BIBLIOGRAPHY

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Adviser: Igrelyn P. Pinos-an, BS

ABSTRACT

This study aimed to determine the profile of the respondents, the agencies sources of information, the scientific information that they disseminate and the communication media they used in disseminating the scientific information. Likewise, the study aimed to identify the feedback mechanisms of the agencies towards the disseminated information as well as the challenges faced by the agencies in managing scientific information.

The results showed that most of the respondents were young adults though they have lengthy time experience in promoting technological and scientific information.

The science and technology agencies have various sources of scientific information. It could be from their central office, partner agencies or arm agencies. Likewise, they acquire information from the technicians, experts, common people like farmers and fisher folks, books or any information materials and internet.

Some also said that the information they disseminate were based on their learned experiences from their program implementations and research outputs.

Meanwhile, the selected agencies convey topics that touched the major concerns of their clients like health and agriculture. Aside from that, they also transmit information on environment, innovations, and analyses results.

The study showed that the agencies were using various communication media in disseminating scientific information. These include communication through radio, print, exhibits, film showing, trainings, seminars, forums and website.

The agencies claimed that they learn their clients' feedback by floating random sampling surveys, evaluation sheets, and training needs assessment. Likewise, they placed their contact number, e-mail and office addresses, wherein their clients can give their feedback.

Since e-mails, contact numbers and addresses of the agencies are placed in the printed materials and in their web sites, their target audiences give their feedback by sending messages through e-mails, phone calls and text. Sometimes, they send letters.

It was found out that the major and common challenges of the respondents are lack of fund, lack of work force, lack of utility, lack of time, insufficient data by the primary source and unorganized flow of activities.

Based on the findings of the study, the following recommendations were drawn: BPI may consider establishing communication division so there will be people that would focus on popularizing research results of the agency. Other researchers may want to focus on the possible solutions to the challenges identified by the respondents.

Furthermore, findings of the study may be written in monograph to be shared with community development workers and the science communicators themselves.

RESULTS AND DISCUSSION

Five respondents per science and technology agencies were selected purposively based on the following criteria: they should have background and experience in reporting scientific information either in print, oral and electronic channels in the communities of Baguio City and La Trinidad, Benguet for at least one year.

Based on the given criteria, the director of the agencies recommended the respondents of the study.

Respondents' Profile

The profile of the respondents includes age, sex, highest educational attainment, number of years in practice as communicator of scientific information and their positions.

Age. Figure 5 shows that 10 of the respondents fall under the 21-29 category. The 47-54 age brackets came next, with eight respondents. This was followed by the 30-38 then by 55-62 brackets holding five and two respondents, respectively. It can be said that based on Erik Erikson's classification (1993) most of the respondents were young adults and were productive.

As stated by Atkinson and Murray (1985), most young adults have self-control and responsible behavior, can tolerate frustration, can plan realistically and implement those plans, can accept differences in others and can develop one's potentials.

On the other hand, it is not always true that the older a person is the more he has wisdom. This assumption goes along with the study of Padya-os (2005)
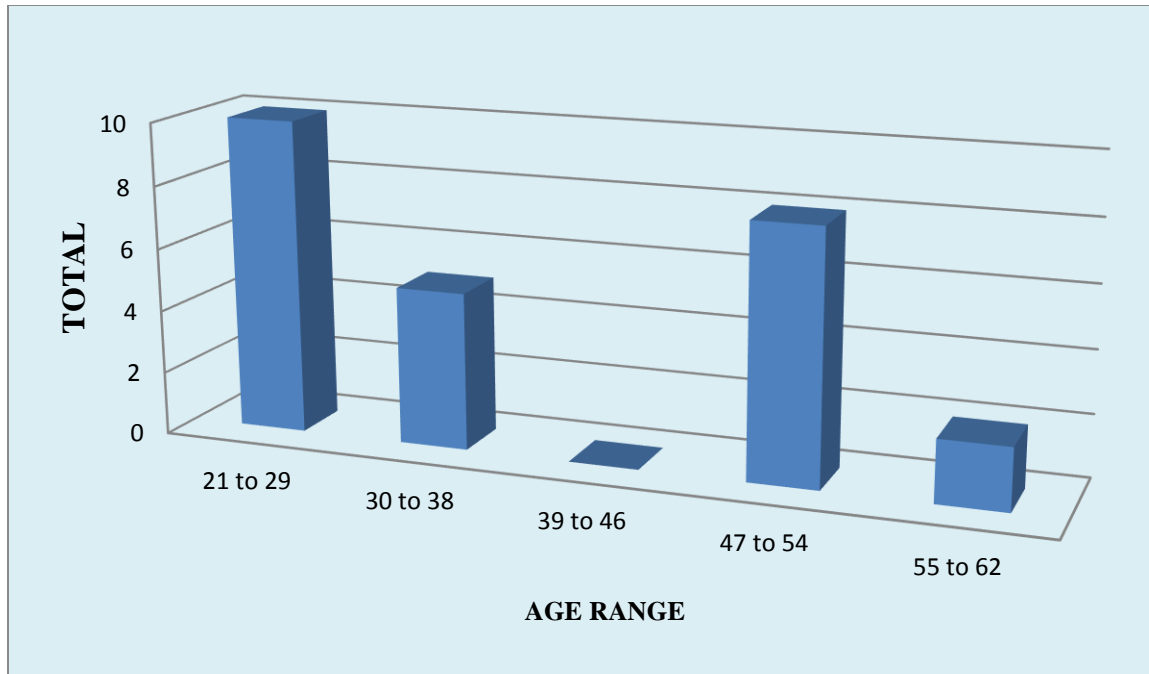
Figure 5. Graphical presentation of the age range of the respondent

that age did not significantly related to the supervisor's leadership in decision making, communication and supervision.

 In today's information age, hiring of young adults even fresh graduates by many government agencies had increased. This could possibly by the skills of the young adults in using modern technologies like computers (Eserver, 1995).

Eserver (1995) further explained that in all job categories (from clerks to professionals) people who know how to use computers earn more than those who do not, thus, computer skills are essential to function effectively in the society. Meanwhile, Marwick (2002) clarified that the older the person is, the lesser the probability that he will use modern technologies.

