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RESEARCH-BASED EXTENSION IMPLEMENTATION AMONG SUCs IN BICOL REGION

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ABSTRACT: *The study evaluated the implementation of research-based extension programs among mainland campuses of State Universities and Colleges in the Bicol Region. Specifically, it determined the profile of extension programs implemented, the extent of implementation, and the extent of involvement of stakeholders in implementing research-based extension programs. Descriptive and evaluative research methods were employed in the study using purposive random sampling. Respondents were the 105 stakeholders of research-based extension programs from 7 SUCs mainland campuses in the Bicol Region. Data were interpreted using frequency count, percentage, mid-rank, and weighted mean. Data revealed that the implementation of research-based extension programs among SUCs varies. SUCs, except SUC G, "highly implement" research-based extension programs aligned with the needs of the community and are anchored to the curricular offerings of the institution and stakeholders' involvement in the implemented research-based extension programs.*

Keywords: *Evaluation, higher education, involvement, profile, stakeholders*

INTRODUCTION

Social institutions, Higher Education Institutions (HEIs) serve society by employing their research and instruction expertise to deliver academic and social/extension activities to their catchment communities. As a result, it is highlighted that the concerns of academia should not be limited to the four corners but should be extended to the community. This extension endeavor is not only for certification but also to support long-term community growth. Extension programs must provide sufficient learning opportunities to assist clients in meeting their needs. Those learning opportunities must be discovered and prepared based on the client's needs and research-based knowledge to avoid sharing material regarded as harmful rather than beneficial (Israel et al., 2021). School community relations constitute a vital functional area in the educational system. As mandated, higher education institutions should implement extension activities to bridge the gap between the academy and the public (RA 7722), aiming to tap the faculty's expertise and knowledge and help the community (Llenares et al., 2018). Commission on Higher Education (CHED) issued Memorandum Order 52 s. 2016 entails that higher education institutions should make space for the discovery of practical evidence and research-based solutions to real-world social, economic, and environmental concerns faced by partner citizens and communities. To attain this goal in principle and practice, higher education institutions must become progressive social change agents, already pillars of the current financial system. This necessitates reconsidering higher education's aim and methodology, from courses to research, as well as how higher education institutions interact with society at all levels, from the local to global scene (Escrigas, 2016).

In the Philippines, State Universities and Colleges (SUCs) are urged to increase university community participation through extension initiatives. A SUC extension activity is a non-formal educational program function that employs

research-based information to assist people and apply it to various topics of interest. It also fosters curiosity as well as critical and independent thinking (Labrador et al., 2014). Furthermore, research-based knowledge pushes forward the "boundaries of knowledge and comprehension" identified by Albay et al. (2020). Each SUC shall conduct research and seek knowledge that can be implemented by providing extension services (Medina, 2019). Integrating knowledge and skills will help SUCs maintain efficient and effective research-based extension activities.

One of the State College institutions in the Bicol region ensures that implementing a research-based extension program shall enhance the target clientele's livelihood and entrepreneurial capability for improved quality of life. Through its flagship program, "Responsive Entrepreneurial Skills", the Extension Services Office portrays its mission and vision to connect with those less fortunate. By providing skills training, technology transfer, advocacy programs, and information drive to help them live better and become development partners (Salazar, 2020).

The implementation of extension programs and projects must be evaluated to assess their quality (Pentang, 2021). This study may uphold the implementation of research-based extension programs that are not demand-driven and accreditation-driven, anchored on extensional research outputs, possible production, commercialization, and potential for intellectual property rights registration. It will also encompass the community needs addressing all aspects of development; economic, social, cultural, political, health, and environmental.

This study aims to determine the extent of implementation and its stakeholders' involvement in implementing the research-based extension program among SUCs in the Bicol region, FY 2018-2020. Specifically, it sought to: 1) identify the profile of research-based extension programs implemented along (a) Economic/Livelihood Development, (b) Health and Nutrition, (c) Environmental-Ecological Management, (d) Good Governance, and (e) Education; 2) determine the extent of implementation of the research-based extension program; and 3) assess the stakeholder's extent of involvement in implementing research-based extension programs.

