) and Muar (end of Muar River). Each of the districts was represented by 300 respondents. To fulfil the objective determined, there were 11 agriculture information sources included in the questionnaire. Five of the sources were focused on the mass media sources namely television, radio, internet, newspaper and magazine while the remaining sources (6) focused on the interpersonal sources namely government officers, NGO officers, family members, friends, village leaders and village administration members and politicians. The respondents were asked the frequency of the agriculture information they received from the sources that were listed. There are five degrees of frequency available to be chosen by the respondents where 1 represented absolutely not frequent; 2 represented not frequent; 3 represented moderately frequent; 4 represented frequent and 5 represented absolutely frequent. To analyse the data, SPSS was used, analyses such as frequency, percentage, mean and standard deviation were employed

to describe the general data of the study while inferential analysis (ANOVA) was employed to reveal any difference that might occur between the variables.

RESULTS

As been demonstrated in Table 9, slightly majority of the respondents were male (55.3%). The mean score for age of the respondents was 53.5 years and nearly half of the respondents (49.7%) were in the group age of 41-60 years. Only a small number of the respondents (2.1%) were found to possess degree/Master/PhD level of education compared to 32.7% of the respondents who possess primary school level of education. It is good to know that a total of 16.0% of the respondents managed to earn >RM2,501 per month while it is a concern to know that a total of 19.6% of the respondents just managed to earn income <RM500 per month. Majority of the respondents can be considered as the "senior" villagers based on the mean score recorded for the period of staying at the village which was 40.9 years. More than one third of the respondents (35.0%) were detected to stay >11km from the nearest city compared to 36.2% who stayed <5km from the nearest city. A total of 25.6% of the respondents stayed <250 meters from the Pahang/Muar river, 26.3% stayed between 251-500 meters from the river while 25.9% were identified to stay 501-1000 meters from Pahang/Muar river. A large majority of the respondents (44.4%) have 3-5 household members.

Table 10 has informed on the overall mean score on receiving the agriculture information from mass media sources among the respondents. To gain the overall mean score, a cumulative value from the five sources listed was compared. Then the cumulative value was categorized into three groups namely low (1.00-2.33), moderate (2.34-3.67) and high (3.68-5.00) respectively. Based on the overall mean score, it can be seen that the respondents studied moderately received agriculture information from the mass media sources based on the mean score recorded (M = 2.44).

Analysis employed has specifically informed that slightly more than half of the respondents (50.1%) have moderately received agriculture information from mass media sources.

Results demonstrated in Table 11 have revealed that majority of the respondents studied relied heavily on television and this can be based on the high overall level of mean score recorded (M = 3.74).

Table 12 revealed the information regarding the overall level of receiving the agriculture information from interpersonal sources among the respondents. Similar to procedures of getting the overall mean score for receiving agriculture information from the mass media source, the overall mean score for receiving agriculture information from interpersonal sources was obtained by gaining the cumulative value of the six sources studied and then the cumulative value was categorized into three groups namely low (1.00-2.33), moderate (2.34-3.67) and high (3.68-5.00).

Table 9: Socio-demographic data of the respondents

Level	Frequency	(%)	Mean	SD
Gender				
Male	498	55.3		
Female	402	44.7		
Age (years)			53.5	14.6
<40	165	18.3		
41-60	447	49.7		
>61	288	22.0		
Level of education				
Never been to school	72	8.0		
Primary School	294	32.7		
PMR/SRP/LCE	187	20.8		
SPM/SPMV/MCE	270	30.0		
Skills certificates	15	1.7		
STPM/Diploma	43	4.8		
Degree/Master/PhD	19	2.1		
Income per month			1874.74	5375.53
≤RM500	176	19.6		
RM501-RM1000	251	27.9		
RM1001-RM1500	155	17.2		
RM1501-RM2500	174	19.3		
>RM2,501	144	16.0		
Period of staying at the village (years)			40.9	21.6
<25	250	27.8		
26-50	322	35.8		
>51	328	36.4		
Distance to the nearest city (km)			10.98	10.39
≤5	326	36.2		
6-10	259	28.8		
≥11	315	35.0		
Distance to nearest river (meter)			0.86	0.65
<250	230	25.6		
251-500	237	26.3		
501-1000	233	25.9		
1001-2000	200	22.2		
Number of family members				
1-2	200	22.2		
3-5	400	44.4		
6-7	187	20.8		
>8	111	12.3		

Table 10: Overall level of mean score on receiving agriculture information from mass media sources

