THE CSU-SM KANIYOGAN EXTENSION PROGRAM: A ROAD TO THE ENHANCEMENT OF THE COCONUT INDUSTRY IN CAGAYAN

Susan R. Matipo
Cagayan State University-Sanchez Mira, Philippines
sansuemat@yahoo.com.ph

Abstract

The study was conducted to assess the impact of the RDET Program of the Cagayan State University at Sanchez Mira Campus, “The Kaniyogan: Reaching People, Transforming Lives" after its second year of service implementation. The study utilized quantitative and qualitative research design with documentary analysis, field visits and interviews with the farmer beneficiaries as methods of gathering the needed data. The accomplishments of the programs were measured regarding the number or nature of seminars conducted and or technical/advisory services provided, demonstration areas established, enterprises organized or established, and IEC materials produced and distributed. There were 37 seminars and skills training conducted and attended to by a total of 2496 participants during the 2-year period. There are 15 community-based demonstration farms established, and 15 campus-based demonstration farms maintained. The extension program is assisting ten small scale enterprises with four individuals and six groups or cooperatives/ associations. The RDET Program was able to publish a Coffee Table Book called Kaniyogan and a Kaniyogan Newsletter. The services offered by the Kaniyogan were rated by 97.80% of the participants as “Good or Better." The extension program denoted to have very good impact on individuals who can fund their projects, but it was found out that it does not affect much the lives of the individual members of those who are into small groups or associations. Based on the result of the study, if the members of the small groups or associations have only adopted the technology in their business activities, this will be sustained and can even shift this into an enterprise. It is recommended that training should be given to individuals who are interested and capable of adopting the technology and they will be the ones to create employment opportunities for the less capable groups.

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Keywords: Impact of Extension Program, Agriculture, Skills Training, Cagayan State University

I. INTRODUCTION

Extension services are one of the three major functions of any State Universities and Colleges in the Philippines. This serves as an avenue for SUCs to make use of their technologies, expertise, and resources to help the community. In a press conference during the 2016 National Extension Conference on Higher Education, Napoleon Juanilo Jr. of Commission on Higher Education (CHED) urged schools to create projects to bring experts closer to communities. He wanted HEIs to look for solutions to community problems. Indeed this kind of programs has successfully

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helped the community. Several research studies have shown that extension services positively affect farmer's technology adoption decisions and profitability levels. For example, Garforth et al. (2003) found participatory extension positively affected both technology adoption. Cunguara and Moder (2011) found out that extension services raise incomes among beneficiaries by an average of 12% and in Ireland, dairy farmers as studied by Lapple, Hennessy, and Newman (2013), increased their profits. They found a positive relationship between dairy discussion group membership and gross margins. Moreover, the role of advisers in facilitating participatory approaches as studied by (Farell et al. 2008, Mahon et al. 2010) have been examined yielding mixed results.

In another study by Davis et al. (2012), they found a significant impact of farmer field school participation on production and income in Kenya. These results are likewise supported by other researchers like Dercon et al. (2009) also found a positive impact for extension engagement on poverty alleviation in Ethiopia by reducing headcount poverty by 9.8% and increasing consumer growth by 7.1%, and Owens et al. (2003) who found a positive relationship between extension and the value of crop production.

Recently, Elias (2013) also stated that extension participation in Ethiopia has increased farm productivity. However, the overall level of agricultural productivity observed is still low compared to the target yield set by the regional extension program based on farmers' field conditions and research stations

On the other hand, the extension may not always have positive effects on income and productivity. As in the case of Uruguay which was studied by Maffioli et al. (2013), extension services have positive impacts on technology adoption but no significant effect on yields for small and medium-sized fruit producers. In this study, the impact of the extension services in the Kaniyogan community was also disclosed.

Demands on Extension for program efficiency, program effectiveness and public accountability are increasing. Since the inputs for extension activities of State Universities and Colleges are from the government, it is just proper that these are evaluated to determine the program's merit or worth.

Cagayan State University at Sanchez Mira is just one of the eight campuses of the University. It has eight colleges including the Graduate School approximately having 4900 students with 40 regular faculty members and 90 lecturers, 17 regular staff and 27 contracts of service.

To uphold with its four-fold functions-Instruction, Research, Extension and Production, the campus has to design an Extension Program that will help the government in addressing the socio-economic problem among marginalized people particularly in Sanchez Mira, Claveria, Sta. Prexedes, Pamplona, Abulug,, Ballesteros and Allacapan as among its identified service areas. The Sanchez Mira Campus has crafted a manifesto "The KANIYOGAN: Reaching People, Transforming Lives" now in its third year of fruitful service fascinatingly envisions as an instrument in the improvement of the socio-economic development of the Kaniyogan Community. It is wished-for to be the road to the enhancement of the value chain for the coconut industry in the region. In its two years of existence, it has earned its reputable name as a service provider. There are six (6) priority areas identified which include (1) employment and livelihood, (2) education and training, (3) health care, (4) safety and security, (5) nutrition and food production and (6) general services.