MATERIALS AND METHODS

Research Design

The study employed a descriptive and evaluative method. Descriptive method was used in the description, recording, analysis, and interpretation of the implementation of research-based extension programs, including profile of SUCs, identifying its practices, and determining the issues and concerns encountered in the implementation. Evaluative methods were used to analyze the extent of implementation and the extent of stakeholders' involvement in implementing research-based extension programs. The study also conducted a thematic literature review for the researcher to gain insights into previous research focusing on research-based extension programs.

Research Locale and Respondents

The study was undertaken in the Bicol Region involving seven SUCs in the mainland campuses who are research-based extension program implementers with ongoing and completed extension programs and projects for the last three years from 2018 to 2020, namely: Bicol State College of Applied Sciences and Technology, Bicol University, Central Bicol State University of Agriculture, Camarines Norte State College, Camarines Sur Polytechnic Colleges, Partido State University, and Sorsogon State University.

The study employed purposive random sampling. There are 105 respondents in the survey. It comprised SUCs implementing research-based extension programs, including 8 RDE/REPED Directors, 17 extension coordinators, six extension leaders, 15 Faculty and 21 Student Extensionists, 11 Local Government Unit Partners, 10 Non-Government Organizations Partner, and 17 Community beneficiaries. Activities conducted in the study involving human respondents adhered to the ethical principles of Central Bicol State University of Agriculture's academic research council. Informed consent is provided in each

questionnaire. The respondents' answers are guaranteed to be used for scholarly purposes only, and their identification remains private and anonymous.

Instrument

Survey instrument used in this study was a researcher-made survey questionnaire based on the Levelling Instrument for SUCs as provided in DBM-CHED Joint Circular NO.1 s. 2016 and from other extension researches/journals. The survey questionnaire was composed of four parts; the first part of the questionnaire entails the respondent's information, the second part is about the profile of the SUCs research-based extension programs that are implemented from January 2018–December 2020 along a) Economic/ Livelihood Development, b) Health and Nutrition, c) Environmental/Ecological Management, d) Good Governance, and e) Education, the third part is asking to rate the extent of implementation of the research-based extension program by SUCs, the fourth part of the questionnaire is on the extent of involvement of stakeholders in the implementation of research-based extension programs.

The research instrument was crafted to answer the problems stated in this study. Two sets of research instruments are prepared: one Filipino version for the community beneficiaries and an English version for Extension Implementers of the different SUCs and LGUs involved in implementing research-based extension programs. The instrument used in the study was reviewed and approved by the evaluation committee. It was also content and validated by the same committee.

Data Gathering Procedure

Letter of request was prepared and communicated with the head of agency per SUCs to seek approval to conduct the study and to set a suitable time for data gathering. The SUC Presidents secured an endorsement letter to the extension directors to facilitate the respondents' distribution of the survey questionnaire. With the present pandemic, data gathering limits direct contact with the respondents to avoid COVID-19. The survey questionnaires were distributed online using available communication through Google Forms. Hard copies of the questionnaire were sent through LBC courier addressed to the extension unit of the colleges and retrieved personally by the researcher through messenger and electronic mail. All targeted respondents were informed about the study's purpose and importance and that honest answers would serve the institution well. SUCs extension implementers, stakeholders, collaborative agencies, and community beneficiaries were personally requested through the given contact numbers, email addresses, and Facebook messengers to answer the questionnaires.

Data Analysis

Weighted Mean was used to determine the extent of implementation of research-based extension programs among SUCs and the involvement of stakeholders in the research-based extension programs implementation among SUCs in the Bicol region. The assessment was made using an appropriate scale for the parameters being measured. Two sets of rating scales were used in the analyses, one for the extent of implementation and another for the extent of involvement of stakeholders.

RESULTS AND DISCUSSION

Profile of research-based extension programs implemented among SUCs

Respondents were asked about the number of research-based extension programs in their colleges or universities for three years (2018-2020) along with (a) Economic/Livelihood Development, (b) Health and Nutrition, (c) Environmental/Ecological Management, (d) Good Governance and, (e) Education.