Sex. Figure 6 shows that among the 25 respondents, there were more female (15) than male (10).
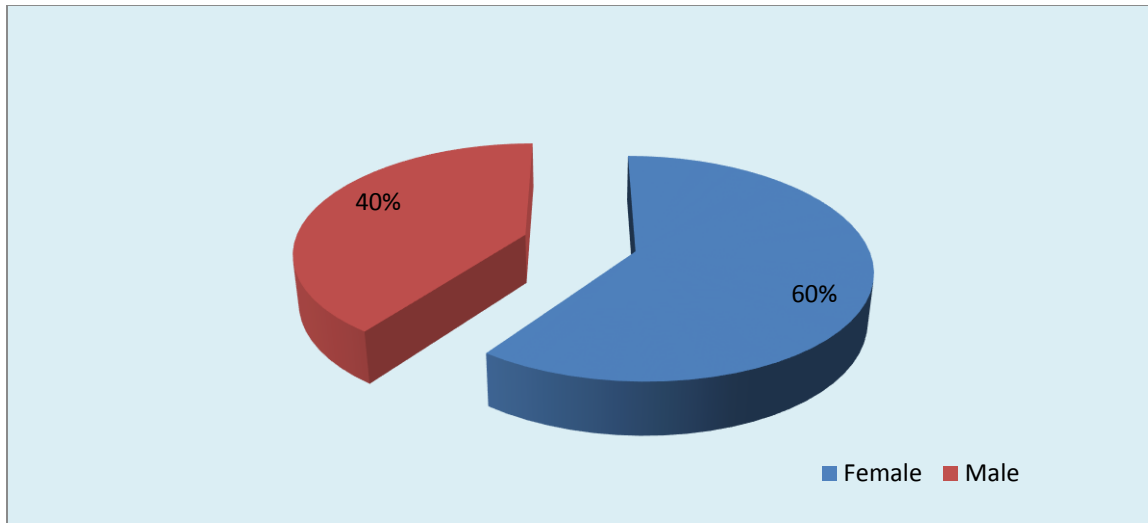
Figure 6. Graphical presentation of sex of the respondents

Highest educational attainment. Twelve of the respondents were college graduates while nine were masters' degree holders and three were having their on-going masters. Moreover, only one among the respondents is a doctorate degree holder. Educational attainment appeared as important variable for employment. The relationship between education level and employment showed that those with third level education were likely to be in the professional and managerial socio-economic groups.

However, many of the respondents continue their education to masters' degree. Seven of the respondents explained that their level of education served as reference to promotion and job stability.

Number of years of science communicator's practice. Results shows that 10 of the respondents' experience in transferring scientific information fall under the 1-6 years range. This was followed by 7-12, 19-24 and 25-30 then 13-18 work experience holding seven, three and two, respectively. The result entailed that majority of the respondents have lengthy-time experience in disseminating technological and scientific information.
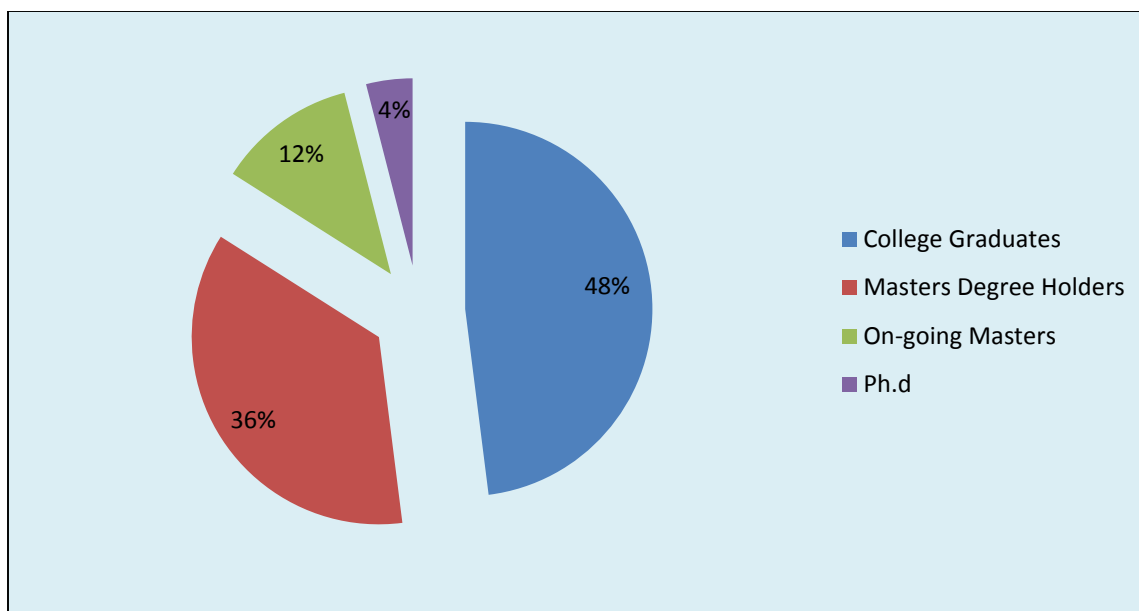
Figure 7. Highest educational attainment of the respondents

The mean number of years of service of the respondents was 10.52 with a standard deviation of 22.65. The finding showed that many of the respondents were permanently employed and have stayed for quite some time in the service.

Position of the respondents. The respondents of the study were employees of the selected science and technology agencies in Baguio City and La Trinidad, Benguet that were involved in transferring scientific information.

In the Department of Science and Technology (DOST), the respondents of the study were three Science Research Specialists I (SRS 1), one Science Research Specialists II (SRS II) and one Senior Science Research Specialist.

In the Department of Agriculture (DA), there were three Media Production Specialist I (MPS I), one Media Production Specialist II (MPS II) and one Regulation Information Officer.