Receiving agriculture information from mass media sources	Frequency	Percentage	Mean	S.D
			2.44	0.806
Low (1.00-2.33)	394	43.8		
Moderate (2.34 – 3.67)	451	50.1		
High (3.68-5.00)	55	6.1		

Table 11: Agriculture information received from mass media sources

Sources	Pekan Percentage	Mean	S.D	Bahau Percentage	Mean	S.D	Muar Percentage	Mean	S.D
Television (Overall Mean Score = 3.74)		4.28	1.08		3.62	1.47		3.32	1.42
Absolutely not frequent	3.3			14.7			16.0		
Not frequent	4.3			10.3			14.0		
Moderately frequent	15.3			14.7			19.0		
Frequent	15.3			19.0			23.7		
Absolutely frequent	61.8			41.3			27.3		
Radio (Overall Mean Score = 2.33)		2.71	1.27		2.14	1.21		2.13	1.16
Absolutely not frequent	18.3			37.0			36.7		
Not frequent	30.3			32.7			33.7		
Moderately frequent	26.0			17.7			14.0		
Frequent	12.4			4.3			11.0		
Absolutely frequent	13.0			8.3			4.7		
Internet (Overall Mean Score = 1.39)		1.43	0.906		1.46	1.05		1.28	0.791
Absolutely not frequent	76.0			79.3			85.0		
Not frequent	12.7			8.0			7.3		
Moderately frequent	6.7			5.0			4.0		
Frequent	2.0			3.0			1.7		
Absolutely frequent	2.6			4.7			2.0		
Newspaper (Overall Mean Score = 3.10)		3.38	1.44		3.14	1.65		2.79	1.47
Absolutely not frequent	15.0			27.0			26.3		
Not frequent	14.0			13.7			22.3		
Moderately frequent	22.0			13.0			16.3		
Frequent	16.3			11.3			16.3		
Absolutely frequent	32.7			35.0			18.8		
Magazine (Overall Mean Score = 1.63)		1.81	1.04		1.61	.991		1.46	.878
Absolutely not frequent	53.0			64.7			71.0		
Not frequent	22.7			18.0			18.7		
Moderately frequent	16.0			12.0			6.0		
Frequent	6.7			2.3			2.0		
Absolutely frequent	1.6			3.0			2.3		

Table 12: Overall level of mean score on receiving agriculture information from interpersonal sources

Receiving agriculture information from interpersonal sources	Frequency	(%)	Mean	S.D
			2.66	1.75
Low (1.00-2.33)	367	40.8		
Moderate (2.34 – 3.67)	393	43.7		
High (3.68-5.00)	140	15.6		

Based on the analysed result, it can be seen that the respondents studied have moderately received the agriculture information from the interpersonal sources. It is good to know that a total of 15.6% have identified to receive agriculture information from the interpersonal sources at a high level.

In term of interpersonal sources, three of six sources studied recorded a moderate overall mean score and the sources were family members (M = 3.37) friends (M = 3.52) and village leaders and village administrators (M = 3.52).

The remaining sources studied namely government officers (M = 2.21), NGO officers (M = 1.62) and politicians (M = 2.17) were detected to score a low level of mean score. Specifically, respondents in Pekan seems to have benefited a lot from their good relationship with their family members, friends and village leaders and village administration members in term of receiving the agriculture information and this can be proven when these three sources scored a high level of mean score. Similarly, the respondents in the three districts seem not to receive much agriculture information from the NGO officers based on the low level of mean score recorded in this source by the respondents in the three districts studied. In term of receiving the agriculture information from the government officers, only respondents in Pekan and Bahau have moderately received the agriculture information from this source. Nevertheless, respondents in Muar have received the agriculture information from the government officers at a low level. Comparing the respondents in the three districts, only respondents in Pekan have moderately received agriculture information from the politician and the respondents in Bahau and Muar only score a low level of mean score (Table 13).