The conceptual underpinning for this study is based on the concept of Evenson (2005) stating that it is convenient to

visualize extension as achieving its ultimate economic impact by providing information and educational or training services to induce the farmer awareness, farmer knowledge, farmer adoption of technology or practices, and changes in farmers' productivity.

It is common knowledge that farmers in the rural areas are unfamiliar with the agricultural technology and its availability. Thus, through extension services, the improved technology is made known to the beneficiaries. Through extension, farmers acquire knowledge about the basic and modern agricultural practices disseminated to them and adopt the technology or practice and put into practice the advanced technology they have learned with the supervision of their extensionists. As a result of the adoption of the new technologies, changes in farmers' productivity in the form of an increase in farm yields from the adoption of the improved technology and farm practices is expected.

KANIYOGAN refers to a place where coconuts abound. It is a word that truly approximates CSU-SM banner commodity – the Coconut. It is a name that will embrace all the research and extension activities, programs, projects and products produced by the campus. It is a trademark not only for CSU-SM but also the entire municipality, for it also cuddles the province's project OTOP – One Town, One Product and for Sanchez Mira's OTOP is the ever wonderful "Tree of Life – the COCONUT. It is a name in which CSU and Sanchez Mira will be proud of; a name worth recorded in the history of CSU-SM.

The CSU-Sanchez Mira Campus, the birthplace and said to be the center of the Kaniyogan has embraced the same product as its banner program/commodity in the university's research and extension thrusts.

For the Kaniyogan to be truly functional in its mandate particularly to cater to the needs of the community, the RDET Office conducted a needs assessment survey as a basis for the development of the extension program of the campus. The result served as the framework for the extension activities for each college. This strategy was based on the concept of Diem (2001) who believed that a program that addresses the needs identified by the people themselves tends to be more effective in eliciting people's participation. He further said that any program must recognize the value of the people's participation starting from the conceptualization phase by exploring the actual concerns of the people which are then translated into a workable program or project responsive to the identified needs or concerns. The result of said needs assessment is presented in Figure 1.

This result of the needs assessment survey was presented to the colleges, and each one adopted a project a program and project in which they can best offer. Nine projects evolved as a result of the study and were baptized using Iloko terms that befit the generic type of service each college can offer. They are Partuat, Saririt, Salaknib, Sanggir, Sirmata, Sarusar, Salun-at and Salbar.

PARTUAT (*creation*) is responsible for the creation of employment and livelihood through the Technology Diffusion of Coco-based Non-food Products by the Science high School and the College of Arts and Sciences.

SARIRIT (*intelligence*) takes up the role in addressing education and training problem through the improvement of literacy and numeracy skills among children of coconut farmers and tenants in Sanchez Mira, Cagayan. This was launched by the College of Teacher Education.

SALAKNIB (*protection)* by the College of Criminal Justice Administration takes care

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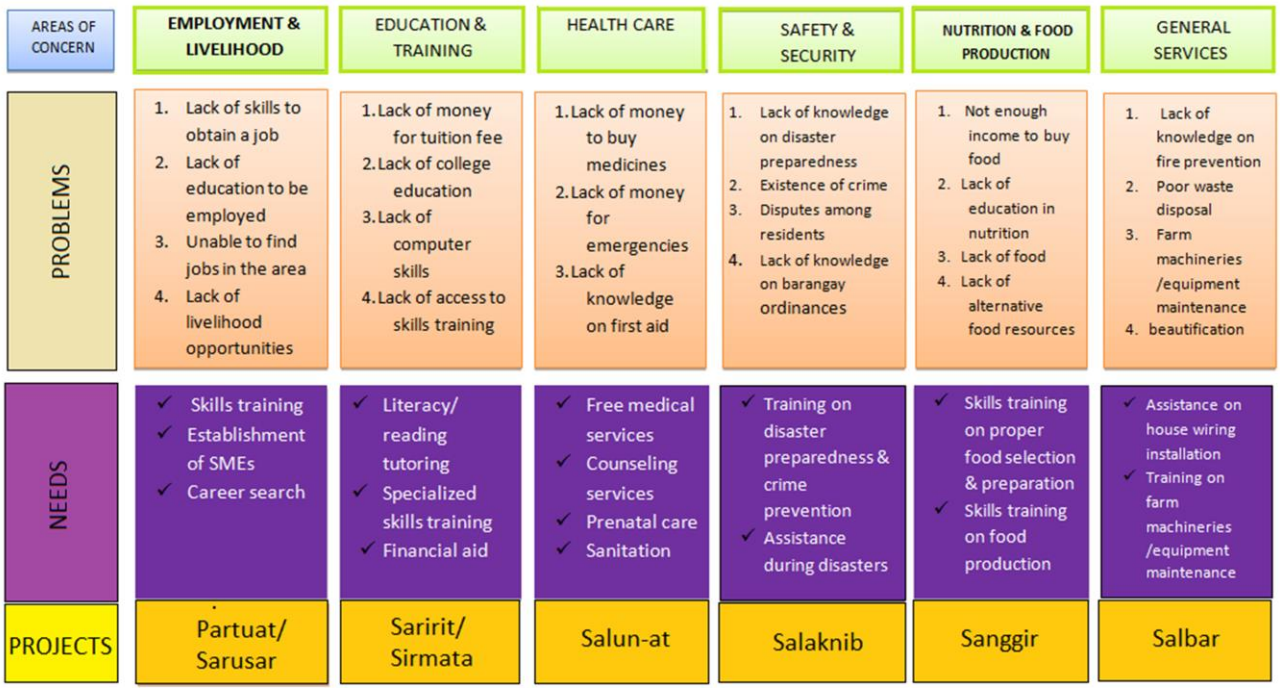