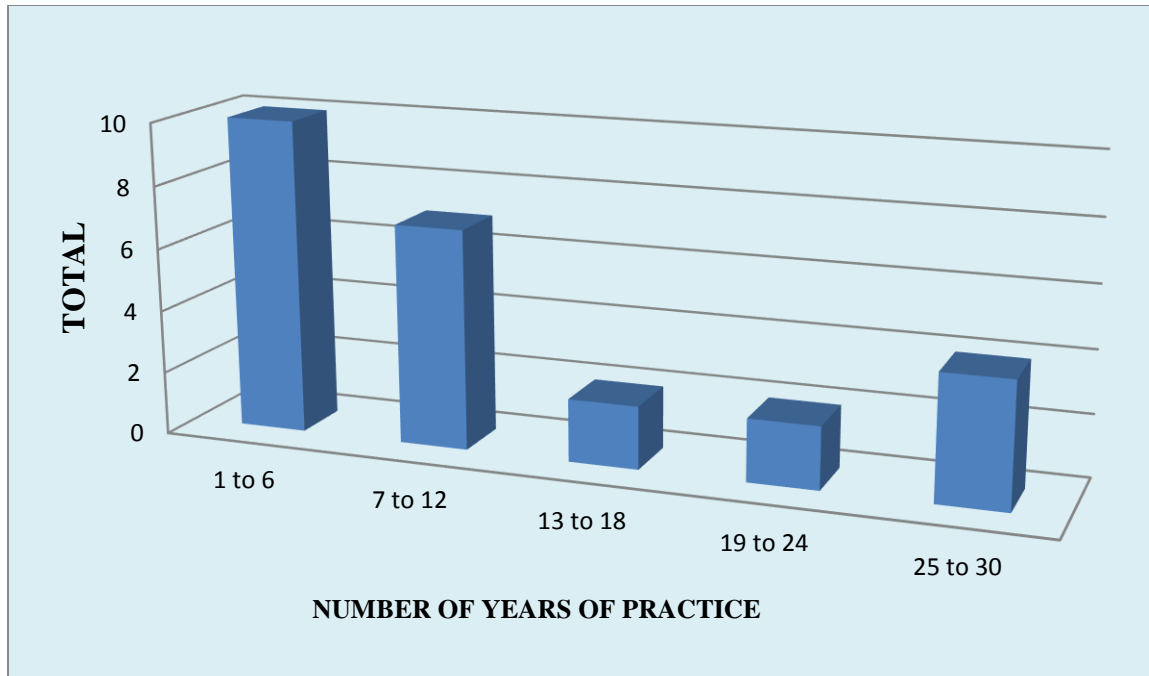Meanwhile, the respondents from Bureau of Plant and Industry (BPI),

Figure 8. Respondent's number of years in practice

who served as science communicators, were researchers themselves. They were called Agriculturists II.

On the other hand, the respondents from Bureau of Fisheries and Aquatic Resources (BFAR) were called Information support staffs encompassing three respondents, one Aqua culturist II and one Aqua technologist.

Moreover, there were two Promotion Officer I, one Health Promotion Officer III and two Administrations Assistant II respondents from Department of Health (DOH).

Sources of Information Disseminated
by the Science and Technology Agencies

Table 1 shows that the science and technology agencies have various sources of scientific information. It could be from their central office, partner agencies or   arm agencies. Likewise, they acquire information from the technicians, experts, common

Table. 1 Sources of information disseminated by the science and technology agencies

AGENCIES	SOURCES OF INFORMATION
DOST	Central office, partner agencies, books and other information materials, experts, public and internet
DA	Central office, arm agencies, books and other information materials, technicians, public and internet
BPI	Based on their research outputs, learned experiences from their program implementations, books and other information materials
BFAR	Central office, books and other information materials, experts, fisher folks and internet
DOH	Central office, books and other information materials, experts, public and internet

people like farmers and fisher folks, books or any information materials and internet.

Some also said that the information they disseminate were based on their learned experiences from their program implementations and research outputs.

DOST. Shiela Marie Claver, one of the respondents, explained that some of the scientific information they disseminate in Cordillera were from their central office. The information they acquire from here were new technologies and results of their partner research and development institutes like Food and Nutrition Institute (FNRI).

Aside from the information they acquire from their central office, Ms. Claver further explained that some scientific information they disseminate were from their partner agencies. Their partner agencies directly give them information materials in which they update and reproduce.

The DOST's partner agencies includes Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Advance Science and Technology Institute (ASTI), Industrial Technology Development Institute (ITDI), Science Education Institute (SEI), Philippine Textile Research Institute (PTRI) and among others.

In addition, DOST's source of information were experts. Accordingly, experts were invited especially on trainings to serve as speakers and trainers. Experts together

with the common people (i.e. businessperson and farmers) were sometimes interviewed by the DOST's correspondents to supplement their reports in their publications. Likewise, they read information from books, journals and internet.

DA. Like DOST, some of the scientific information disseminated by the Department of Agriculture (DA) were from their central office.

Shirley Rosario, one of the respondents, clarified that the technology guides and some Information Education Communication (IEC) materials were produced by their central office. "We download the materials then we reproduce it," she noted.

The respondents also mentioned that they acquire scientific information from their arm agencies like Bureau of Fisheries and Aquatic Resources (BFAR), Agricultural Training Institute- Cordillera Administrative Region (ATI-CAR), Cordillera Integrated Agricultural Research Center (CIARC) and among others.

They also said that some of the information they disseminate were based from the field experiences of their technicians and banner heads. Technicians in DA pertain to the agriculturists and field experts while banner heads pertains to their agency program leaders. In addition, the respondents interview scientists from different agencies and grassroots like farmers and businessperson in which these people were featured in DA magazine. The respondents also said that they read information materials and do research from the internet.

Two of the DA correspondents stressed on the importance of reading information materials and conducting interview with the experts and grassroots. "We do not immediately write articles after receiving the demand of our program banner," Rosario said. "We read books, we research and we conduct interview to make our articles more educating and substantial," she added.

BPI. Respondents from Bureau of Plant and Industry (BPI) said that the scientific information they convey were based on their experiences that they learned during their program implementations as well as from their research outputs.

"Our agency is a research agency and we generate technology that we personally share to our clients," says Juliet Ochasan, one of the respondents. She also explained that they package their own research in which they send to their central office including Highland Agriculture and Resources Research and Development Consortium (HARRDEC).

"Our central office is more on the administrative work of the centers," Ochasan clarified. Furthermore, the respondents said that they read books , journals and other information materials to support their findings.

BFAR. The Bureau of Fisheries and Aquatic Resources (BFAR) primarily   acquire

the scientific information that they disseminate from their central office in Manila.

"The scientific information that we communicate to our clients comes   from

our central office. But we only disseminate information that are   relevant

to the needs of the Cordilleran's," Martha Estima clarified, one   of the

respondents.

As in other agencies, correspondents from BFAR interview   experts

to obtain expert opinion on their topic. Likewise, they do research   from

the internet and read information materials like books to make their articles informative.

In addition, they interview Cordilleran fisher folks, which they feature in their magazines.

DOH. The Department of Health (DOH) also acquires the scientific   information

that they disseminate from their central office. The respondents said that there are already

available information materials provided by their central office in which they reproduce.

Aside from the scientific information acquired from their central office, the respondents

said that they acquire information from the agencies program coordinator and medical

personnel.

