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Village Crop Productions Implemented under Micro financing Program through Cooperative Development in Davao Oriental

Jessie ALZATE[1]
[1]Assoc. Professor, Davao Oriental State College of Science & Technology
City of Mati, Davao Oriental 8200

Corresponding author: jvalzate2000@yahoo.com

Abstract

This study was conducted to find out the impact of micro-financing hybrid rice, hybrid com, bitter gourd (Ampalaya), and eggplant productions on the income of 40 beneficiaries (10 per crop) in the City of Mati and towns of San Isidro and Lupon in Davao Oriental. It also determined the beneficiaries' level of knowledge on the policies in availing of micro-financing, and adopting crop production technologies. The data were subjected to descriptive statistics using frequency counts, percentages, means and inferential analysis using Chi-square. The respondents of hybrid rice, hybrid corn, and eggplant production were more knowledgeable in terms of the policies implemented in availing of micro-financing than the respondents of Ampalaya production. The micro financing program increased the beneficiaries' annual average income, income per cropping season, and amount spent for food by 55 %, 43 %, 45%, respectively. Likewise, their crop productivity improved with 29.4% increase in their yield per cropping cycle. Policies imposed in availing of micro-financing catalyzed the respondents' adoption of technologies in producing hybrid rice, hybrid corn and eggplant. However, these policies did not influence the respondents' adoption of Ampalaya production technologies.

Keywords: cooperative development, crop productions, micro-financing, microfinancing policies, technology adoption

Introduction

Crop production is primarily the cultivation of crops that are utilized by man for human survival. Farm families cling to subsistence agriculture characterized by producing food for household Consumption. Due to the increasing population, unabated extraction of the once bountiful resources available to rural societies persisted. Thus, traditional agriculture turned unsustainable prompting rural villagers to shift to diversified or mixed farming system (Kottak, 1991 p172) Since 1960s, the Philippine government launched various crop production programs. Along with these

programs were the package of support services like capability building. organizational development, credit and marketing services. Legal representations of the beneficiaries to access credit from government financing institutions were the cooperatives in various types. Cooperatives are instruments by which the poor can participate in the development process. It served as vehicle to achieve social justice, self-reliance and economic development (Hermoso, 1997 p 123).

One of the gaps of these programs is the provision of effective and timely credit services. This should be considered along with the diffusion of scientific farming methods thus, an essential ingredient of rural development (Rolai 1991).

Cognizant Of rural organizations' lack of skills and capital, the Davao Oriental State College of Science and Technology (DOSCST) launched its Micro finance Program in 1999.Wlth the seed money of 1.3 million from the Cooperative Development Authority (CDA), DOSCSTMFP provided capital assistance to cooperatives and associations in the form of "soft" loan, capability building and enterprise development for re-lending to their members for income-generating activities. It can also be used as working capital, purchase of equipment and other capital outlay, except land. This system is patterned after the Self-Help Group (SNG) system in Bangladesh where the group is required to open a bank account that serves as direct channel of transaction between the financer and the group-client.

Since its establishment DOSCSTMFP served more than 40 rural organizations Some of which were cooperatives. However, no empirical data were established on its general level of success. Specifically, it was not documented whether the program has achieved its philosophy that it shall serve as vehicle to uplift the living condition of the most vulnerable sector of the society such as the rural poor Results of this study would reinforce scarce data. and validate the relevance of micro financing in the area of crop production through cooperative development Extension workers and rural development facilitators Can identify the factors associated with higher crop productivity as well as determine appropriate policies necessary in implementing micro financing program.

Objectives

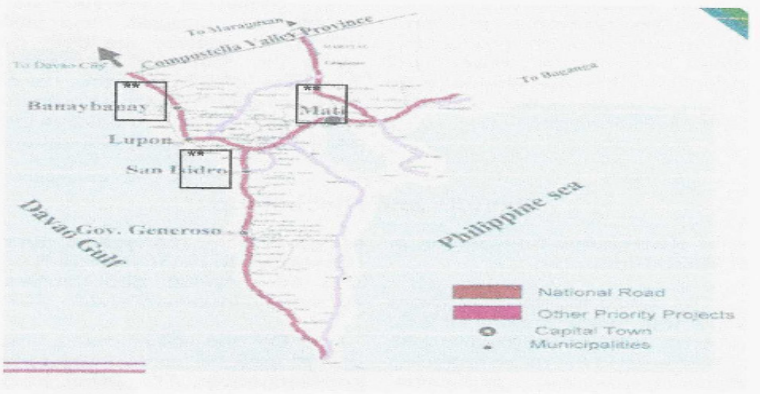
The study assessed the village crop production implemented under micro financing program among the beneficiaries.