Figure 1. Community Needs Assessment Result

of the safety and security of the Kaniyogan community through the conduct of extension activities on disaster preparedness, familiarization on barangay ordinances as well as crime prevention.

SANGGIR (support) will help the Kaniyogan community to promote the nutrition and food production by conducting technology demonstration and technology transfer through the establishment of integrated coconut-based organic farms. It is being promoted by the College of Agriculture

SIRMATA, (*vision*) of the College of Information and Computing Sciences focuses on the Information Communication Technology (ICT) of the Kaniyogan Community. It aims to transfer knowledge and skill in computer operations for their development and can lead to new avenues of change in their lives.

SARUSAR, (*barn or a storage place*) of the College of Hospitality and Industry Management aims to introduce alternative food sources for the community thus centered on the production of Coco-based Food Products to build local capabilities, generate employment, and increase the income of coco-farmers through product development and improvement.

SALBAR *(to solve)* initiated by the College of Industrial Technology and is primarily responsible to work out on the problems that pertain to vehicles, houses, appliances and wastes of the Kaniyogan Community.

These on-going projects of the Campus Research Development, Extension, and Training (RDET) are all geared towards the advancement in the quality of living among the people in the KANIYOGAN community in Sanchez Mira.

After two years of implementation, there are observable changes in the service areas and sound clients feedbacks. However, unless an evaluation is conducted, no

documents are presented to support such claims. This assessment is necessary to discover the program's impact on the individuals and or the communities. Likewise, this evaluation is needed to direct attention to the needs of a particular stakeholder and to gain support from policy makers and advisory councils for the improvement of the program.

This assessment aimed to determine the status and impact of the Kanyiogan Extension Program of CSU-SM. Moreover, it sought to answers the number and nature of seminars and training conducted, demonstration areas established, enterprises organized or established and materials produced and distributed by the respondents.

Further, it also evaluated how do the respondents assess the services provided by the extension program of the campus and lastly, how do the farmers assess their productivity before and after the intervention by the CSU-SM Extension Program.

II. METHODOLOGY

This study was conducted from May 2016 to June 2016 which is the end of Year 2 of the program. It made use of a documentary analysis and a descriptive survey as methods of gathering the needed information. The documentary analysis was used to determine the accomplishments of the program and the assessment of the participants of the services provided by the program. The descriptive-qualitative design was used to document the productivity of the farmer-beneficiaries as an effect of the extension program.

There were 2496 sets of the standardized questionnaire included in the analysis which indicates the number of participants in the training offered by the Extension program from June 2014-June 2016.

As to the productivity of the farmer beneficiaries, only the participants who adopted the technologies were interviewed. The other needs and problems of the community were gathered through another needs assessment survey during the researchers' visit to the service areas. The accomplishment of the program was analyzed using the number of training conducted and the number of participants, a number of demonstration farms established and the scope of the projects by the adopters of the technology. The productivity as an effect of the extension program is presented both quantitatively and qualitatively.

III. RESULTS AND DISCUSSIONS

3.1 Trainings and Seminars Conducted

After the launching of the KANIYOGAN in June 2014, a series of presentations of the Campus' RDET Program were done in the LGU's of the seven municipalities adopted as services areas of the university. The program was presented indicating all the mature technologies ready to be transferred to interested individuals or groups. Table 1 (Appendix) shows the type of training conducted by the different projects based on requests made by individuals, groups and fund donors. There was a total of 39 seminars and skills training conducted which were attended to by mostly farmers, women groups, 4P's beneficiaries, Ips, cooperatives, and students. The data show that most of the training requested were from the "Sarusar: Technology Transfer of Coconut Food and other Food Products" and from the "Sanggir: Small-Scale Integrated Organic farming. These data reveal that the greatest need of the people in the service area of CSU-SM is food which is an indication of poverty. This supports the data from IFAD (International Fund for Agriculture Development) that poverty is severe and widespread in rural areas with Agriculture as the primary and often the only source of income for poor rural people.