Economic/Livelihood Development. The Economic/Livelihood Development extension programs are commonly implemented to provide the grassroots community with an opportunity for additional income. Providing highly specialized experts to conduct training and livelihood operations in various technical and disciplinal

areas by emphasizing new knowledge and skills covering the research-extension interfacing objectives that will sustain the community livelihood programs to its niche underlining the people-centered development approach to nation-building. Shown in Table 1 is the profile of research-based extension programs implemented along economic or livelihood development.

SUC A has two ongoing extension programs, one completed extension program, three community beneficiaries, 256 beneficiaries, 33 faculty-extension workers, and six students involved, with six viable demonstration projects and 2 adopters engaged in a profitable enterprise.

SUC B has 24 ongoing extension programs, 12 completed extension programs, 36 community beneficiaries, 26 beneficiaries, 147 faculty members, and 110 students involved, with 13 viable demonstration projects and 60 adopters engaged in a profitable enterprise. SUC C has 20 ongoing extension programs, ten completed extension programs, 29 community beneficiaries, 19 807 beneficiaries, 99 faculty, and 55 students involved, with 54 viable demonstration projects and 84 adopters engaged in a profitable enterprise. SUC D has no ongoing extension programs; however, for 2018-2020, it has four completed extension programs, four community beneficiaries, 237 beneficiaries, 12 faculty members, and two students involved, with seven viable demonstration projects and 30 adopters engaged in a profitable enterprise.

Meanwhile, SUC E has 15 ongoing extension programs, four completed extension programs, 15 community beneficiaries, 55 beneficiaries, 47 faculty involved, with five viable demonstration projects, and 26 adopters engaged in a profitable enterprise. SUC F has two ongoing extension programs, two completed extension programs, four community beneficiaries, 464 beneficiaries, 33 faculty involved, no viable demonstration projects, and adopters engaged in a profitable enterprise. SUC G does not have an ongoing extension program; however, it has one completed extension program and one community beneficiary.

Among the SUCs, SUC C has the highest number of beneficiaries with 19,807 total number, 99 faculty involved, 54 viable demonstration projects, and 84 adopters engaged in the profitable enterprise within the 2018-2020 research-based extension program implementation

This result implies that SUCs in the Bicol region commonly implement research-based extension programs and economic livelihood development. However, despite the high number of beneficiaries, only 0.42% (84 out of 19,807) are adopters engaged in profitable enterprises, and 0.27% (54 out of 19,807) are viable demonstration projects. These results also imply that SUCs research-based extension programs implemented did not get a good impression in utilizing the skills or knowledge adopted in the community.

Health and Nutrition. Designed to improve the quality of life for the communities by providing them access to health care and nutrition through

Table 1. Profile of Research-based Extension Programs Implemented among SUCs along Economic/ Livelihood Development, FY 2018-2020

Indicators	SUC							Total
	A	B	C	D	E	F	G	
Ongoing extension programs	2	24	20	0	15	2	0	61
Completed extension programs	1	12	10	4	4	2	1	36
Community beneficiaries	3	36	29	4	15	4	1	97
Beneficiaries	256	26	19 807	237	55	464	0	20 908
Faculty involvement	33	147	99	12	47	33	0	371
Student involvement	6	110	55	2	0	0	0	173
Viable demonstration projects	6	13	54	7	5	0	0	85
Adopters engage in profitable enterprise	2	60	84	30	26	0	0	202

industrial/hazardous waste management and proper hygiene provided by the research-based extension programs of the SUC implementers. However, Bidad & Campiseño (2010) stated that the community must believe that it would redound to better health to maintain cleanliness. Planting vegetables or backyard gardening is encouraged to increase food availability at the household level. Furthermore, it is emphasized that preparing nutritious foods and applying the basics for maintaining good health can dramatically reduce the risk for many common health problems.

The research-based extension programs implemented in this area are presented in Table 2. SUC A has no ongoing research-based extension program with health and nutrition; however, it has three completed extension programs, three community beneficiaries, 24 faculty, and three students involved in the program, with two viable demonstration projects and 15 adopters engaging in a profitable enterprise.

