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Extension Methods Used in the Implementation of the Swine Production and Dispersal Program in Calintaan, Occidental Mindoro Philippines

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2022/v40i730927

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/85878>

Original Research Article

Received 06 February 2022

Accepted 16 April 2022

Published 22 April 2022

ABSTRACT

This study was conducted to evaluate the extension modalities employed in the Swine Production and Dispersal Program (SPDP) implemented in Calintaan, Occidental Mindoro. It employed the survey research method. It was conducted at Barangay Malpalon and Poypoy, Calintaan, Occidental Mindoro. The respondents were the 30 randomly-selected Swine Production and Dispersal Program (SPDP) beneficiaries for at least one year and had received at least one piglet from the program. A survey and interview were conducted to determine whether the extension program has helped the beneficiaries. Mean, frequency distribution, percentage, and Kendal-Tau b were used in this study. The results shows that the SPDP beneficiaries were middle-aged, high school graduate, female, and member of the SPDP. The seminar is the "most employed" communication method used by the Tamaraw Conservation Program in disseminating information regarding swine production. The said program had contributed to the increase of the SPDP beneficiaries' monthly income at the time of the implementation of the program. The "most frequent" problem encountered in the implementation of the SPDP is the additional expenses incurred by the household with regard to its operation. Expenses had a significant relationship with the benefits and the problems encountered in SPDP. Further, expenses had a significant relationship with the benefits and the problems encountered in SPDP.

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Keywords: Extension; method implementation; production; swine; tamaraw dispersal.

1. INTRODUCTION

The Tamaraw Conservation Program is a national government project aimed at saving the Tamaraw from extinction. One of the major components of the project is the Community Assistance Program (CAP), which aims to organize community partners in Tamaraw conservation; assist communities in uplifting their socio-economic condition through the provision of a community-identified, but viable, livelihood assistance program and therefore minimizing y they are over dependence on natural resources, and to provide appropriate seminars and training to enhance local capacities on biodiversity conservation. This is anchored in the TCP's thrust to perpetuate the Tamaraw and another associated biodiversity by protecting and conserving its natural habitat and at the same time providing developmental assistance to strengthen the economic status of communities [1].

Understanding the idea that genuine community participation can only be attained if people, especially those who endure the burden of conservation be recompensed or rewarded, the Swine Production and Dispersal Program (SPDP) was initiated in the communities near Mount Iglit-Baco National Park (MIBNP). It is a community assistance program that started with ten sows (five for each barangay). The beneficiaries, who were chosen by raffle, as per the contract arranged, would be responsible for the maintenance of the swine at their own expense until it gives birth, and they shall return two piglets to the Barangay Tamaraw Conservation Council, which acts as the de facto manager of the Swine Production and Dispersal Program. The returned piglets will then be raffled among the members of the organization and will be turned over to the chosen beneficiaries. The said project was the initial result of the Participatory Rural Appraisal (PRA) done in the Barangays of Tanyag, Poypoy, and Malpalon, Calintaan, Occidental Mindoro in 1995 by the University of the Philippines Los Baños. The last two were chosen as the potential recipients as it has several many residents dwelling on the fringe of the park [1].

Evaluation is tied to the future effectiveness of programs and includes avenues for feedback and further improvement during the implementation of the program [2]. Program or

project evaluations typically aim to assess the effectiveness of the program, the extent of the implementation of the extension program, if the program attained its goals, to identify the outcomes and the results of the program, and to identify the strengths and weaknesses of the program [2].

There has been no evaluation of the changes that had occurred in the lives of the beneficiaries in terms of their income and other perceived benefits since the SPDP began in 1996. One of the reasons for this is that the CAP's first objective is to preserve the Tamaraws from extinction. It is believed that one of the underlying reasons behind the Tamaraw's extinction is the continuous hunting of Tamaraws for livelihood. Swine Production and Dispersal Program serves as an alternative for livelihood and it serves as a distraction for the Tamaraw hunting in the area.