Table 13: Agriculture information received from interpersonal sources

Sources	Pekan Percentage	Mean	S.D	Bahau Percentage	Mean	S.D	Muar Percentage	Mean	S.D
Government Officers (Overall Mean Score = 2.21)		2.53	1.32		2.34	1.43		1.19	1.14
Absolutely not frequent	32.30			41.00			43.00		
Not frequent	16.00			19.00			31.30		
Moderately frequent	27.00			16.70			15.30		
Frequent	16.00			10.00			4.30		
Absolutely frequent	8.70			13.30			6.00		
NGO Officer (Overall Mean Score = 1.62)		1.79	0.947		1.62	0.966		1.43	0.698
Absolutely not frequent	50.30			63.30			66.00		
Not frequent	26.70			20.00			26.70		
Moderately frequent	18.30			9.70			6.00		
Frequent	3.30			5.70			0.70		
Absolutely frequent	1.40			1.30			0.60		
Family Members (Overall Mean Score = 3.37)		4.02	1.08		2.98	1.43		2.68	1.33
Absolutely not frequent	5.00			24.00			27.00		
Not frequent	4.00			10.70			20.30		
Moderately frequent	15.00			28.30			15.00		
Frequent	36.30			17.00			30.70		
Absolutely frequent	39.70			20.00			6.30		
Friends (Overall Mean Score = 3.52)	4.05	1.06		3.15	4.15		2.83	1.35	
Absolutely not frequent	4.30			21.70			25.70		
Not frequent	5.00			9.70			14.30		
Moderately frequent	12.70			24.00			21.00		
Frequent	37.70			21.30			29.70		
Absolutely frequent	40.30			23.30			9.30		
Village Leaders and Village Administrators Members (Overall Mean Score = 3.52)	3.80	1.21		3.34	1.36		2.93	1.32	
Absolutely not frequent	6.70			14.00			22.70		
Not frequent	9.00			13.70			11.00		
Moderately frequent	18.30			22.00			28.70		
Frequent	30.00			25.00			26.00		
Absolutely frequent	36.00			25.30			11.60		
Politicians (Overall Mean Score = 2.17)	2.44	1.26		2.12	1.31		1.78	1.05	
Absolutely not frequent	30.00			47.30			54.00		
Not frequent	23.00			18.70			25.00		
Moderately frequent	28.70			16.30			12.70		
Frequent	9.30			10.00			5.30		
Absolutely frequent	9.00			7.70			3.00		

Table 14: Ranking of the communities in the three districts in term of receiving agriculture information from mass media sources

Mass media sources	Ranking 1	Ranking 2	Ranking 3
Television	Pekan	Bahau	Muar
Radio	Pekan	Bahau	Muar
Internet	Bahau	Pekan	Muar
Newspaper	Pekan	Bahau	Muar
Magazine	Pekan	Bahau	Muar

Table 15: Ranking of the communities in the three districts in term of receiving agriculture information from interpersonal sources

Interpersonal sources	Ranking 1	Ranking 2	Ranking 3
Government officers	Pekan	Bahau	Muar
NGO officers	Pekan	Bahau	Muar
Family Members	Pekan	Bahau	Muar
Friends	Pekan	Bahau	Muar
Village Leaders and Village Administration Members	Pekan	Bahau	Muar
Politicians	Pekan	Bahau	Muar

In Table 16, the differences between the three districts in term of aspects of sources of receiving the agriculture information were investigated. Inferential analysis using ANOVA was performed to inspect any difference that might occur.

For the aspect of receiving agriculture information from the mass media sources, the study has shown that the highest mean score was recorded by respondents in Pekan (M = 2.72) followed by respondents in Bahau (M = 2.39) and respondents in Muar (M = 2.20). Based on the F value (3, 900) = 34.804, $p<0.05$, there was significant difference with regard to receiving agriculture information from the mass media sources between the three districts studied. Further analysis using Post Hoc test revealed that there was a significant difference in this aspect between respondents in Pekan and respondents in Bahau and Muar.

For the aspect of receiving agriculture information from the interpersonal sources, based on the F value (3, 900) = 64.771, $p< 0.05$, there was significant difference recorded. The highest mean score was recorded by the respondents in Pekan (M = 3.10).

Table 16: Difference between three districts in term of receiving the agriculture information from mass media and interpersonal sources

Variables	N	Mean	SD	F	P
Sources of agriculture information (mass media)				34.804	0.0001
Pekan	300	2.72	0.706		
Bahau	300	2.39	0.861		
Muar	300	2.20	0.756		
Sources of agriculture information (interpersonal)				64.771	0.0001
Pekan	300	3.10	0.853		
Bahau	300	2.59	1.01		
Muar	300	2.27	0.822		

The second highest mean score was recorded by the respondents in Bahau (M = 2.59) while the lowest mean score was recorded by the respondents in Muar (M = 2.27). Post Hoc test identified that there was a significant different in this aspect between respondents in Pekan and respondents in Bahau and Muar.

DISCUSSION

This study provides a deep understanding on the sources of agriculture information among the rural community living along Pahang and Muar rivers which necessitates a need for demand-led and client-based agriculture information services in order to meet the disparate rural community needs.