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Table 1. Training Conducted by Different Projects under the Kaniyogan Extension Program

Title of Training	Venue of Training	Date Conducted	No. of Trainees
Sanggir (College of Agriculture)			
1. Seminar-workshop on Mokusako Production	CSU-SM	Jan 5-7, 2015	88
2. Beekeeping	CSU-SM	March 25, 2015	38
3. Mushroom Production	CSU-SM	Mar 24, 2015	38
4. Small Scale Coconut Based Integrated Organic Farming	Coll. Of Agriculture	August 2014 to August 2015	20
5. Artificial Goat Insemination Seminar in Allasitan Pamplona, Cagayan	ISU/CSU-SM	November 12, 2014	25
6. Coconut Based Beekeeping	CSU-SM	Mar 19-21, 2014	15
7. Pre-Decomposition and Composting Training	CSU-SM	Feb 5, 2014	140
8. Vermicomposting	CSU-SM	August 27, 2014	72
9. Mushroom Production, Coconut Food Products Processing and Beekeeping Seminar (Parolees)	CSU-SM CHIM	October 24, 2015	53
10. Moringa-Based feeds for Rabbits	CSU-SM	May 21-22, 2015	50
Sarusar (College of Hospitality Industry Management)			
1. Fish Processing	Tokitoc, SMC	Feb 11-12, 2015	45
2. Hygiene Fish Drying	Tokitoc, SMC	Feb 26-28, 2015	45
3. Coconut Food Products production	CSU-SM	Mar 23, 2015	38
4. Nata de Coco Making	Magacan, SMC	June 5, 2015	62
5. Nata de Coco Making	Tokitoc, SMC	June 6, 2015	50
6. Nata de Coco Making	Langagan, SMC	June 13, 2015	42
7. Nata de Coco Making	Callungan, SMC	June 14, 2015	45
8. Nata de Coco Making	Bangan, SMC	June 20, 2015	36
9. Technology Transfer of Coconut Food Products	CHIM	September 2014-March 2015	55
10. Training Workshop on Coconut Based Food Products	CSU-ATI	June 8, 2014	52
11. Technology Transfer on Banana Chips and Chicharon Making Cum Organizational Development	DTI/OWWA/CSU-SM	July 1-3, 2014	50
12. Training Workshop on Coconut Based Food Product	CHIM	July 8, 2014	30
13. Skills Training Workshop on Fish Value Adding Practices	DSWD-R2	December 15-17, 2014	35
14. Training on Tropical Wine Making	CHIM	Jan 18-19, 2014	45
15. Nipa Sap Sugar Making	Residents of Cabaggan Pamplona Cagayan	Dec 9-12 2014	60
16. Nata de Coco and Vinegar Processing	Nagattatan ES Teachers & Pupils	Nov 7, 2014	35
17. Nipa Sugar Production	Stanpron Cooperative Gutad, Calapan City, Mindoro Oriental	April 10-15, 2016	25
Partuat (College of Arts and Science/ Science High School)			
1. Seminar-Workshop on Essential Oil Extraction	CSU-SM- CSU-Lallo	Jan 7-14, 2015	76
2. Technology Diffusion of Coconut Non-Food Products	SHS	June-Dec. 2014	60
3. Seminar-Workshop on Entrepreneur Development	CSU-SM	Feb 15, 2014	168

Continuation of Table 1

Title of Training	Venue of Training	Date Conducted	No. of Trainees
4. Seminar-Workshop on Entrepreneur Leadership: Managing Business	CAS	Feb 11-12, 2014	108
5. Seminar-Workshop on Entrepreneur Development	CSU-SM	Feb 15, 2014	168
Salaknib (College of Criminal Justice Administration)			
1. Disaster Preparedness	Dagueray	Feb 14-15, 2015	92
2. Disaster Preparedness	Marzan	Feb 21-22, 2015	23
3. Disaster Preparedness and Crime Prevention Project	CCJA	January - December 2014	120
4. Disaster Preparedness	Masisit	Feb 21-22, 2015	85
Saririt (College of teacher Education)			
1. Literacy and Numeracy Program for Children of Coco Farmers	CTE	Aug 2014 –Aug 2015	200
Sirmata (College of Information and Computing Sciences)			
1. Basic ICT Literacy for Coconut Farmers of Sanchez Mira	CICS	Nov 2014 - May 2016	150
Salaknib (College of Industrial Technology)			
1. Integrated Industrial Technology Services for Barangays in Sanchez Mira	CIT Students	June 2014 to December 2015	40

Moreover, there were three seminars conducted related to business management and Entrepreneurial Leadership.

The Literacy and Numeracy project spearheaded by the College of Teacher Education was attended to by children of lp's in the community, and the ICT Literacy seminar was requested by Barangay officials needing knowledge on computer operations.

3.2 Community-Based Demonstration Farms

Table 2 presents the community-based demonstration farms established and assisted by the Extension Program. There are eight coconut rehabilitation projects done. These were planted with dwarf coconut varieties and two synthetic varieties of coconut from Davao City. The largest area rehabilitated is owned by the MASCOOP (Masisit Livelihood Cooperative) with an area of more than 10 hectares, while the rest have one hectare each.