1.1 Objectives of the Study

The following are the objectives of this study:

1. To determine the profile of the beneficiaries of the Swine Production and Dispersal Program of the Tamaraw Conservation Program in Poypoy and Malpalon, Calintaan, Occidental Mindoro, in terms of:
 - a. Age;
 - b. Sex;
 - c. Educational Attainment; and
 - d. The number of years involved in the Swine Production and Dispersal Program of the Tamaraw Conservation Program.
2. To determine the extension methods used in the implementation of the Swine Production and Dispersal Program.
3. To identify the effects of the Swine Production and Dispersal Program on the beneficiaries, in terms of:
 - a. The number of piglets before and after the involvement in the extension program;
 - b. Monthly income before and after the involvement in the program; and

- c. Perceived benefits of the Swine Production and Dispersal Program in their livelihood.
- 4. To identify the problems encountered in the Swine Production and Dispersal Program.
- 5. To determine the relationship between the beneficiaries' profile and problems encountered in the Swine Production and Dispersal Program.

1.2 Hypothesis

There is no significant relationship between the beneficiaries' profile and problems encountered in the Swine Production and Dispersal Program.

1.3 Theoretical Framework

The Theory of Evaluation which is anchored to Utilization-Focused Evaluation [3], which engages the extension workers in conceptualization through findings, states that program developers use theories and methodologies to determine the performance of the program in terms of its planning and implementation and to find efficient ways to assess the program's result. Its fundamental is the Theory of Action, the explanation of how to produce desired results and aims to know whether the program achieves its desired outcomes. Application of the said theory will strengthen program planning, implementation, and outcome [5].

1.4 Conceptual Framework

The conceptual framework as shown in Fig. 1 served as a guide for the researchers in the conduct of this study. The first box contains the beneficiaries' socio-economic profile which is the independent variable of the study. The second box contains the dependent variable, which are the benefits and the problems encountered in the Swine Production and Dispersal Program. An arrow connects the independent variable to the dependent variable, showing a connection between the two.

2. METHODOLOGY

This study used a survey method of research. The study was conducted at Barangay Malpalon and Poypoy, Calintaan, Occidental Mindoro, where the beneficiaries of the extension program Swine Production and Dispersal Program of the Tamaraw Conservation Program adjacent to Mt. Iglit-BacoNatio Natural Park on August - December 2017 and up interviews on March 2018.

The 30 respondents were the beneficiaries of the Swine Production and Dispersal Program for at least one year and had received at least one piglet from the extension program. Eighteen respondents were from Malpalon and 12 respondents were from Poypoy, Calintaan, Occidental Mindoro. The respondents had given their permission to be part of the study. Permission to conduct the study was asked from the Tamaraw Conservation Program on July 17, 2017.