As in   other agencies, correspondents   from   DOH   do   research   and read

information materials for them to expound and simply technical l terms and make their

articles informative.

Scientific Information Disseminated
by the Science and Technology Agencies

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Table 2 shows that the science and technology agencies convey topics that touched the major concerns of their clients like health and agriculture. Aside from that, they also transmit information on environment, innovations and analyses results.

DOST. The Department of Science and Technology (DOST), which aims to promote environment- friendly technologies that improve the quality of life, disseminate information about new technologies and the research results of their partner agencies.

The agency also disseminate information on agriculture, forestry, fisheries, environment and industrial technologies.

 In addition,   the respondents claimed that the department likewise promulgates information on health, innovations and analyses results.

DA. The Department of Agriculture (DA) covered general knowledge on agriculture like food   staples   and   food   preparations   of   particular   agriculture products. The agency also disseminates information on crop based farming system, organic farming, soil and water conservation management and farm mechanization.

Furthermore, the agency disseminates information on animal raising, animal health care, feeds and feeding management. Likewise, they covered environmental issues such as pollution analysis, prevention and mitigation.

BPI. The Bureau of Plant and Industry (BPI), one arm agency of DA, disseminates information regarding their research outputs such as seeds and plant

Table 2. Scientific information disseminated by each science and technology agencies.

AGENCY	INFORMATION CONVEYED	INSTANCES

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Department of Science and Technology (DOST)	Analyses results, new technology, innovations and researches of their partner agencies	Topics on agriculture, environment, industrial technology, health, and environment.
Department of Agriculture (DA)	Agriculture	Food staples, crop production, crop based farming system, organic farming, soil and water conservation management, and farm mechanization
		Animal raising, animal health care, feeds and feeding management
	Environment	Pollution analysis, prevention and mitigation.
Bureau of Plant and Industry (BPI)	Agriculture	Information about seed and plant material production of crops and plant diseases control and management.
Bureau of Fisheries And Aquatic Resources (BFAR)	Fisheries	All information about fisheries like laws and methods on how to make fishponds.
Department of Health (DOH)	Health	Public health and well-being, reproductive health care, and development and evaluation of nutrition education and communication strategy.

material production of crops as well as technology guides about citrus, coffee and other agricultural products.

The agency also disseminates information on plant diseases, control and management.

BFAR. The Bureau of Fisheries and Aquatic Resources (BFAR), another arm agency of DA, disseminates information specifically on fisheries such as laws on fisheries, marketing and methods on how to make fishponds.

DOH. The Department of Health (DOH), on the other hand, is concerned with the people's health. They disseminate information on signs and symptoms, prevention and treatment of diseases.

According to the respondents, the topics that they disseminate were based on current situations. For instance, DOH disseminated information about measles last summer because the agency found out that the number of Filipino children, who died in measles, increases every year. Through their communication channels, signs, symptoms and prevention about the disease were explained.

Meanwhile, the agency also promulgates information on family planning, reproductive health care and nutrition education.

Communication Media Used by
the Agencies in Disseminating
Scientific Information

The respondents mentioned that their clients were comprised of various groups in the community, which embraces the government officials, farmers, students, scientists, science communicators, research institutions, private sectors, businessperson, youth and housewives. Hence, they build strategic methods to cater to the needs of their clients.

Table 3 shows the various communication media used by the agencies in disseminating scientific information. These include communication through radio, print, exhibits, film showing, trainings, seminars, forums and web site.

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DOST. The table showed that the Department of Science and Technology (DOST) produces print materials as a medium of communication. The respondents also said that they conduct film showings, exhibits, trainings and forums to increase public awareness on technological findings. Likewise, they post information on their web site.

For print, S&T Cordillera Gasset is the official publication of the DOST-CAR. Claver, the editor-in-chief, said that the writers of the newsletter were composed of various contributors and are from different provincial DOST centers. She also said that the publication is issued quarterly.

Aside from publishing on their own agency publication, correspondents from DOST contribute articles on local newspapers. Most of them contribute in Baguio Midland Courier, and Baguio Chronicle.

Meanwhile, the respondents said that among the Information, Education, Communication (IEC) material, they often produce brochures (see Figure 9). Two of the respondents explained that the IEC materials that they distributed were the standard materials coming from the central office that they updated.

These print materials are distributed to their partner agencies, government offices, and to their different stakeholders.

Table 3. Communication media used by the science and technology agencies.

AGENCY	COMMUNICATION MEDIA USED

DOST	Print, film showing, exhibits, trainings, forums and the web site
DA	Radio, print, exhibits, forums, and web site
BPI	Print, exhibits, training and seminars
BFAR	Radio, print, exhibits, training and seminars
DOH	Radio, print, exhibits, seminar and web site

Moreover, the respondents explained that they conducted film showings, exhibits and forums if they have special activities like anniversaries. These activities are annually carried during the agency's National Science and Technology Fair in Manila on July and during their Northern Luzon Cluster in Benguet State University on August or October. For trainings, the respondents explained that techno trainings were conducted region wide on arranged schedules, based on identified training needs and approved requests. If the regional director approved the activity, the training organizers will hold such activity following certain guidelines.