The Pulido Country Home Farm is a 6-hectare cocoland integrated with livestock and vegetables. The intervention sought from CSU- Extension Program is the production and management of a forage area to support the feed requirement of 17 heads of cattle. Some areas are planted with fruit trees and vegetables. Following organic farming technology. The Campus Extension Program only provided technical assistance t the farmer cooperator.

The demonstration farm on Coconut-Vegetable integration is a two-hectare coocoland owned by Richard Cagat of Centro 02, Sanchez Mira, Cagayan. It is planted with solonaceous, cucurbits and with the introduction of bee colonies to help in the pollination of the flowers for better yield. CSU- SM provided not only technical

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Table 2. Community-Based Demonstration Farms Established and Assisted by the Extension Program

Technology/ Intervention Showcased	Location	Area (Has)	Sales	Income
			(PhP '000)	
1. Farming system	Pulido Farm- C-2, Sanchez Mira, Cagayan	6		
2. Farming system	Cagat Farm - Pukel, Sanchez Mira	2		
3. Farming system/ Coconut Seedling Nursery	Serra Farm - Claveria, Cagayan	6	256.07	82.02
4. Farming system	Fernando Cristobal – Dagueray, Sanchez Mira, Cagayan	4	45.00	20.00
5. Rehabilitation of Coconut Plantation	Jose Bagasol Jr. Langagan, Sanchez Mira, Cagayan	1		
6. Rehabilitation of Coconut Plantation	George Canonizado C-2, Sanchez Mira, Cagayan	1		
7. Rehabilitation of Coconut Plantation	Felyjane Bagaoisan, Santor, Sanchez Mira, Cagayan	1		
8. Rehabilitation of Coconut Plantation	Oscar Paclibon C-1, Sanchez Mira, Cagayan	1		
9. Rehabilitation of Coconut Plantation	Dennis Bacuyag Lal-lo, Cagayan	1		
10. Rehabilitation of Coconut Plantation	MASCOOP Pureg, Sanchez Mira, Cagayan	10		
11. Bioengineering Project-Slope Control	Swan, Pudtol, Apayao National Road	17 km stretch		
12. Coconut Seedling Nursery	Ms. Lorna Manuyag Callungan, Sanchez Mira, Cagayan		67.83	22.61
13. Coconut Seedling Nursery	Mr. Elsor Papa Magacan, Sanchez Mira, Cagayan		44.52	14.84
14. Coconut Seedling Nursery	Ms. Rosie Casil		34.65	11.55
15. Coconut Seedling Nursery	Mr. Domingo Balanza, Jr		43.60	14.53

assistance but also some of the inputs of production.

The growing of tropical fruits integrated with coconut as a demonstration farm and at the same time already a business venture is located in Claveria, Cagayan owned by Mr. Florencio Serra, a retired government employee. It is a 6-hectare farm planted with different varieties of pumelo, citrus, santol, guava, papaya, rambutan, mango, and vegetables. Mr. Serra only asked for a technical assistance on production technologies food processing and marketing.

The Cristobal Farm is a demonstration of a small scale Integrated organic farm. It includes native pigs, ducks, free- range chicken, various vegetables integrated into a coconut farming system. Some of the inputs of production like animal stocks and seed stocks are provided by CSU-SM. Mr. Cristobal reported a net income of 20,000.00 from his operations in 2015.

Table 3. Campus-Based Demonstration Farms as Learning Sites during Seminars and Trainings

Technology/ Intervention Exhibited	Location	Area (Has.)/ Beneficiaries	Stage/Status
1. Coconut-Pineapple Integration	Nagbaranganan, Sanchez Mira, Cagayan	3 hectares	Growing stage
2. Coconut-Small Ruminant Integration	Nagbaranganan, Sanchez Mira, Cagayan	2 ha 21 heads	Multiplication stage
3. Coconut-Coffee Integration	Nagbaranganan, Sanchez Mira, Cagayan	1 hectares	Growing stage
4. Coconut-Banana Integration	Nagbaranganan, Sanchez Mira, Cagayan	1 hectares	Growing stage
5. Coconut-Tropical fruit Trees Integration	Nagbaranganan, Sanchez Mira, Cagayan	3 hectares	Growing stage
6. Coconut-Native/Wild Pigs Integration	In-Campus	30 heads	Multiplication stage
7. Rabbit Production	In-campus	30 heads	Multiplication stage
8. Vermicomposting	In-campus		
9. Mushroom Production	In-campus		
10. Banana Tissue Culture Laboratory	In-campus		
11. Organic Vegetable Production	In-campus	1 ha	
12. Coconut Nursery	In-Campus		
13. Nata de Coco Production	In-campus		
14. Coco Vinegar Production	In-campus		
15. Geotextiles and Biologs Production	In-campus		

The Demonstration Project for the Geotextle and Biologs is at Swan, Pudtol, Apayao. It is a 17 kilometer stretch of road with slopes along its sides. This bioengineering project is a Php 3M worth of contract for materials and technology.

The production of coconut seedlings of different farmer cooperators had given a good income for five seedling producers. The net income is based on a 7 peso net income for every seedling produced. The highest income earned was Php 82,023.33 by Mr. Serra.