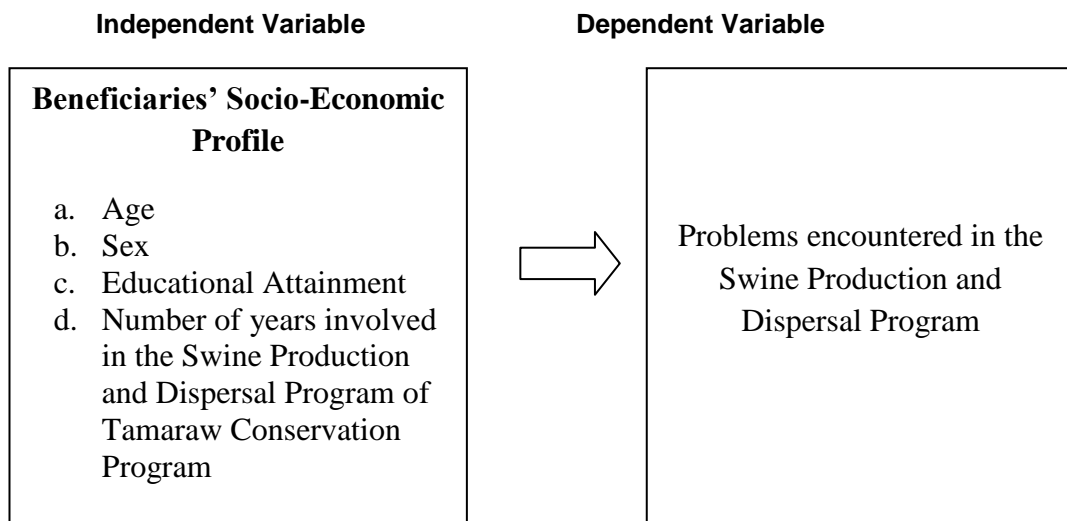


Fig.1. Research paradigm

Before – After Survey was used to determine whether the extension program has a direct effect on the beneficiaries. Some of the data were derived from the answers of the beneficiaries during the Tamaraw Conservation Program's evaluation in 2014.

The data was organized, classified, and interpreted statistically. The descriptive statistics used were mean, frequency distribution, and percentage. Kendal-Tau b was used to determine the correlation between the beneficiaries' profile and the benefits of the Swine Production and Dispersal program and the problems they have encountered in the said extension program.

3. RESULTS AND DISCUSSION

3.1 Socio-economic Profile of the Swine Production and Dispersal Program Beneficiaries

The respondents' age ranges from 20 years old to 64 years old. The respondents of this study comprise mostly females (93%). 56% of the respondents are secondary graduates while 40% of the respondents finished elementary education, and only 3% of the respondents are college graduates. The table also shows the mean of the year of membership of the respondents (5.60 years), with the range of 1 year to 27 years in the extension program. The findings are similar to the study of Tomas [5], which states that females are more engaged in swine production and most of them are high school graduates.

3.2 Extension Methods used in the implementation of the Swine Production and Dispersal Program

Extension teaching methods are the tools & techniques used to create situations in which communication can take place between the rural people & the extension professionals. These are the methods of imparting new knowledge & skills to the rural people by drawing their attention to such technologies, thereby arousing their interest and helping them to have a successful experience of the new practice. A proper understanding of these methods and their selection for a particular type of work is necessary.

According to FAO [6], the extension methods according to use are (a) the individual method, in which the agent deals with farmers on a one-to-one basis; and (b) the group method, in which the agent brings the farmers together in one form or another to undertake his extension work; and (c) the mass method.

The SPDP beneficiaries said that swine production technologies are relayed through home visits (100%), meetings (100%), seminars (50%), and the use of brochures (92%).

Furthermore, the training and visit system employed by the SPDP is one of the most widely utilized of all extension techniques. It consists of training sessions for producers to introduce specific technologies and techniques which are then followed by farm visits to observe their implementation and outcome. The training session can take many forms, including producers' meetings, conferences, workshops, and method demonstrations. This has been one of the important models of extension methodologies used. The training and visit system was widely accepted by survey respondents as an appropriate extension technique for cooperatives, private producers, and subsistence producers [7].

Seminars were being conducted by the Tamaraw Conservation Program regularly. The resource persons were the Department of Agriculture – Bureau of Animal Industry. The topics discussed are proper care for piglets and the benefits of hog raising.

Since raising awareness about the Tamaraw is one of the main objectives of the Tamaraw Conservation Program, they also disseminate information through brochures during meetings.

3.3 Effect of the Swine Production and Dispersal Program

The effects of the Swine Production and Dispersal Program were measured in terms of the number of piglets before and after the involvement of the beneficiaries in the Swine Production and Dispersal Program, monthly income before and after the involvement of the beneficiaries in the Swine Production and Dispersal Program, and the perceived benefits of the Swine Production and Dispersal Program in the livelihood of the beneficiaries.

3.4 Number of Piglets before engaging in Swine Production and Dispersal Program

Table 3 shows that eight beneficiaries (26.67%) were not engaged in hog raising before the extension program, while 73.4% of the beneficiaries have already engaged in swine production before being involved in the Swine Production and Dispersal Program.