Based on the results demonstrated, it can be seen that rural community are receiving more agriculture information from the interpersonal sources compared to the mass media sources. One of the reasons that might contribute to this is that the frequency and the quality of interpersonal communication that occur between rural community and interpersonal sources such as friends, family members and village leaders (Okwu and Daudu, 2011; Lwoga *et al*., 2011; Ogbama, 2010; Daudu *et al*., 2009). The close relationship that exists between these groups enables the agriculture information sharing. Lwoga *et al*. (2011) for example have stressed that interpersonal sources such as friends, family members and neighbours are always become the main providers of the agriculture information due to their credibility, reliability and most of all, they are trusted by the rural community. Furthermore, Lwoga *et al*. (2011) revealed that agriculture information received from the mass media is considered as one way communication whereas the agriculture information received from interpersonal sources are considered as two way communication where the rural community have the chances to gain a deep understanding of the information received. Nevertheless, roles of government officers (especially extension agents) should be further strengthened in order to do this

In term of mass media sources, rural community living along Pahang and Muar rivers was found to receive more agricultural information from television and newspaper compared to radio, magazine and internet. Findings of this study is in line with what have been found by Hassan *et al*. (2010b); Odiaka and Obinne (2010); Shaffril *et al*. (2009b) and Umeh (2008) where they identified that rural community especially those who get involve in agriculture prefer television and newspaper for getting their agriculture information. Hassan *et al*. (2010b) for example has identified a number of reasons that contribute to this, first is the rural community found that the contents in television and newspaper are attractive and interesting, second is the information received from these two sources are more understandable and third is these two sources especially the newspaper are easily available to them.

Respondents studied seem not receiving much agriculture information from radio. Hassan *et al*. (2010) have concluded that among the reasons that might contribute this is the rural community are not aware of the schedule (air time) of the radio program, they prefer more entertainment program rather than agriculture program and the air time of the agriculture program are not suitable. Nonetheless, findings of this study contradicted with what has been found by Munyua (2000); Chapman *et al*. (2003) and Craig (2001) who said that rural radio was successful in delivering agricultural information to a target groups. Rural community seems reluctant to use the advance technology such as internet to receive agriculture information. Results of this study is not surprising as it is in tandem with what have been done by Abu Hassan *et al*. (2009); Shaffril *et al*. (2010) and Samah *et al*. (2011). Abu Hassan *et al*. (2009) for example have demonstrated a few reasons why people are reluctant to use advance technology such as internet and among the reasons are do not know the benefits of the advance technology, do not have skills or expertise in using the advance technology, lack of time spent on ICT and difficulties in using ICT.

To provide a better access to the agriculture information especially from the mass media, Hassan *et al* (2010), have suggested the concern parties can take initiatives by producing brochures or pamphlets that can inform rural community on the schedules of television and radio agriculture programs air time together with a list of agriculture agencies websites and

newspaper that have agriculture segments. Certainly, by doing this, the rural community will receive a lot of information on all of the agriculture programs available. It is also recommended that the awareness on the importance of agriculture information should be enlightened to the rural community by the concern parties. If radio and television need to be used as effective channels for agriculture information dissemination, efforts must be taken to guarantee that the airing times are suitable. It is also recommended that the concern parties responsible in disseminating agriculture information to employ media that are able to fulfil the demand of the agriculture community.

CONCLUSION

Based on the results of the study, we can conclude that majority of the respondents selected were male, age between 40-60 years, possessed primary school level of education, earned between RM501-RM1000 per month, have stayed for more than 51 years in the village, stayed >11 km from the nearest city and stay between 251-500 meters from Pahang/Muar river.

Generally, receiving the agriculture information through mass media by the community living along Pahang and Muar Rivers was at a moderate level. Based on the data presented at Table 14, we can conclude that rural community in Pekan receive a good amount of agriculture information from the sources listed and this can be proven when they are ranked first at all aspects listed except for internet where Bahau was ranked first.

Similarly to the mass media sources, we can conclude that rural community in Pekan have benefited a lot from their interpersonal sources in term of receiving the agriculture information and this is not surprising as they were ranked first in all interpersonal sources listed. Conversely, rural community in Bahau ranked second in all of the sources listed while rural community in Muar ranked third in all of the interpersonal sources listed (Table 15). There might be a possibility that community in Pekan do received a lot of agriculture information (either mass media or/and interpersonal sources) due to its relevancy to their agriculture activities; Pekan is well known with their agriculture projects. Comparatively, rural community in Muar may receive less information on agriculture due to the fact that Muar now are moving towards becoming an industrial district.