3.3 Campus-Based Demonstration Farms

Most of the seminars and skills training offered were conducted inside the campus. This is because the demonstration farms that serve as learning sites for the trainees are on the campus. There are 15 demonstration projects inside the campus.

The production of geotextiles and biologs from coconut husks is making a good income for the campus with its contract with the DPWH. The project can produce at least 3-5 biologs per day operated by 2-3 persons. The coco vinegar production is capable of producing an average of 100 liters per month and an average of 100 also for each of the sweetened and pickled nata de coco. The only limiting factor for more production is the source of packaging materials for the products which is now being worked out by the campus.

CSU-SM is the only accredited source of coconut seedlings by the PCA to supply the seedling requirements for coconut

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Table 4. Enterprises organized and Established

Name of Enterprise Organized/ Developed	Participants/ Beneficiaries	Location	Products	Remarks	Net Income (PhP '000)
1. Dragon Fruit Growers Association	Dragon Fruit Growers	Sta. Rosa, Abulug, Cagayan	Wine, Vinegar, Jams, Pickles, Preserves	Just started.	
2. Wives of Tokitoc Organization	Members	Tokitoc, Sanchez Mira, Cagayan	Fish longanisa, dried fish, smoked fish		
3. Magacan Fruit Wine	RIC Members	Magacan, Sanchez Mira, Cagaayan	Wine	5000 lit/ season	150
4. Janela Food Products	Janet O. Bagasol	Magacan, Sanchez Mira, Cagayan	Vinegar, Nata de coco	1000 lit. /season	20
5. Sera Fruit Farm	Florencio Sera	Claveria, Cagayan	Tropical fruits	10 tons fruit/ season	120
6. Cristobal Organic Farm	Fernando Cristobal	Sanchez Mira, Cagayan	Vegetables Chicken and native pigs		20
7. Tiwan-Tiwan SKA Minanga	4Ps Beneficiaries	Minanga, Sanchez Mira, Cagayan	Smoked fish, dried fish Nata de coco		
8. Seafudz SKA Nagtupacan	4Ps Beneficiaries	Nagtupacan, Sanchez Mira, Cagayan	Smoked fish, dried fish Nata de coco		
9. MASCOOP	Members	Masisit, Sanchez Mira, Cagayan	Pickled Nata de Coco Production		
10. STANPRON Cooperative	Members	Gutad, Calapan City, Oriental Mindoro	Nipa Vinegar, Nipa Sugar	50 000 liters per season	150,000.00

rehabilitation projects in Northern Luzon. The nursery can accommodate about 12000 seedlings per batch however, the other seedling requirements are bought from farmers who were trained to produce coconut seedlings. From December 2015 to May 3, 2016, there was a total 53,566 coconut seedlings delivered to different provinces in Northern Luzon.

The other projects are agriculture-based and are being managed by the College of Agriculture. Most of the projects are located at the Nagbaranganan site which is now underway to become an Agro-Eco-tourism destination in the community particularly on organic fruit and vegetable production to be highlighted with bird watching activities in cooperation with the Wild Bird Club of the Philippines, Wild Bird Society of Japan, ARRCN (Asian Raptor Research and Conservation Network and the Department of Tourism in the Province of Cagayan.

All these demonstration projects serve as learning sites for farmers and students and often serve as sources of inputs for

participants who are interested to adopt the technologies. Inputs given however are bound by a Memorandum of Agreement (MOA) or Memorandum of Understanding (MOU).

3.4 Enterprises Organized and Established

Not all the technologies that are introduced to the participants in the training and seminars were adopted. Only very few individuals or groups were able to use the technology and became livelihood and small-scale enterprises. There are only four individuals and seven groups who are active during the time of the study.

It is very evident on the data that most of the technologies adopted are related to food processing (8) and only (3) three on production. The food processing technologies include wines and vinegar, jams and pickles, and some on fishes. The three (3) who are engaged in production are individuals who have input capacities but are not so knowledgeable on the technologies of the project they are into. Hence these three farmer cooperators are only provided with technical assistance for their projects.

In an interview to some of the participants of the seminars and skills training conducted who did not pursue any of the technologies they learned, most of them said that they do not have enough resources to start a project. Some of them said that they started but the return of investment (money or time invested) is very long that they need to work in other jobs that can give them daily income for their subsistence. Processing fruits and fishes take time before they can have a return. They said it is much easier to sell the products raw and have the money instantly. They do not even have enough money for food, and much more money to be invested.

For some of the enterprises who presented their income statement, Magacan Fruit wine consisting of RIC members of Magacan was able to produce a net income of 150,000.00 for the year 2015, Php20,000.00 for Janela; Php120,000.00 for Serra Fruit Farm; php30,000.00 for Cristobal Farm and Php150,000.00 for STANPRON Cooperative. This data shows that even small enterprises when properly managed can produce a decent income.