Currently, 53.33% of the beneficiaries are raising one hog after the SPDP. As per the interview, the respondents' profit from Swine Production and Dispersal Program has a mean of Php 2,420.00. The lowest profit is Php 350.00 and the highest profit is Php 18,500.00.

3.5 Monthly Income before Swine Production Program and Current Monthly Income

Table 4 shows the mean monthly income of the respondents before the Swine Production and Dispersal Program (Php 2,036.00), with the range of Php 380.00 to Php 5,000.00. Currently, the respondents' monthly income has a mean of Php 3,075.00 with the range of Php 500.00 to Php 15,000.00. The results show a Php 1,039 increase in the monthly income of the beneficiaries.

3.6 Perceived benefits of the Swine Production and Dispersal Program

Table 5 shows the benefits of the Swine Production and Dispersal program. As stated in the table, the extension program serves as a pastime for the beneficiaries (mean=4.57) and helps increase the beneficiaries' income (mean=4.63).

Additional income from pig raising can be used to invest in farm assets, and pay for school fees and medical treatments. Pig raising also provides

income for women, strengthening their role in families and the community. Pig raising can also be considered as a store of wealth and a safety net in times of financial crisis (Dietze, 2010).

Overall, the Swine Production and Dispersal Program had produced high benefits for the beneficiaries (mean=4.06).

3.7 Problems encountered in Swine Production and Dispersal Program

As shown in Table 6, the beneficiaries of the Swine Production and Dispersal Program encountered problems with the extension program. The beneficiaries identified the additional expenses that the swine production had caused as the most encountered among the identified problems in the Swine Production and Dispersal Program, having a mean of 3.76 having interpreted as "very often." The second problem encountered was that the beneficiaries' swine were prone to diseases and infections, having a mean of 2.60, being interpreted as "often". Introduction to Swine Production: Student Reference [8], showed that swine are generally strong animals, but they are susceptible to a variety of diseases, but producers can prevent or reduce the spread of diseases through a variety of methods.

Other problems that were identified through the SPDP narrative report evaluation were seldom, if not never, encountered by the respondents. Overall, the problems encountered by the respondents were minimal and had a mean of 2.35.

3.8 Relationship between Respondents' Profile and Benefits and Problems encountered in Swine Production and Dispersal Program

As shown in Table 7, the expense used in swine production has a strong significant relationship

Table 1. Socio-economic profile of the SPDP beneficiaries

Variable	Grouping	Frequency	Percentage
Age	Mean = 39.53 Range = 20-64		
Sex	Female	28	93%
	Male	2	7%
Educational Attainment	Secondary	17	56%
	Elementary	12	40%
	College	1	3%
Years of Membership	Mean = 5.60 Range = 1-27		

Table 2. Extension methods used in SPDP

Extension Methods*	Frequency (n=30)	Percentage (%)
<i>Individual</i>		
Home visits	30	100.00
<i>Group</i>		
Seminars/Trainings	15	50.00
Meetings	30	100.00
<i>Mass</i>		
Brochures	27	50.00

*multiple responses

Table 3. The number of hogs being raised by the beneficiaries before the SPDP

Number of swine/piglets before SPDP	Frequency (n=30)	Percentage (%)	Current number of swine	Frequency (n=30)	Percentage (%)
0	8	26.67	1	16	53.33
1	11	36.67	2	7	23.33
2	5	16.67	3	2	6.67
3	3	10.00	5	1	3.33
4	2	6.70	7	1	3.33
5	1	3.30	10	3	10.00
Total	30	100.00	Total	30	100.00

Table 4. Monthly income from the SPDP respondents

Monthly Income of the Respondents	Mean (in peso)	Range (in peso)
Before	2036.00	380.00 - 5000.00
Current	3075.00	500.00 – 15000.00