Specifically, it aimed to answer:

1. the beneficiaries' knowledge level on the process of availing micro-financing program for crop productions in terms of the policies implemented by the cooperatives;
2. the beneficiaries' level of adoption of hybrid rice, hybrid corn, ampalaya, and eggplant production technologies;
3. the consequences of micro-financing program in terms of economics and crop productivity; and
4. the significant relationships between the respondents' level of knowledge on the loan policies of their cooperatives and their adoption of production technologies.

Materials and Methods

Ten beneficiaries each of the four types of crop production or a total of 40 served as respondents. Complete enumeration was done among the three cooperatives in Mati City and in the municipalities of Banaybanay and San Isidro in Davao Oriental. These cooperatives availed of the DOSCST Micro Financing Program for engaging in hybrid rice, hybrid corn, ampalaya and eggplant productions.



Legend:Study site **
Fig 1. Map of Davao Oriental showing the study site

Table 1. Crop production and cooperative distribution of the respondents

Crop Produced	Cooperative	Frequency
Ampalaya	Camansi Multipurpose Cooperative	10
Eggplant	Camansi Multipurpose Cooperative	10
Hybrid Rice	Saranay Farmers Cooperative	10
Hybrid Corn	La-Union Multipurpose Cooperative	10
	Total	40

Data were gathered from members of the Camansi Multi-purpose Cooperative (CAMCO) in Mati city who were engaged in either ampalaya and eggplant production or both while in San Isidro, La Union Multi-Purpose Cooperative (LUMUPCO) were those who planted hybrid com. In Banaybanay, the cooperative members of Saranay Farmers' Cooperative (SAFARCO) who were into hybrid rice production served as respondents, Data collection was done through the use of questionnaires which included queries on policies in availing of the micro financing program and adoption level of the respondents on the technologies in crop productions.

The respondents' adoption of the technologies on the four crops was focused on cultural management using the pattern of adoption established by Rogers (1962p.150) i.e., awareness, interest, evaluation, trial, and adoption answered through 3-point scale ("Yes", "No", and "No knowledge').

Data on the economic and crop productivity impacts of crop productions were

obtained through the answers of the respondents on the questionnaire by comparing their statuses before and after availing of the micro-financing.

Data Analysis

Statistical tools such as frequency counts, percentages, and means were utilized to analyze the data descriptively using the Statistical Package for Social Sciences (SPSS) software. The relationship between adoption level of the technologies in crop productions and policies implemented were computed using Chi-square.

Results and Discussion

Respondents' Knowledge on Policies in Availing of Micro Financing

The respondents were knowledgeable with overall means of 2.50 (both rice & corn), 2.38 (Ampalya) and 2.68 (Eggplant) about most of the micro financing policies especially on loan applicants' attendance to enterprise development seminar imposed by their respective cooperative before they can avail of the micro financing (Table2).

Attendance to enterprise development seminar is very important to give them managerial and financial capabilities to run their project productively and find market opportunities to gain substantial income (Fajardo, 1984 p. 36).

On the other hand, respondents of ampalaya production were less knowledgeable. The lower knowledge of the beneficiaries of ampalaya production implies that their organization had less emphasis on one of the cooperative principles that is continuing membership education as lifeblood of the cooperative (Garcia and Guanzon, 2004 p104).

Table 2 Farmer-beneficiaries' mean knowledge on the process of availing micro financing loan for crop production

Loan Policies	Farmers' Crop Production			
	Hybrid Rice	Hybrid Corn	Ampalaya	Eggplant
Pre-loan Policies	2.4	2.4	2.4	2.7
Loan approval policies	2.5	2.5	2.4	2.7
Post loan policies	2.6	2.6	2.4	2.7
Overall Mean Knowledge	2.5	2.5	2.4	2.7

Legend:	Mean Scale	Description
3	2.5-3.00	Knowledgeable
2	1.50-2.49	Less knowledgeable
1	1.00-1.49	Not knowledgeable

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On adoption of production technologies

All the farmer-respondents had a high adoption level of the four production technologies based on their knowledge of the cultural management of their crop. Their high adoption level can be attributed to the policies imposed by the cooperatives that applicants must attend technical training on crop productions before approval of their loan (Table 3).

This finding shows the usual pattern of the five processes of adoption as proposed by Rogers (1962 p 150) namely awareness, interest, evaluation, trial, and adoption. However, this is not always linear since according to Madigan (1967) not all pass through the five stages because farmers may skip or combine these based on habit or tradition. Furthermore, should the information come from an authoritative source, farmers tend to be more receptive and act unquestioningly upon receiving information.