3.5 Materials Produced and Distributed

To facilitate the transfer and adoption of technology by the farmers and other interested individuals or groups, the RDET Office produced IEC materials for distribution during seminars and product displays. Some of the technologies are translated to Ilokano dialect to facilitate understanding of the technology by the Ilokano farmers.

Table 5. IEC Materials Produced and Distributed

Title of Materials	Number of capsules Distributed
1. Kaniyogan Coffee Table book	100
2. Kaniyogan Newsletter	200
3. Partuat Project Brief	100
4. Salaknib Newsflash	100
5. Sanggir Newsbrief	100
6. Sarusar Newsletter	100
7. Salbar News	100
8. Saririt Newsletter	100
9. Sirmata Bits	100
10. Special Buko Pie	100
11. Sweetened Nata de Coco	500
12. VCO Making	100
13. Vermicomposting	200
14. Mushroom production	500
15. Banana Chips	500
16. Buko Chips	300
17. Buko Pie	100
18. Pickled Nata de Coco	500

The RDET office was able to publish and got a copyright of a Coffee Table Book named: Kaniyogan: A Mystery Journey on

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the Tree of Life, (ISBN 978-621-95278-0-4). It is a book that illustrates all the existing coconut and coconut by-products of the Cagayan State University at Sanchez Mira, which is designed to provide the reader an overview of what the palm is all about and the wonderful products that can be derived from the tree and its economic value.

A Kaniyogan Newsletter (ISSN 2449-5026) was also published which comes in 1 issue per year. It contains the reports and activities done by the Kaniyogan Extension Program.

Each of the different projects under the RDET Kaniyogan produces their IEC materials which come in different names such as Project Briefs, Newbits, Newsflash, etc.

3.6 Participants' Assessment on the Trainings Conducted

Based on the evaluation of the participants after each seminar or training conducted, the data on Table 7 summarizes the number of participants who rated the training as "Good or Better," on a scale of 1 to 5, 1 being Poor and five as Outstanding. In a span of 2 years with a total of 37 seminars and skills training conducted, 97.80 % of the 2496 participants rated the activities as "Good or Better." This means that they were contented with course content, schedule, timeliness and resource speakers. This is because the seminars offered are based on the requests made by the participants themselves and that the technologies offered are research-based which had been tested and verified and are now ready for dissemination and adoption.

3.7 Farmers' Productivity as Impact of the Extension Activity

It is difficult to assess the impact of extension services as the indicators—e.g., adoption of technology and farm productivity—are also influenced by many other factors that have compounding effects. In this activity, only the adopters of the technology were interviewed on their perceived effects of impacts of the extension program delivered by the Kaniyogan RDET Program. These include the nine (10) individuals or groups who were able to establish a small scale enterprise as a result of their participation in the extension program of the campus. Their success stories are recorded and are presented in this section.

The *Pulido Country Home Farm* has a very good impression of the Extension Program of the campus. According to him, the technology on forage establishment for his cattle production has helped a lot in his farm management. His practice of just giving rice bran to his animals especially during rainy season caused deaths to many of his animals. His investment on commercial feeds and rice bran did not result to a good stand of the animals. When he learned about the program of the university, he asked for technical assistance on forage establishment. CSU-SM provided planting materials of Super Napier and assisted in the establishment of the forage area, and now he stopped buying commercial feeds and rice bran. He was able to employ seven laborers already to work in his farm. He is interested in making silage for his animals.

The *Serra Fruit Farm* managed by the fruit worker, and businessman had been established without the intervention of CSU Extension program. When he had some problems on marketing of the seasonal fruit trees, he came to CSU-SM to ask for Technical assistance on marketing and processing. The university trained MR. Sera on food processing particularly on the citrus fruits that are not very saleable. He was trained in making vinegar, concentrates, jams and jellies. During the last harvest season, he was able to process calamansi and other citrus fruits into concentrates. While waiting for the harvest season, Mr.