SUC B has three ongoing research-based extension programs with health and nutrition, three completed extension programs, six community beneficiaries, 4 beneficiaries, 28 faculties, and 29 students involved, with three viable demonstration projects. SUC C has one ongoing research-based extension program with health and nutrition, no completed program; however, it currently has one community beneficiary and 3 663 beneficiaries with 73 faculties and ten students involved. Besides, it has ten viable demonstration projects. SUC D has no ongoing research-based extension programs with health and nutrition; however, for 2018-2020, it has three completed extension programs, with three community beneficiaries, 95 beneficiaries, 11 faculties, and two students involved, with seven viable demonstration projects and 30 adopters engage in a profitable enterprise.

Meanwhile, SUC E has two ongoing research-based extension programs, one completed program, three community beneficiaries, three beneficiaries, and eight faculty members. SUC F and G have no research-based extension program in health and nutrition.

Along with health and nutrition, SUC A has the highest number of three (3) research-based extensions implemented in 2018; however, SUC A has not implemented any in the following years. Meanwhile, SUC B has implemented six research-based extension programs in health nutrition and SUC C, despite only one (1) research-based extension program being implemented but with the highest number of beneficiaries involved. Moreover, SUC D had the highest number of adopters in 2018-2020 among the SUCs.

Environmental/Ecological Management. The research-based extension programs under environmental/ecological management are designed to help improve the quality of life of marginalized people by providing them awareness and access to the impact on the Earth's system's physical and biological components. Mendoza et al. (2017) stressed that government research centers and SUCs' Research and Development (R&D) infrastructures are built, and the technologies generated support green revolution technologies.

Table 2. Profile of Research-based Extension Programs Implemented among SUCs along Health and Nutrition, FY 2018-2020

Indicators	SUC							Total
	A	B	C	D	E	F	G	
Ongoing extension programs	0	3	1	0	2	0	0	6
Completed extension programs	3	3	0	3	1	0	0	10
Community beneficiaries	3	6	1	3	3	0	0	16
Beneficiaries	0	4	3 663	95	3	0	0	3 765
Faculty involvement	24	28	73	11	8	0	0	144
Student involvement	3	29	10	2	0	0	0	44
Viable demonstration projects	2	3	0	7	0	0	0	12
Adopters engage in profitable enterprise	15	0	0	30	0	0	0	45

It is vital for research and extension institutions to disseminate environmental/ecological knowledge programs to their adopted community to have plus production in their respective lands. Shown in Table 3 is the profile of research-based extension programs implemented among SUCs along with Environmental/Ecological Management.

The SUC A has five ongoing research-based extension programs and three completed extension programs with 13 community beneficiaries, 1 002 beneficiaries, 90 faculty, 93 students involved, and one adopter engaged in a profitable enterprise. SUC B has five ongoing research-based extension programs and nine completed extension programs with 14 community beneficiaries, 11 beneficiaries, and 66 faculty involved. SUC C has six ongoing research-based extension programs with six community beneficiaries, 3 407 beneficiaries, 68 faculty, and nine students. Then SUC D has five completed research-based extension programs with five community beneficiaries, 209 beneficiaries, 43 faculty, and 20 students involved. It also has seven viable demonstration projects, and 30 adopters engage in profitable enterprises. SUC E has 11 ongoing research-based extension programs and four completed extension programs with 15 community beneficiaries, 27 beneficiaries, 66 faculty involved, and one viable demonstration project. Meanwhile, SUC F has no research-based extension program completed; however, it has four completed extension programs with four community beneficiaries, 1 634 beneficiaries, 52 faculty, and 414 students involved. SUC G has one completed extension program and one community beneficiary.

Data in Table 3 on Environmental/ Ecological Management related extension programs indicates that SUC E has the highest number of implemented research-based extension programs in 2018-2020. Meanwhile, SUC C has the highest number of beneficiaries, and SUC A has the highest number of faculty members involved in extension. It can also be noted that SUC D has the highest number of viable demonstration projects, and adopters engaged in a profitable enterprise.

Good Governance. It provides legislators and community leaders with the fundamental knowledge, skills, and good attitudes needed to push their commune onward. These community projects will make them understand that the government must give substantial financial funds in mobilizing their resources from their land to market as a significant niche of the government support to the livelihood projects offered by SUCs. As such, communities are being given a big chance to be heard to examine the governance system, policies, programs, and projects. Presented in Table 4 is the profile of research-based extension programs implemented among SUCs along with Good Governance within 2018-2020.