Consequences of Micro-financing to Economic and Farming Practices

The farmer-beneficiaries increased their annual average income by 55%, average income per cropping by 45%, and 43 % On their amount spent for food.

Likewise, their Crop productivity improved specifically on the increase of their yield per cropping cycle from an average of 3,923 kg. to 4,667 kg. or an average of 29 44% increase (Table 4). The increase in the average yield appears lower than the normal potential yield per hectare for corn and rice because the average yield of ampalaya and eggplant were lumped in the computation thus, affected the overall average yield.

These findings conform to the report of Garcia, (2004 p 39) whereby micro financing could significantly increase the income of beneficiaries. This is further supported by the report of the Department of Agrarian Reform-Foreign Assisted Project Office (2002) which shows that credit availability would enable the beneficiaries to increase their capital buildup. The increase in income of the beneficiaries can be attributed to the use of borrowed money for production.

Finally, micro financing enabled them to improve their farm productivity as evident in the increase of their average production (Table 4). This finding supports the assertions of Lewis (1960) as cited by Todaro (2000 p 191) that there isa significant relationship between economic growth and funds for servitude.

Table 3. Summary of the respondents' level of knowledge on production technologies based on the adoption process

Adoption Process	Hybrid Rice		Hybrid Corn		Ampalaya		Eggplant	
	Grand mean	Remarks	Grand Mean	Remarks	Grand Mean	Remarks	Grand Mean	Remarks
Awareness	3.0	High	2.9	High	2.9	High	2.8	High
Interest	2.9	High	2.9	High	3.0	High	3.0	High
Evaluation	2.8	High	2.8	High	2.8	High	2.7	High
Trial	2.9	High	2.9	High	2.8	High	2.6	High
Adoption	2.9	High	2.6	High	2.1	Moderate	2.7	High
Overall mean	**2.9**	**High**	**2.8**	**High**	**2.9**	**High**	**2.8**	**High**

Legend:
1.00 – 1.69 Low
1.70 – 2.29 Moderate
2.30 – 3.00 High

Table 4.0 Consequences of Micro Financing Program to economic and farming practices

Economic Parameter	Micro-financed Crop Production												Grand Mean Before	Grand Mean after	OA % Increase
	Hybrid rice			Hybrid corn			Ampalaya			Eggplant					
	Before	After	Increase	Before	After	Increase	Before	After	Increase	Before	After	Increase			
	Mean	Mean	%	Mean	Mean	%	Mean	Mean	%	Mean	Mean	%			
Annual Income	33,150	72,500	54.27	42,150	95.45	55.84	30,000	62,350	51.88	21,550	50,300	57.15	31,712	70,150	55
Income Farm per cropping	12,000	19,000	36.84	12,000	18,000	33.33	6,750	14,750	54.23	6,250	15,900	60.69	9,250	16,912.50	45
Amount spent for food per month	900	1,140	21.05	900	1,065	15.49	650	1,150	43.47	575	975	41.02	756.25	1082.50	43
Crop Productivity															
Yield per cropping cycle(rice,corn); per harvest (ampalaya, eggplant)	5,200	7,600	31.57	7,300	11,000	50.68	31.70	35	9.42	22.1	34.6	36.12	3,923	4,667	29.44

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Knowledge on Micro Financing policies versus Adoption of Technologies

There were significant relationships between level of adopting hybrid rice production technologies and beneficiaries know*edge on filling up standard loan applications (PV=0.031) giving of capital share prior to loan approval. provision of technical assistance (PV=0.031), setting a specific period of repayment (PV=0.031). and imposition of penalty in case borrower will tail to pay at the specified period of payment (PV=0.031) These results mean that the policies catalyzed the beneficiary's adoption of the technologies in hybrid rice production (Table 5.1)

In hybrid corn production. it was only the policy on giving penalty for failure to pay that was found to have significant relationship with adoption level (PV=05), NO significant relationship was obtained between knowledge and adoption level in ampalaya production technologies (Table 5.1).