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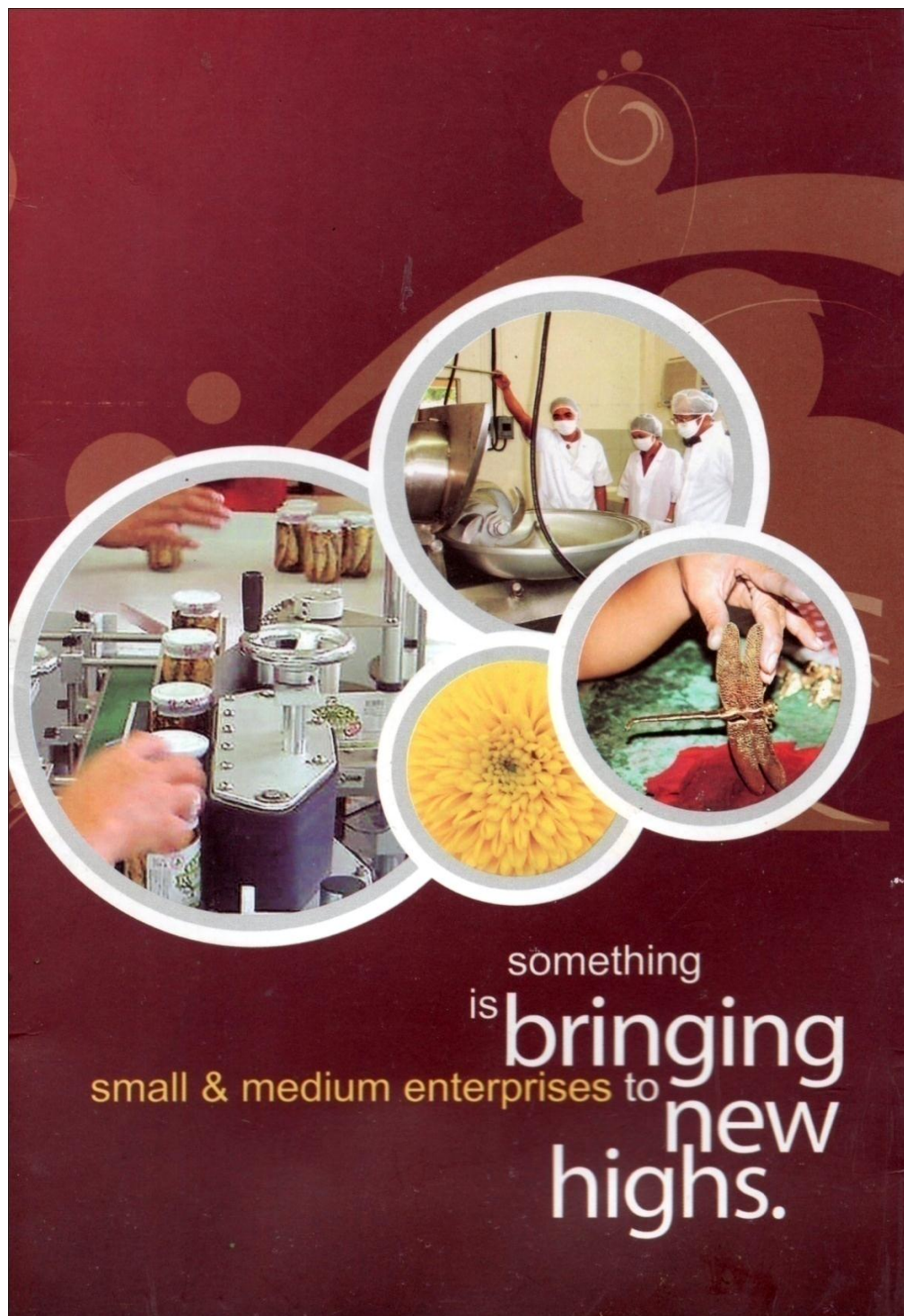VELANO, IVY JANE A. APRIL 2012

Figure 9. Example of brochure disseminated by DOST

The respondents likewise pointed out that they invite experts who will serve as trainers. As for 2011, the agency had conducted 54 trainings in the different places of Cordillera.

The website of DOST is *www.dost.gov.ph* (see Figure 10). The information about the agency, their services, activities and programs were posted in here.

DA. The table also showed that the Department of Agriculture (DA) uses radio as a medium of communication. The respondents said that they produce print materials like newsletters, and various kinds of IEC materials like posters, pamphlets and brochures. They also carry out activities like forums and exhibits. In addition, they post information in their website.

The respondents said that their agency do not conduct trainings since their arm agencies specifically the ATI-CAR was responsible of performing the said activity.

Meanwhile, Agri Pinoy Cordillera is the official radio program of DA. This program which is aired in Bombo Radyo was a packaged of plugs, trivia, spot news and magazine program. The magazine program was aired every Sunday from 9:00 to 9:30 in the morning with the use Ilocano language. On the other hand, plugs, trivia and spot news were aired from Monday to Friday every 5:00 to 5:30 in the morning.

For print, Agri Cordillera, which is issued quarterly, is the official publication of DA (see Figure 11). Alicia Tabano, one of the respondents, said that the correspondents of the newsletters were also the developers of IEC materials. "We, as media production specialists are multi- tasking," she explained.

Figure 10. Website of DOST

Figure 11. The official publication of DA

Aside from publishing on their agency publications, correspondents from   DA also contribute articles on local newspapers like Baguio Midland Courier.

All respondents claimed that their articles were hard and soft science stories, which are written in English. Hard science stories are sometimes called spot news or straight news while soft science stories are sometimes called feature   or timeless stories.

Brochures, leaflet, posters and calendars were the IEC print materials often produced by the agency (see Figure 12). Rosario mentioned that last year, there were about five topics produced for brochures, 15 for leaflets and five for posters, having 2,000 copies each.

These print materials were distributed to their different stakeholders and agencies like BPI, BFAR and CIEARC.

Meanwhile, the respondents said that they carry out exhibits and forums if they have special activities like anniversaries. They further explained that these activities are often carried together with the world's food day.

They also have special gathering called "Kapihan," in which they show their yearend accomplishments and new projects.

The website of DA is *www.da.gov.ph* (see Figure 13). The information about their agency, their services, programs and activities are posted in here.