SUC A, D, F, and G have no research-based extension programs implemented or good governance within the said period. Meanwhile,

Table 3. Profile of Research-based Extension Programs Implemented among SUCs along Environmental/ Ecological Management, FY 2018-2020

Indicators	SUC							Total
	A	B	C	D	E	F	G	
Ongoing extension programs	5	5	6	0	11	0	0	27
Completed extension programs	8	9	0	5	4	4	1	31
Community beneficiaries	13	14	6	5	15	4	1	58
Beneficiaries	1 002	11	3 407	209	27	1 634	0	6 290
Faculty involvement	90	66	68	43	66	52	0	385
Student involvement	93	0	9	20	0	414	0	536
Viable demonstration projects	0	0	0	7	1	0	0	8
Adopters engage in profitable enterprise	1	0	0	30	0	0	0	31

SUC B has two ongoing research-based extension programs along with good governance. Four completed extension programs with six community beneficiaries, eight beneficiaries, 61 students involved, and four viable demonstration projects. SUC C has two ongoing research-based extension programs with two community beneficiaries, 1,251 beneficiaries, and 16 faculty involved. SUC D has six completed extension programs with six community beneficiaries, 77 beneficiaries, 22 faculty involved, and two viable demonstration projects. SUC E has two ongoing research-based extension programs, two completed research-based extension programs, two community beneficiaries, nine beneficiaries, and 16 faculty involved.

In good governance, SUC B has the highest number of research-based extension programs implemented in 2018-2020. SUC B and D has the highest community beneficiaries, and SUC C has the highest number of beneficiaries.

beneficiaries, and six faculty involved. SUC B has ten ongoing research-based extension programs along with education. Ten completed research-based extension programs with 20 community beneficiaries, 12 beneficiaries, 61 faculty, and 79 students involved, and also has ten viable demonstration projects and 60 adopters engaged in a profitable enterprise. SUC C has 19 ongoing research-based extension programs along education. It has 19 community beneficiaries, 24,407 beneficiaries, 142 faculty, and 111 students involved. Meanwhile, SUC D has no ongoing research-based extension programs along education. However, it has four completed research-based extension programs with four community beneficiaries, 702 beneficiaries, 22 faculty, seven students involved, and 30 viable demonstration projects. SUC E has eight ongoing research-based extension programs along education. Seven completed research-based extension programs with 15 community

Table 4. Profile of Research-based Extension Programs Implemented among SUCs along Good Governance, FY 2018-2020

Indicators	SUC							Total
	A	B	C	D	E	F	G	
Ongoing extension programs	0	2	2	0	2	0	0	6
Completed extension programs	0	4	0	6	2	0	0	12
Community beneficiaries	0	6	2	6	2	0	0	16
Beneficiaries	0	8	1 251	77	9	0	0	1 345
Faculty involvement	0	0	16	22	16	0	0	54
Student involvement	0	61	0	0	0	0	0	61
Viable demonstration projects	0	4	0	2	0	0	0	6

Education. A research-based extension program is offered to students of all age levels, with knowledge and skills development dedicated to bettering their communities. One of the trilogy functions of SUCs in alleviating the lives of Filipinos is to educate its people and become a human capital in nation-building. Presented in Table 5 are the implemented research-based extension programs along with Education among SUCs in 2018-2020.

SUC A has three ongoing research-based extension programs along education, six completed research-based extension programs with nine community beneficiaries, 1 406 beneficiaries, 26 beneficiaries, and 74 faculty involved.

SUC F has one ongoing research-based extension program along education with 11 community beneficiaries, 66 beneficiaries, and three faculty involved. SUC G has nine ongoing research-based extension programs along education with 11 completed research-based extension programs with 30 community beneficiaries, 794 beneficiaries, 99 faculty, seven students involved, and 30 viable demonstration projects.

The research-based extension programs' profile varies along with the parameters. It can

also be noted that along Education, SUC B has the highest number of implemented research-based extension programs.

Generally, SUC C has the highest number of beneficiaries and faculty involved in extension. SUC C has implemented research-based extension program may have varied because of the differences in their goals and objectives. Other factors may also been contribute to the results, just as the geographical location of the SUC and its adopted community.