REFERENCES

Abu Hassan, M.S. H.A.M. Hassan, Shaffril and D.S. Jeffrey Lawrence, 2009. Problems and obstacles in using Information and Communication Technology (ICT) among Malaysian Agro-Based Entrepreneurs. Eur. J. Sci. Res., 36: 93-101.

Chapman, R., 2003. Rural Radio in Agricultural Extension: The Example of Vernacular Radio Programmes on Soil and Water Conservation in N. Ghana. 1st Edn., ODI Agricultural Research and Extension Network, London, ISBN: 0850036402, pp: 12.

Craig, S., 2001. "The Farmers Friend": The radio come to rural America, 1920-1927. J. Radio Stud., 8: 330-346.

Daudu, S., S.S. Chado and A.A. Igbashal, 2009. Agriculture information sources utilized by farmers in bunue state, Nigeria. Patsunk J., 5: 39-48.

Djojomartono, M. and S. Pertiwi, 1998. Present status of information technology utilization in Indonesian agriculture. Bogor Agricultural University.

Hassan, M.S., H.A.M. Shaffril, B.A. Samah, M.S.S. Ali and N.S. Ramli, 2010a. Agriculture communication in Malaysia: The current situation. Am. J. Agric. Bio. Sci, 5: 389-396. DOI: 10.3844/ajabssp.2010.389.396

Hassan, M.S. H.A.M. Shaffril, M.S.S. Ali and N.S. Ramli, 2010b. Agriculture agency, mass media and farmers: A combination for creating knowledgeable agriculture community. African J. Agric. Res., 5: 3500-3513.

Lwoga, E.T., C. Stilwell and N. Ngulube, 2011. Access and use of agricultural information and knowledge in Tanzania. J. Agric. Knowl. Inform., 60: 383-395 DOI: 10.1108/00242531111135263

Lwoga, E.T., 2010. Bridging the agricultural knowledge and information divide: The case of selected telecenter and rural radio in Tanzania. EJISDC, 43: 1-14.

Munyua, H., 2000. Cited in: Munyua, Hilda (n.d.) Information and communication technologies for rural development and food security: lessons from field experiences in developing countries. Sustainable Development Department, Food and Agriculture Organization of United Nation.

Odiaka, E.C and C.P. Obinne, 2010. Co-orientation in gender preferences for mass media usage among benue farmers. J. Agric. Food Inform., 11: 322-329 DOI:10.1080/10496505.2010.512249

Ogbama, M.U., 2010. Access to agriculture information among fish farmers in Niger delta region of Nigeria. University of Nebraska Lincon.

Okwu, O.J and S. Daudu. 2011. Extension communication channels' usage and preference by farmers in bunue state Nigeria. J. Agric. Extension Rural Dev., 3: 88-94.

Opara, U.N., 2008. Agricultural information sources used by farmers in imo state Nigeria. J. Inform. Dev., 24: 289-295. DOI: 10.1177/0266666908098073

Samah, B.A., H.A.M. Shaffril, M.A. Hassan and J.L. D'Silva., 2011. Can technology acceptance model be applied on the rural setting: the case of village development and security committee in Malaysia. J. Soc. Sci., 7: 113-119.

Shaffril, H.A.M., M.S. Hassan and B.A. Samah, 2009a. Level of agro-based website surfing among Malaysian agricultural entreprenuers: A Case of Malaysia. J. Agric. Social Sci., 5: 55-60.

Shaffril, H.A.M., M.S. Hassan and I. Beydha 2009b. Level of Mass Media Usage (Television, Radio and Newspaper) among Malaysian Agro-Based Entrepreneurs. J. Commun. Knowl. Commun., 1: 28-38.

Rees, D., 2000. Agriculture Knowledge and Information Systems in Kenya: Implications for Technology Dissemination and Development. 1st Edn., Overseas Development Institute, London, ISBN: 0850034892, pp: 16.

Umeh, G.N., 2008. Assessment of Mass Media Usage for Farm Information By Farmers In Afikpo LGA of Ebonyi State: Implication for Information and Communication Technology (ICT) Application to Agricultural Technology Transfer. Continental J. Inform. Technol.., 2: 9-12.

Yassin, S.M., H.A.M. Shaffril, M.S. Hassan, M.S. Othman and A.A. Samah et al., 2010. Prospects of waterway development as a catalyst to improve regional and community socio-economy level. Am. J. Econ. Bus. Admin., 2: 240-246. **DOI:** 10.3844/ajebasp.2010.240.246