BPI. Unlike other agencies, the Bureau of Plant and Industry's (BPI) communication strategy was limited only in producing brochures and leaflets and conducting trainings and seminars. However, they also carry out exhibits to present their findings. Likewise, they post information on their websites.
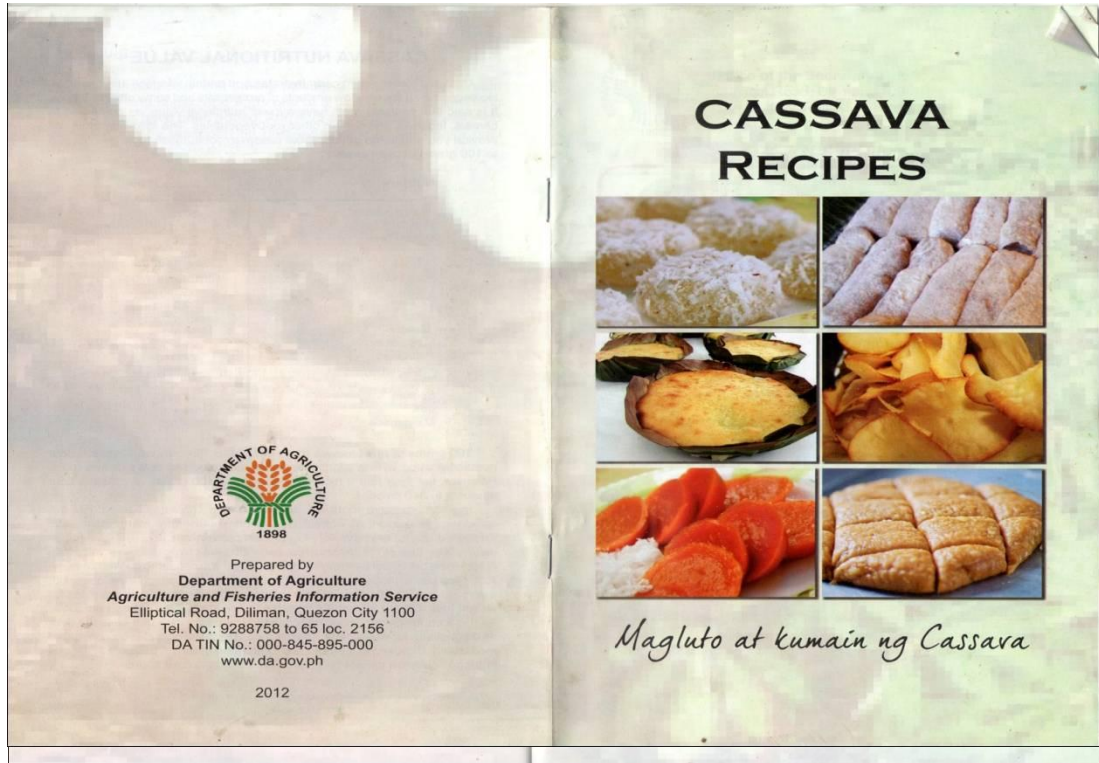
Figure 12. Example of brochure disseminated by DA

Figure 13. Website of DA

Ochasan again explained that their agency's main work is to generate information and their information dissemination activity is embedded within their work but it is not extensive. She also said that their main concern is to guide and provide technical assistance to their clients.

Nancy Aspura, one of the respondents, seconded Ochasan's remark. She explained that they communicate their research outputs to their clients but their communication program is not extensive.

"Our job is focused on generating technology but we are still in contact with our clients," she said. "We share our researches to our clients but our communication program is not that extensive," she added.

Apura further explained that they do not produce magazines and newspapers because their central office in Manila was responsible for it.

She also said that the researchers themselves were responsible of making brochures or leaflets of their own research (see Figure 14). For 2011, 400 IEC materials having different titles were produced by the researchers of the agency.

The respondents explained that they conduct trainings or seminars if they have special projects and if the project is funded. They were also invited as speakers or resource persons in some trainings and seminars.

The respondents pointed out that they conduct trainings and seminars upon request of their clients. They also said that they used vernacular languages mixed with English and Tagalog during their activity. For 2011, 10 batches of trainings were conducted by the agency.

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Republic of the Philippines
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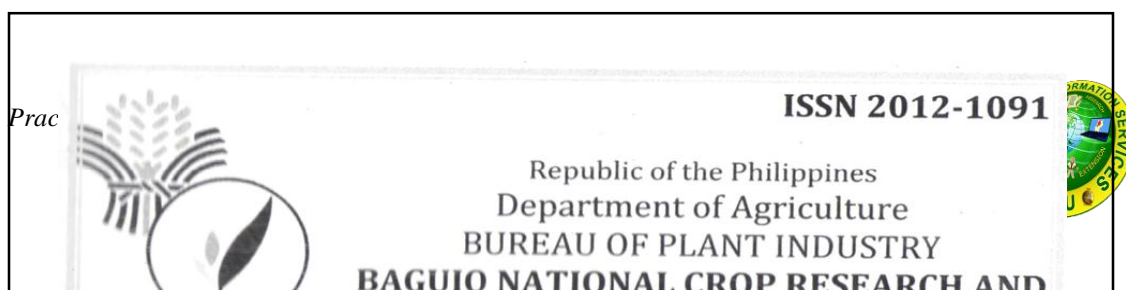BAGUIO NATIONAL CROP RESEARCH AND

Figure 14. Example of brochure disseminated by BPI

As for other agencies, BPI also carries out exhibits if they have special occasions like anniversaries. According to the respondents, research outputs and technology guides are presented in their exhibits.

Meanwhile, the website of BPI is *www.bpi.da.gov.ph* (see Figure 15). The information about their agency, their services, programs and activities are posted in here.

BFAR. The table shows that the Bureau of Fisheries and Aquatic Resources (BFAR) produces print materials as a medium of communication. In addition, they conduct exhibits, trainings and seminars to guide and raise the understanding of the fisher folks in Cordillera. To promote the researches and programs of BFAR, the respondents mentioned that their agency is currently establishing their own regional website.

The respondents, on the other hand, explained that they do not have radio programs but they invite employees from broadcasting stations like Bombo Radyo and ABS-CBN to broadcast researches from their agency.

Cordillera Fisheries Review is the official publication of BFAR. Rodalyn Foronda, one of the respondents, said that only few write articles in their publication that is why they are not able to produce it quarterly. "We do lots of things and our job is not concentrated in writing only. Paul Joseph Nuval explained, one of the respondents. "We also travel and attend trainings," he added.

Meanwhile, Foronda said that they have magazines (see Figure 16) wherein fisher folk's lifestyles were featured. Last year, they produced a magazine entitled Yu-Yu otherwise known as loaches.

Figure 15. Website of BPI

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Figure 16. Magazine of BFAR

The correspondents of BFAR claimed that their articles were hard and soft science stories,

which were written in English. They also mentioned that their   articles were

development communication (dev't com) in approach. Nuval and   Foronda said

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that the training they had during their college years was also the practice that they perform in their careers.

Moreover, the respondents said that the IEC materials they disseminate comes from their central office in which they reproduce. There were about 11, 500 pieces of brochures reproduced by the agency for 2011. The brochures have different titles, which is more on technology demonstration.

For trainings and seminars, Martha Estima, one of the respondents explained that the training or seminar that they conduct follows a two way process.

Estima said that Local Government Unit (LGU) would request from them. However before they conduct trainings, they examine first if the training asked by their clients is there need. "We validate first the needs of our clients to the LGU before we conduct trainings," Estima explained.

In addition, the respondents said that they used vernacular languages mixed with English and Tagalog during their activity.

The respondents mentioned that they had conducted 19 trainings for 2011 in the different places of Cordillera. These trainings were subdivided into three areas. There were 17 trainings conducted for aquaculture, six for regulatory and six for post-harvest.