Table 5. Profile of Research-based Extension Programs Implemented among SUCs along Education, FY 2018-2020

Indicators	SUC							Total
	A	B	C	D	E	F	G	
Ongoing extension programs	3	10	19	0	8	1	9	50
Completed extension programs	6	10	0	4	7	0	11	38
Community beneficiaries	9	20	19	4	15	11	30	108
Beneficiaries	1 406	12	24 407	702	26	66	794	27 413
Faculty involvement	6	61	142	22	74	3	99	407
Student involvement	0	79	111	7	0	0	7	204
Viable demonstration projects	0	10	0	30	0	0	30	70
Adopters engage in profitable enterprise	0	60	0	0	0	0	0	60

extension programs with the highest number of beneficiaries along with different research-based extension programs. Meanwhile, SUC B has implemented the highest number of research-based extension programs along with Health and Nutrition (50), Good Governance (4), and Education (20).

SUCs in the Philippines are mandated to perform three core functions: teaching, research, and extension under COE and COD, CHED No.1 s. 2016. Extension is dynamic as it evolves through time. The number of research-based extension programs along different parameters may have been attributed to the varied goals and objectives of each SUCs. Furthermore, it may also be attributed to the availability of SUC resources like facilities and funding.

Findings on the profile of research-based extension programs also imply that SUCs in the Bicol region implement diverse research-based extension programs that may have been attributed to their institution's goals and objectives, resources, and adopted community needs.

Results are supported by the study of Mojares (2015), in which the construct of extension is open for interpretation, and programs implemented depend on the goals and objectives of each institution. Thus, the research-based

Extent of Implementation of the Research-Based Extension Program among SUCs

There are various degrees of extension services available to the community. Apart from the students enrolled in the programs, it enable the school and its staff members to share their particular skills with the community. Similarly, Sermona et al. (2020) said that extension is the venue through which the products of research and innovation are converted into commodities and services that contribute to the socio-economic development of the community. Knowingly, research and extension institutions should function as one and become the goal in implementing research-based extension programs to fulfill the community's requirements while maintaining the transformation of society as a whole.

Presented in Table 6 is the research-based extension program extent of implementation among SUCs in the Bicol Region. Based on the data gathered, all SUC except SUC G "highly implements" research-based extension programs aligned with the community's needs and are anchored to the curricular offering of the institution. Besides, it can be noted that SUC D and E are the only institutions that "highly implemented" the extension programs and monitor the community

Table 6. Extent of Implementation of Research-based Extension Programs among SUCs, FY 2018-2020

INDICATORS	SUC A		B		C		D		E		F		G		Weighted mean	
	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI
Programs are...																
Aligned with the needs of the community	4.40	HI	4.33	HI	4.57	HI	4.79	HI	4.73	HI	4.71	HI	3.73	I	4.47	HI
Anchored to the curricular offerings	4.27	HI	4.33	HI	4.57	HI	4.71	HI	4.73	HI	4.57	HI	4.00	I	4.46	HI
Product of research	4.07	I	3.67	I	4.21	HI	4.36	HI	4.20	HI	3.93	I	4.07	I	4.07	I
Adopted by the community-beneficiaries	4.13	I	3.80	HI	3.86	I	4.57	HI	4.53	HI	4.64	HI	4.07	I	4.23	HI
Utilizing resource materials that are available in the community	4.13	I	3.93	I	4.29	HI	4.57	HI	4.47	HI	4.43	HI	3.80	I	4.23	HI
Providing the community with employment opportunity	3.93	I	4.00	I	4.14	I	4.43	HI	4.33	HI	4.29	HI	3.67	I	4.11	I
Generating beneficiaries' income	3.67	I	3.73	I	4.00	I	4.14	HI	4.00	HI	3.93	I	3.53	I	3.86	I
Creating linkages with different stakeholders for community development	3.87	I	4.27	HI	4.50	HI	4.93	HI	4.53	HI	4.57	HI	4.07	I	4.39	HI
Monitoring the beneficiaries even when the program is already finished	4.00	I	3.27	I	4.07	I	4.43	HI	4.40	HI	4.00	I	3.80	I	4.00	I
Developing products with the help of the beneficiaries	3.73	I	3.40	I	3.71	I	4.29	HI	4.27	HI	3.86	I	3.80	I	3.87	I
AVERAGE	**4.02**	**I**	**3.87**	**I**	**4.19**	**I**	**4.52**	**HI**	**4.42**	**HI**	**4.29**	**HI**	**3.85**	**I**	**4.17**	**I**