Table 7. Participants Assessment on the Trainings Conducted

	Title of Training	Persons Trained	Participants who rated training as Good or Better	%
1.	Seminar-workshop on Mokusako Production	88	85	96.59
2.	Beekeeping	38	38	100.00
3.	Mushroom Production	38	38	100.00
4.	Small Scale Coconut Based Integrated Organic Farming	20	20	100.00
5.	Artificial Goat Insemination Seminar in Allasitan Pamplona, Cagayan	25	24	96.00
6.	Coconut Based Beekeeping	15	14	93.33
7.	Pre-Decomposition and Composting Training	140	135	96.43
8.	Vermicomposting	72	72	100.00
9.	Mushroom Production, Coconut Food Products Processing, and Beekeeping Seminar	53	53	100.00
10.	Moringa-Based feeds for Rabbits	50	50	100.00
11.	Fish Processing	45	45	100.00
12.	Hygiene Fish Drying	45	45	100.00
13.	Coconut Food Products production	38	38	100.00
14.	Nata de Coco Making	62	48	77.42
15.	Nata de Coco Making	50	50	100.00
16.	Nata de Coco Making	42	42	100.00
17.	Nata de Coco Making	45	45	100.00
18.	Nata de Coco Making	36	35	97.22
19.	Technology Transfer of Coconut Food Products	55	55	100.00
20.	Training Workshop on Coconut Based Food Products	52	52	100.00
21.	Technology Transfer on Banana Chips and Chicharon Making Cum Organizational Development	50	45	90.00
22.	Training Workshop on Coconut Based Food Product	30	29	96.67
23.	Skills Training Workshop on Fish Value Adding Practices	35	35	100.00
24.	Training on Tropical Wine Making	45	45	100.00
25.	Nipa Sap Sugar Making	60	55	91.67
26.	Seminar-Workshop on Essential Oil Extraction	76	75	98.68
27.	Technology Diffusion of Coconut Non-Food Products	60	60	100.00
28.	Seminar-Workshop on Crafting Business Plan and Strategies for a Successful Business	145	144	99.31
29.	Seminar-Workshop on Entrepreneur Leadership: Managing Business	108	105	97.22
30.	Seminar-Workshop on Entrepreneur Development	168	165	98.21
31.	Disaster Preparedness	92	91	98.91
32.	Disaster Preparedness	23	23	100.00
33.	Disaster Preparedness and Crime Prevention Project	120	115	95.83
34.	Disaster Preparedness	85	85	100.00
35.	Literacy and Numeracy Program for Children of Coco Farmers	200	200	100.00
36.	Basic ICT Literacy for Coconut Farmers of Sanchez Mira	150	145	96.67
37.	Integrated Industrial Technology Services for Barangays in Sanchez Mira	40	40	100.00
	OVERALL	2496	2441	97.80

Sera integrates vegetables with the fruit trees. He has three (3) laborers in his farm. According to Mr. Sera, the Extension Program of the University has helped him promote his products and the promotion made by CSU-SM had caused an increase in his sales and in his popularity.

The small groups who were able to establish an enterprise except for the

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MASCOOP have problems and their operations are about to stop. Even with the intervention of the CSU-SM Extension program, their problems may not be solved. They may have learned and mastered the technologies, but many are not committed to pursuing their projects due to lack of time for them to work for free in the project. According to them, they cannot afford to spend a day without any income for their families. Working in the cooperative or the association cannot give them their needs for the day. Moreover, the majority of those who were interviewed stated that for the technologies that are introduced to them which can be done without so much capital, they are practicing it in their homes or backyards. They even stated that they prefer to work alone than in groups.

3.7 Overall Assessment

The CSU-SM RDET office was able to craft a program “Kaniyogan: Reaching People, Transforming Lives" to cater to the banner commodity assigned to the campus which is coconut. There are eight projects under the program, lodged in each of the eight colleges based on their respective specializations. The extension program was able to conduct 37 seminars since its launching in June 2014. There are 11 community-based demonstration farms established, and 15 campus-based demonstration farms maintained. The extension program is assisting ten small scale enterprises with four individuals and 6 groups or cooperatives/ associations. The RDET Program was able to publish a Coffee Table Book called Kaniyogan and a Kaniyogan Newsletter. The services offered by the Kaniyogan were rated by 97.80% of the participants as “Good or Better."

IV. CONCLUSIONS

Based on the result of the study, a common observation was noted. If the technology is adopted by an individual who can afford to spend the inputs of the project, it will be sustained and will grow into an enterprise. Moreover, if this is introduced to a group just to be able to avail of a small amount of grant, it will die when the fund is used up.

The extension program has a very good impact on individuals who are able to fund their projects. Moreover, it has not affected much the lives of the individual members of small groups or associations.

The ultimate test of extension program is the impact that it has on the productivity of farmers, including their incomes and quality of life, also, to its contribution to sustainable agricultural development. The Kaniyogan is still in its second year of implementation and is learning from its researches and experiences on how to create a greater and more tangible impact on the lives of its clienteles. Theories of extension are helpful but are not always perfect for a particular situation or group. In the implementation of the Kaniyogan Extension Program, several problems were met. These problems were observed and were verified leaving some lessons for the improvement of the services of the extension program.

Trainings should be given to individuals who are interested and capable of adopting the technology, and they will be the ones to create employment opportunities for the less capable groups. In that way, the less capable groups will learn the technology while they earn their living. The more capable individuals will serve as arms of the university in disseminating the technologies as learning sites of the farmers and at the same time help the less capable groups earn an income. From these observations and findings, the following recommendations are presented:

1. The Kaniyogan Extension Program should continue its efforts in reaching the people to help them transform their lives. To be able to do this, the administration should allot funds for additional working

capital to persons who have started their projects but cannot upscale due to financial constraints.
2. The administration should consider providing mobility for the extension program to be delivered and monitored periodically.
3. The program should conduct research on the effects of the employment of the less capable groups in the projects or enterprises established by those trained and assisted by the extension program to come up with a valid conclusion that the method is helpful.
4. The Extension program should give due recognition to individuals or groups who are successful in their projects as a result of the intervention of the program.

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