Seminars were conducted every time the agency has projects.

Like other agencies, BFAR carries out exhibits if they have special activities like anniversaries and special occasions. The respondents claimed that they carry out exhibits during festivals like Lang-ay festival, Abra festival, and Strawberry festival.

DOH. The Department of Health (DOH) uses radio as a medium of communication. The respondents said that they produce print materials like newsletters, and various kinds of

IEC materials like posters, pamphlets and brochures. They also carry out activities like seminars and exhibits. Likewise, they post information in their website.

The respondents explained that they do not have radio programs but they invite employees from broadcasting stations like Bombo Radyo and ABS-CBN to broadcast researches and events from their agency.

In addition, they have radio plugs that were played in DZWT and DZWK from Monday to Friday every 7:30 in the morning and between 5:00 t0 6:00 in the afternoon. According to the respondents, they produce and air three plugs every month.

Health voice is the official publication of DOH. Rosella Bahni, one of the respondents, said that the publication is issued three times a year.

Aside from publishing on their agency's publications, correspondents from DOH contributed articles on local newspapers. Most of them contributed in Baguio Midland Courier.

Meanwhile, the respondents said that some of the print IEC materials that they disseminate in Cordillera were from their central office. However, they explained that they also produce information materials that were from their head promotion cluster.

For 2011, Bahni announced that their agency was able to produce more than 30,000 copies of posters, flyers, leaflets, brochures and flip charts holding different topics of the programs. The materials were about *leptospirosis*, women healthy lifestyle, "iwas stress", health care and "bawal manigarilyo",

Like other agencies, respondents claimed that they carry out exhibits if they have special occasions like anniversaries and if they have special program.

They said also that they conduct seminars in the different provinces

of Cordilleran if their agency has advocacies and special programs.   Their

clientele for the seminars were government officials and provincial medical officers

like midwife and nurses.

As for 2011, DOH was able to conduct more than 150 seminars in the different

provinces of Cordillera.

The website of DOH is *www.doh.gov.ph* (see Figure 17). As of other agencies, the

information posted in their website is about their agency, their services, programs and

activities.

Feedback Mechanisms of the Agencies
Towards the Disseminated
 Information

To improve the services provided by the respondents, Table 4 shows that the agencies

exercised various approaches in acquiring their clients' feedback.

Radio. The respondents from DA claimed that they learn their clients' comments and

suggestions by conducting random surveys. Accordingly, they let their audiences assess

their program as well as the anchors way of delivery.

In addition, they encourage their listeners to evaluate their program through text messages

and phone calls. Aside from acquiring feedbacks through phones, the respondents noted

that their clients sometimes send them letters.

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Figure 17. Website of DOH

Table 4. Feedback mechanisms of the agencies towards the disseminated information

COMMUNICATION MEDIA	AGENCIES	AGENCIES FEEDBACK MECHANISMS
Radio	DA	Conducts random survey
	DOH	Conducts survey
	DA	Float evaluation sheets
	DOST	Place e-mail and contact numbers on the print materials for comments and suggestions
	BFAR	Place e-mail and contact numbers on the print materials for comments and suggestions
	DOH	Place e-mail and contact numbers on the print materials for comments and suggestions
	BPI	They let the materials be evaluated by their agency heads and co-workers
Film Showings and Exhibits	DOST	Float evaluation sheets to the audience
	DA	Float evaluation sheets to the audience
	BPI	Float evaluation sheets to the audience
	BFAR	Float evaluation sheets to the audience
	DOH	Float evaluation sheets to the audience
Trainings and seminars	DOST	Float training needs assessment and questionnaires after the activity
	BPI	Float training needs assessment and questionnaires after the activity
	BFAR	Float training needs assessment and questionnaires after the activity
	DOH	Float training needs assessment and questionnaires after the activity
website	DOST	Encourage audience to post their comments by placing their contact addresses on the web site.
	DA	Encourage audience to post their comments by placing their contact addresses on the web site.
	BPI	Encourage audience to post their comments by placing their contact addresses on the web site.
	DOH	Encourage audience to post their comments by placing their contact addresses on the web site.

On the other hand, respondents from DOH said that they do not have feedback mechanisms for radio plugs. "We have no feedback mechanism for plugs but we take our audience feedback by chance if we conduct survey," Bahni explained.

Print. The Department of Agriculture (DA) floats evaluation sheets for them to know the essential things needed to be strengthened on their print materials.

Meanwhile, respondents from DA as well as respondents from Department of Science and Technology (DOST), Bureau of Fisheries and Aquatic Resources (BFAR) and Department of Health (DOH), said that they place their agency's e-mail and contact numbers on their printed materials.

Since e-mails, contact numbers and addresses of the agencies were placed on their printed materials, their target clients give their feedback by sending messages through e-mails, phone calls and text messages. Sometimes, personal letters were given to them.

Moreover, the respondents from the four agencies said that they let their supervisors assess first their output before they mass-produce it.

On the other hand, respondents from the Bureau of Plant and Industry said that they let their printed materials be evaluated first by their agency heads and co-workers before they mass-produce their printed materials.

Film showings and exhibits. It was observed that all the agencies were conducting film showings and exhibits. According to four respondents, exhibits and film showings were one of the best strategies in presenting technologies and scientific outputs. To improve their activity, the agencies were floating evaluation sheets. There, their audiences assess the activity by answering the evaluation sheets floated by the agencies.

Trainings and seminars. As for trainings and seminars, all the agencies, except for DA, float training needs assessment and questionnaires after the whole activity. There, the agencies clients assess the activity by answering the training needs assessment floated by the agencies. They assess the topic, the speaker's way of delivery, venue and among others.

Website. All the agencies except for BFAR had websites. According to the respondents, they come to know if their website is being visited by looking at the number of views. Furthermore, the respondents said that they encouraged their clients to tell their comments by placing their contact addresses on their websites. Thus, their clients give their feedback by posting their comments on their websites.

"Suggestions or comments are entertained openly for our improvement," said Patrick Pineda, one of the respondents. "Besides the suggestions will serve as assessment or evaluation of our work," he added.

After the agencies had received the evaluation, comments and suggestions of their clients, the employees of the agencies will meet and discussed on the matter. Then the result of their meeting will be applied on their next activity.