Legend: 1.00-1.80–Not Implemented (NI); 1.81-2.60–Slightly Implemented (SI); 2.61-3.40–Moderately Implemented (MI); 3.41-4.20–Implemented (I); 4.21-5.00–Highly Implemented (HI)

beneficiaries even when the program is already finished. Furthermore, based on the average of all the indicators, SUC B and SUC G have the least average rating regarding the extent of implementation of research-based extension programs. With an average mean of 4.52, SUC D was noted to "highly implement" the research-based extension programs.

Data revealed that reported extension programs are implemented with the Memoranda of Agreement (MOA) with partner agencies, and some are externally funded. It is worth noting that the extension is anchored on the academic programs of the SUCs. While the collected data on research-based extension profile are not conclusive of the state of extension services for all state universities and colleges in the country. They reveal a clear picture of how SUCs understand and approach research-based extension services, which is reflected in the extent of implementation of each SUC that participated in the study.

The extension concept is open to interpretations because it evolves due to tradition and policy context, reflecting institutional goals (Mojares, 2015). It has been pointed out that extension should be the application or use of the research findings of an academic institution, and he stressed that research and theoretical extension are twins and inseparable concepts. It is then implied that not all extension projects implemented were research-based. However, there is no uniform extension service delivery model. A model may be a top-down, technology-driven extension system, like the general agricultural extension service model, or a decentralized (bottom-up), market-driven extension system.

Stakeholders' Extent of Involvement in the Implementation of Research-Based Extension Programs among SUCs

Low adoption of technologies by identified communities results from a lack of research-based extension program implementation participation. The stakeholders must first understand the purpose of the programs and how it will help them surpass their present situation. There always be needs assessment of the target community. It will be warm-welcoming for them if the raw materials are on their land to be developed to generate income and sustain the program's continuity. The objectives of the programs/projects must be introduced to them. They must be involved in planning and setting the goals for where they would lead. The participatory technology generation process should have collaborated with the stakeholders so that generated technologies meet farmers' actual problems and needs.

Furthermore, the stakeholders must be involved in the monitoring and evaluation process. They are receivers of technologies and skills. Their impressions give importance to improving and examining the present programs to their common goal of addressing their community's immediate problem.

Presented in Table 7 is the stakeholders' extent of involvement in the implemented research-based extension program among SUCs. Table 7 shows stakeholders' involvement in the implemented research-based SUC A and SUC B are "moderately involved," with an average mean rating of 3.97 and 3.95, respectively. Meanwhile, in the remaining SUCs, stakeholders' extent

Table 7. Stakeholders' Extent of Implementation of Research-based Extension Programs among SUCs, FY 2018-2020

INDICATORS	SUC A		B		C		D		E		F		G		Weighted mean	
	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI	WM	EI
Stakeholders are involve in...																
Identification of potential beneficiaries	4.00	MI	4.00	MI	4.50	HI	4.79	HI	4.53	HI	4.50	HI	4.50	HI	4.40	HI
Conduct of needs assessment	4.07	MI	4.00	MI	4.57	HI	4.71	HI	4.53	HI	4.50	HI	4.57	HI	4.42	HI
Determining the goals and objectives of the program	4.13	MI	4.27	HI	4.36	HI	4.36	HI	4.47	HI	4.57	HI	4.36	HI	4.36	HI
Designing program activities	4.20	MI	4.13	MI	4.36	HI	4.57	HI	4.27	HI	4.29	HI	4.36	HI	4.31	HI
Identification of program resources	4.13	MI	3.87	MI	4.50	HI	4.57	HI	4.33	HI	4.43	HI	4.50	HI	4.33	HI
Decision-making in starting the program	4.07	MI	4.00	MI	4.57	HI	4.43	HI	4.47	HI	4.43	HI	4.57	HI	4.36	HI
Implementation of the extension activities	4.27	MI	4.20	MI	4.57	HI	4.14	MI	4.67	HI	4.57	HI	4.57	HI	4.43	HI
Monitoring the implemented programs	3.67	MI	3.60	MI	4.14	MI	4.93	HI	4.40	HI	4.50	HI	4.14	MI	4.20	MI
Assessment of the extension programs	3.60	MI	3.67	MI	4.14	MI	4.43	HI	4.40	HI	4.14	MI	4.14	MI	4.07	MI
Writing the extension reports and results of the program	3.60	MI	3.80	MI	3.86	MI	4.29	HI	3.93	MI	4.00	MI	3.86	MI	3.90	MI
AVERAGE	**3.97**	**MI**	**3.95**	**MI**	**4.36**	**HI**	**4.52**	**HI**	**4.40**	**HI**	**4.39**	**HI**	**4.36**	**HI**	**4.28**	**HI**