Table 5. Perceived benefits of the SPDP

Perceived Benefits	Mean	Interpretation
The profit from swine production was used in house construction.	3.80	High
The profit from swine production was used for educational expenses.	4.16	High
The profit from swine production was used for daily expenses.	4.30	High
The profit from swine production was used in paying bills.	4.13	High
The swine were used for food consumption.	4.37	High
Swine production served as a pastime for the beneficiaries.	4.57	Very High
The swine production helped in decreasing of hunting of Tamaraw.	4.17	High
The swine production contributed to the increase in the beneficiaries' income.	4.63	Very High
The swine production helped in starting a business.	3.67	High
The profit from swine production was used for health expenses.	3.60	High
The SPDP increased the knowledge of the beneficiaries in swine production.	4.40	High
The profit from swine production was used for expenses on the farm.	3.70	High
The SPDP helped to increase the number of swine being raised by the beneficiaries.	3.77	High
The profit from swine production was used in buying furniture and appliances.	3.70	High
Grand mean	4.06	High
<i>Legend: 4.50-5.00-Very High;3.50-4.49-High;2.50-3.49-Moderate;1.50-2.49-Low;1.00-1.49-Very Low</i>		

Table 6. Problems encountered in SPDP

Problems Encountered	Mean	Interpretation
The swine production caused additional expenses for the family (feeds, vitamins, medicine, etc.)	3.76	Highly serious
The swine was not able to conceive.	2.46	Less serious
The swine was prone to diseases and infections.	2.60	Moderately serious
The swine died before giving birth.	1.70	Less serious
The swine died and was not able to be sold.	1.96	Less serious
The beneficiary didn't get any profit.	2.36	Less serious
The beneficiary wasn't able to return piglets to the cooperative.	2.06	Less serious
Hog-raising became a nuisance to the beneficiaries' families.	2.20	Less serious
The odor of the pens affected the family's health	2.10	Less serious
Grand Mean	2.35	Less serious

Legend: 4.50-5.00-Always; 3.50-4.49-Very Often; 2.50-3.49-Often; 1.50-2.49-Sometimes; 1.00-1.49-Never

Table 7. Correlation between respondents' profile and problems encountered in SPDP

Independent Variables	Dependent Variable	Correlation Coefficient	p-value (Sig)	Interpretation
Age	Benefits	.028	.829	Not Significant
	Problems Encountered	.066	.616	Not Significant
Sex	Benefits	-.112	.478	Not Significant
	Problems Encountered	-.072	.646	Not Significant
Educational Attainment	Benefits	.225	.146	Not Significant
	Problems Encountered	-.125	.419	Not Significant
Years of Membership	Benefits	.061	.659	Not Significant
	Problems Encountered	.130	.349	Not Significant
Number of Piglets received from the extension program	Benefits	.172	.243	Not Significant
	Problems Encountered	.000	1.00	Not Significant
Expenses	Benefits	.288	.033	Significant
	Problems Encountered	-.220	.104	Not Significant
Communication Methods	Benefits	.180	.252	Not Significant
	Problems Encountered	.016	.917	Not Significant

Significance is < .05 level

with the benefits that the respondents get from the Swine Production and Dispersal Program ($p=.033$). Kokemuller (2018) revealed that higher costs mean lower profit, assuming other factors remain constant while lower costs mean higher profits.

4. CONCLUSIONS

Based on the findings of the study, the following conclusions were:

1. SPDP beneficiaries were middle-aged, high school graduates, females are main members of the SPDP.
2. The seminar is the "most employed" communication method used by the Tamaraw Conservation Program in disseminating information regarding swine production.

3. The program had contributed to the increase of the SPDP beneficiaries' monthly income at the time of the implementation of the program.
4. major problem encountered in the implementation of the SPDP is the additional expenses incurred by the household with regard to its operation.
5. Expenses had a significant relationship with the benefits and the problems encountered in SPDP.

5. RECOMMENDATIONS

1. Utilization of other communication methods like pamphlets in disseminating information regarding swine production.
2. Conduct additional activities and topics on cost-efficient swine production processes and procedures.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
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