On eggplant production. Table 5.2 reveals that there was a significant relationship between adoption of respondents and the following: preorientation seminar (PV=.002), seminar on enterprise development (PV.002). and setting a specific system of farming (PV=0.031)

The above findings re-affirm the experiences of DAR-FARO (2002) that seminars and trainings are important preconditions among beneficiaries before they can avail of credit which resulted in their adoption of farming technologies and eventually increasing the farm productivity. The absence of stiff penalties in case of failure to pay is one of the reasons for poor repayment (Lirio, 2002)

Table 5.1 Chi-Square test between adoption of hybrid rice and hybrid corn technologies and micro-finance policies

Statements	Hybrid Rice		Hybrid Corn	
	CV	P V	CV	PV
Pre-loan Policies				
1. Loan orientation seminar	7.33	0.119ns	0.635	0.728ns
2. Seminars on values formation	2.857	0.240ns	0.023	0.708ns
3.Seminar on enterprise development	2.857	0.240ns	0.023	0.708ns
4. Trained on financial management	2.857	0.240ns	0.023	0.708
5. Technical training on crop production	0.741	0.690ns	2.593	0.300ns
Loan Application and Approval Policies				
1. Filled up standard loan applications	10.625	0.031*	2.857	0.240ns
2. Required collateral	4.444	0.349ns	3.651	0.161ns
3. Required to submit crop production proposals	6.667	0.155ns	1.905	0.386ns
4. Gave capital share before approving loan	10.625	0.031*	2.857	0.240ns
5. Inspected farm before approving loan	6.190	0.185ns	3.537	0.171ns

Table 5.1 Chi-Square test between adoption of hybrid rice ...

Statements	Hybrid Rice		Hybrid Corn	
	CV	P V	CV	PV
Post Loan Policies				
1. Cooperative closely monitored the farm	4.722	0.317ns	2.857	0.240ns
2. Cooperative provided technical assistance	10.625	0.031*	3.651	0.161ns
3. Cooperative set specific system of farming	4.722	0.317ns	3.537	0.171ns
4.Cooperative set a specific period of repayment	10.625	0.031*	2.857	0.240ns
5. Penalties imposed in case failure to pay specified period of repayment	10.357	0.035*	5.918	0.05*

Table 5.2 Chi-Square test between adoption of ampalaya and eggplant technologies and micro-inance policies

Statements	Ampalaya		Eggplant	
	CV	P V	CV	PV
Pre-loan Policies				
1. Loan orientation seminar	10.00	0265ns	10.00	0.002**
2. Seminars on values formation	17.50	0.354ns	0.741	0.389ns
3.Seminar on enterprise development	20.00	0.220ns	10.00	0.002**
4. Trained on financial management	20.00	0.220ns		
5. Technical training on crop production	10.00	0.265ns		
Loan Application and Approval Policies				
1. Filled up standard loan applications	10.00	0.265ns		
2. Required collateral	10.00	0.265ns		
3. Required to Submit crop production proposals	10.00	0.265ns	1.667	0.435ns
4. Gave capital share before approving loan	20.00	0.220ns		
5. Inspected Farm before approving loan	10.00	0.265ns		
Post Loan Policies				
1. Cooperative closely monitored the farm	10.00	0.265ns		
2. Cooperative provided technical assistance	17.50	0.354ns		
3. Cooperative set specific system of farming	16.67	0.407ns	10.00	0.002**
4. Cooperative set a specific period of repayment	10.00	0.265ns		
5. Penalties imposed in case failure to pay specified period of repayment	10.00	0.265ns		

Legend: **-highly Significant
*-Significant
ns-Not Significant
CV-Chi-square Value
PV-Provability Value
Significance level: PV= less than .05

Conclusions

The respondents of hybrid rice. hybrid corn. and eggplant productions were more knowledgeable on the policies on micro-financing program than ampalaya production beneficiaries. Consequently, they have had high adoption on technologies of the four crops.

The Micro-financing improved some economic. and crop productivity of the respondents.

The hybrid rice, hybrid corn and eggplant beneficiaries' knowledge on the process of availing micro-financing influenced their adoption of production technologies on the crop they planted

Implication's respondents were the policies in the knowledge on availing of micro financing. Hence, their cooperatives imposed most of these policies especially those hybrid rice. hybrid corn, and eggplant farmers However, the ampalaya beneficiaries' low level of knowledge may indicate that only some policies were selectively imposed to them. Common policies given were the filling of standard form application, the giving Of capital share, ocular inspection, close monitoring of fie farm, setting of specific period Of repayment and giving Of penalties for those who fail to pay at the specified period of repayment.

The high adoption of technologies implies that micro-financing was effective in introducing technologies posed by Rogers (1962 p 150) still the prevalent pattern regarding the adoption of innovation.

Policies that were significantly related to respondents' adoption technologies imply that these policies serve as catalyst to their high level of adoption. However, in ampalaya production there was no policy that had a significant relationship to the respondents' adoption of technology. It could be because they were not influenced by the policies imposed but by factors like perceived attributes of the technologies.

Micro-financing can improve the economic, and farm productivity of farmers when package of interventions like technical and credit will be part of the services to the farmers through cooperatives.

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