Legend: 1.00-1.80–Not Involved (NI); 1.81-2.60–Slightly Involved (SI); 2.61-3.40–Moderately Involved (MI); 3.41-4.20–Involved (I); 4.21-5.00–Highly Involved (HI)

of involvement is "highly involved." Further, it can be noted that stakeholders are "moderately involved" in assessing the extension programs and writing the extension reports and results of the program, with a weighted mean of 4.07 and 3.90, respectively.

These results may have been attributed to the roles and responsibilities of stakeholders as stated in the signed Memorandum of Agreement (MOA) before the program started. The result also revealed that stakeholders are significantly involved in implementing research-based extension programs, confirmed by all SUC participants. Furthermore, these demonstrate that stakeholders play an essential role in the extension implementation. It is likewise noted that stakeholders of the research-based extension are participating in the decision-making. SUCs in Bicol Region recognize stakeholders' vital role and social responsibility in society, translating that SUC extension programs should be collaborative. The involvement of stakeholders is essential for the successful implementation of research-based extension programs.

SUCs establish extension programs that are relevant and responsive to the community's needs. HEIs, extend services to the deprived and less privileged people or those living in depressed areas by providing extension services, such as programs, projects, activities, research-based knowledge, or technology that align with the school's curricular programs offered. Based on the previous study on extension programs, the involvement of the stakeholders is crucial in the implementation of any extension (Bidad & Campiseño, 2010; Pentang, 2021). Similarly, the results show that SUCs recognized the role of each stakeholder in sustaining extension programs.

CONCLUSION AND RECOMMENDATION

It is concluded that in 2018-2020, SUCs in Bicol Region implemented a research-based extension program along with different parameters and varied beneficiaries. It can also be inferred that SUCs have other focus areas observed in the consistent number of implemented programs each year. However, in some parameters, they do not have any implemented programs. The extent of implementation of research-based extension programs among SUCs in the Bicol Region varies slightly, which may be attributed to the different approaches and resources of individual SUCs. Stakeholders' involvement was also essential in implementing research-based extension programs, reflected in the "highly involved" stakeholders' involvement rating among SUCs.

It is recommended that SUCs must continuously implement research-based extension programs as they support community transformation. Revisiting the relevant information resources that may help build the RBEP design and framework in sustaining and upholding the SUCs goal in community engagement. Moreover, SUCs must benchmark fellow SUCs on implementing research-based extension programs, not to have the same programs or projects but to have standardization in implementing services to the adapted communities. In future research, it is also recommended that the relationship between the profile of research-based extension program implementation and the SUCs profile along with its: a) budget for extension programs and sizes of the school; b) Numbers of Faculty and number of researches); c) Size of schools and number of researches regarding the number of implementations, and d) Profile of type of extension conducted be investigated.

Furthermore, research-based extension programs must be promoted to strengthen the linkage of research and extension institutions. There must be strong communication and cooperation between the researchers and extension implementers in addressing the immediate needs of the adopted communities. This partnership will sustain the light of helping grassroots community development.

There are two significant limitations in this study that could be addressed in future research. First, the study focused on the number of research-based extension programs implemented in which relevant literature is scarce. Second, the data-gathering procedure is limited to remote methods during the COVID-19 pandemic, where

the survey questionnaires are provided through Google Forms. Additionally, continuous studies focusing on research-based extension program implementation should be encouraged to address this limitation. In addition, it is also suggested that one must explore the new data-gathering methods implemented for the new normal.

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