This collaborates with Schramm's study (1964) which states that in order to achieve social change information must also flow from the audience. As supported by Flores (1978), the people must participate if not directly at least by feeding back their thoughts, their own feelings, their felt needs and their aspirations. He further stated that if feedbacks come from people, it becomes the basis for decision-making and planning processes. Without a feedback system, Parker (1977) pointed out that development programs could not be sufficiently responsive to local needs and conditions, much less succeed.

Challenges Faced by the Respondents'

<u>in Managing Scientific Information</u>

Some of the respondents claimed that most of the time, their interviewees are busy and sometimes provide insufficient data. Therefore, their schedule was affected since they need to return for another interview.

Some also admitted that they still have the feeling of panic whenever they interview a researcher although they have enough training on interviewing.

Although the respondents faced problems on generating information, they explained that they are still able to furnish the tasks trusted to them by managing their time, by being optimistic, patient and resourceful. They also explained that they conduct research if their interviewees provide them insufficient data to come up with better outputs.

Meanwhile, many of the respondents mentioned that fund was their major problem in developing their material. Accordingly, the printed material does not last long since the material is computer generated.

In addition, many of them said that they faced difficulty in coming up with interesting articles because they were pressured with time. This is because their tasks were not concentrated with single activity only.

Some also faced problems in the editing process. They mentioned that there was no standard editing style since there was no hierarchy of editing. "Everybody does their own editing style," Nuval shared.

Moreover, some of the respondents confessed that they faced difficulty in packaging materials that were appealing since they lack equipments like laptops and camera. "These disadvantages result to the low quality of our output," Crisante Rosario remarked, one of the respondents.

In addition, many respondents claimed that there is no job orientation especially on their functions, thus, they were confused and become inconsistent with their work.

In terms of disseminating the information, the respondents claimed again that fund was their major problem. Many of the respondents mentioned that the materials were not well distributed to the end users due to lack of financial support to fund the printing of the material.

On the other hand, the audience was the major problem of the trainers and organizers. Fund and time were not their major concerns but the participants themselves. Martha Estima, trainer from BFAR, said that most of their participants were not their target clients. "Our target clients send other people as their representatives," she noted.

Nancy Aspura, trainer from BPI, seconded Estima's remark. She said that their target audience were busy and they do not want to be disturbed even if they know that the program is important and intended for them.

Prescila Maramba, a respondent from BFAR, further explained that their audiences are not easy to convene due to distances. She said that only few attend the training since participants are coming from far places especially in rural provinces.

The finding of the study is related with the study of Ramos (2007). It was also found out in her study that the problems encountered by the implementers were lack of fund to finance the program, the lack of interest or time of the participants and poor cooperation of the participants.

For easy access, storage and update of information materials, all the agencies except for BFAR were using database.

The agencies that use database denied that they face problems in storing and retrieving the information that they need. Accordingly, manipulation of the system is not complicated since there are people in charge of the process especially the Information Technology (IT) graduates.

The respondents also explained that they have data management unit that preserve and maintain materials in a stable repository. The management also builds up and classifies information and technology relevant to the sector.

As for those who do not use database, they said that they do not face any problem because they are used with the process although accessing, managing and updating of information materials takes a lot of time.

SUMMARY, CONCLUSIONS AND RECOMMENDATION

Summary

The study was conducted from December 2011 to March 2012.

Twenty-five respondents were chosen purposively in the selected science and technology agencies that are found in Baguio City and La Trinidad, Benguet. The research institutions were Department of Science and Technology regional office (DOST-CAR), Department of Agriculture (DA), Bureau of Plant and Industry- Cordillera Administrative Region (BPI-CAR), Bureau of Fisheries and Aquatic Resources (BFAR) and Department of Health (DOH).

In order to obtain holistic and in-depth information, Focus Group Discussion (FGD) was used as the main instrument. In addition, survey questionnaire was furnished to determine the respondents profile.

Results were interpreted according to the objectives of the study. Results showed that most of the respondents were young adults based on Erik Erikson's (1975) classification. There were more female respondents than male wherein most of them were college graduates. As for their work practice, majority of have lengthy-time experience in promoting technological and scientific information.

The science and technology agencies have various sources of scientific information. It could be from their central office, partner agencies or arm agencies. Likewise, they acquire information from the technicians, experts, common people like farmers and fisher folks, books or any information materials and internet.

Some also said that the information they disseminate were based on their learned experiences from their program implementations and research outputs.

Meanwhile, the selected agencies convey topics that touched the major concerns of their clients like health and agriculture. Aside from that, they also transmit information on environment, innovations and analyses results.

The respondents mentioned that their audiences were comprised of various groups in the community, which embraces the government officials, farmers, students, scientists, science communicators, research institutions, private sectors, businessperson, youth and housewives. Hence, they build strategic methods to cater the needs of their audiences.

The study showed that the agencies were using various communication media in disseminating scientific information. These include communication through radio, print, exhibits, film showing, trainings, seminars, forums and website.

The agencies claimed that they learn their audiences' feedback by floating random sampling surveys, evaluation sheets, and training needs assessment. Likewise, they placed their contact number, e-mail and office addresses, wherein their clients can give their feedback.

Since e-mails, contact numbers and addresses of the agencies are placed in the printed materials and in their web sites, their target clients give their feedback by sending messages through e-mails, phone calls and text. Sometimes, they send letters.

The major and common challenges faced by the respondents in managing scientific information were lack of fund, lack of work force, lack of utility, lack of time, insufficient data by the primary source and unorganized flow of activities.

Meanwhile, many of the respondents pointed out that their work, as communicator is not confined only to one area. For instance, writers do not just write articles but also develop IEC materials like videos and leaflets, thus, they are mandated to do multi-tasking.

Nevertheless, the respondents claimed that they were still able to meet their purpose and objectives despite of the problems that they encountered.

Conclusions

Based on the findings, the following conclusions were derived:

1. The science and technology agencies' main sources of information vary but all of them used primary and secondary sources to support their reports.

2. The scientific information imparted by the science and technology agencies cover wide range. It included agriculture, environment, health and innovations.

3. Print, exhibits and websites were the communication media commonly used by the agencies in disseminating scientific information.

4. Among the agencies, BPI has no extensive communication program since their main concern is to generate technology.

5. Of the several varied challenges faced by the science communicators, their tasks and objectives were still met.

Recommendations

From the conclusions, the following are recommended:

1. BPI may consider establishing information dissemination division so there will be people that would focus on popularizing research results of the agency.

2. Other researchers may want to focus on the possible solutions to the challenges identified by the respondents.

3. Findings of the study may be written in monograph to be shared with community development workers and the science communicators themselves.