# Assessment of Micro Credit and Revolving Fund Scheme of the FAO/Special Program for Food Security at Kadahathawewa Project Site in Kurunegala District

U.D.K.K.RANASINGHE[1], M.JOSEPH[2] and N.R.ABEYNAYAKE[1]

[1]Department of Agribusiness Management, Faculty of Agriculture and Plantation Management,
Wayamba University of Sri Lanka, Makandura, Gonawila (NWP).
[2]Food and Agriculture Organization (FAO), Special Program for Food Security (SPFS), Govijana Mandiraya,
Battaramulla, Sri Lanka.

## ABSTRACT

Agriculture is the most important and fundamental unit of the Sri Lankan economy. To move Sri Lanka towards self-sufficiency, productivity of the agriculture sector should be increased. Food and Agriculture Organization (FAO) has launched the Special Program for Food Security (SPFS) especially for rural farmers in order to achieve above objective. Micro credit programs were introduced to different secretariat divisions in Sri Lanka. In this study the Maho secretariat division in Kurunegala district was selected to evaluate the effectiveness of the Micro credit/Revolving fund scheme. 45 farmers were interviewed from the total of 80 farmers who obtained credits from the scheme for the study.

The survey results indicate that 55%, 38% and 7% of the respondents are involved in crop base, animal base and aquaculture sector respectively in the study area and all the sectors are eligible for the credit scheme. Credits were highly demanded from farmers who cultivated paddy and low demand from the other farmers due to lack of marketing facilities for their products. The results of regression analysis revealed that the amount of credit borrowed is the only factor that effect to the farmers income out of education level Age & Sex. According to the regression coefficients, Rs. 1000 of credit help to uplift the income of farmers by Rs. 748. More than 95% respondents from crop base sector and 58% from animal base sector have obtained credit for the purpose of improving their existing enterprises. Number of transactions with credit scheme compared to the other banks & efficiency of credit scheme in approving a loan are the factors, which are highly appreciated by farmers in this credit scheme.

KEYWORDS: Micro credit, Revolving fund, effectiveness, Special program for Food Security (SPFS)

## INTRODUCTION

Agriculture is an important sector in Sri Lankan economy. It contributes 17.90% to the Gross Domestic Product (GDP) in year 2004 (Anon, 2004b) and includes almost 36% of the country's labour force. 75% of the country's population is living in rural areas where the agriculture sector predominates. Therefore Sri Lankan agriculture sector is highly sensitive to any changes of rural community and it indirectly effects to Sri Lankan economy (FAO, 2005).

Micro credit in Sri Lanka is both a traditional community activity as well as a more formal sector activity. It is practiced by a broad range of different sectors such as government, co-operatives to Non Governmental Organizations (NGOs). Micro credit is an alternative way to acquire capital for those having lack of financial support. It helps to remove financial constraints of poor farmers and accelerate the adoption of near technologies (Wijeratne, 2000).

There are several reasons which prevent small scale farmers reaching and obtaining credit facilities from formal sources. The major reason is being unfamiliar with officers and office procedures. High transaction costs and poor infrastructure also retard the access of small scale farmers to banks. Therefore it is necessary to encourage institutions to go to the villages or even individual farmers, to conduct meetings and discuss with small informal groups on different systems and transaction procedures. Adoption of new technology or use of modern inputs needs higher investments. But small scale farmers are not in a position to bear the higher expenses (Mohomed, 2000).

The Food and Agriculture Organization (FAO) of United Nations make all efforts to avoid hunger and specific attention is focused on developing rural areas. Special Program for Food Security (SPFS) has been introduced to the farmers to identify the reasons for the food insecurity in whole agriculture system. Special Program for Food Security aims to help those are living in developing countries, in particular the low income food deficit countries to improve their food security through rapid increases in food production and productivity, by reducing variability in food production on an economically and environmentally sustainable basis and by improving people's access to food production (SPFS, 2004).The Revolving fund has a reserve of money for granting loans for individual or groups. Revolving funds are often used in Sri Lanka to provide credit facilities for the purpose of buying food and productive inputs, to business and services in Agriculture, Livestock & Aquaculture. Apart from the financial support, depending on the needs of the target beneficiaries several demonstrations and training will be provided.

Micro credit and Revolving fund operates in several rural areas including 17 districts. Kurunegala district, which has larger extent of remote areas, has been selected as one of the 17 districts. In that area, large numbers of farmers are involved in farming activities. Incomes of the farmers mainly depend on their harvest and they are unable to invest money on their cultivation due to low income. Inadequate community participation in decision-making, shortage of water, lack of capital, high cost of production, poor extension services, low prices, poor marketing

arrangements, and poor quality seeds, less inputs and improved breeds are the significant constraints of small scale farmers (Sampath, 2001). In Kurunegala district Maho Divisional Secretariat has been selected and Kadahathawewa is the operating area of the Micro credit and Revolving fund project. This project was initiated with the purpose of providing both financial and technical support in overcoming these constraints.

Objectives of the study is to identify the main components followed by the FAO, econometric assessment for incremental income and the short-term effects of the Micro credit and Revolving fund, evaluating strength, weaknesses and opportunities of the scheme and propose recommendations.

## MATERIALS AND METHODS

The area of study is Kadahathawewa at Kurunegala district, which is in the intermediate zone and located in the Maho Divisional Secretariat. It is about 30 Km from Kurunegala to Kadahathawewa via Wariyapola. The area is predominantly rural and about 10 Km to away from the semi urban area Maho (Wijeratne, 2000). There are 252 families in this area and their main livelihood is farming. Duration of the study is from December 2004 to May 2005. Survey was conducted to gather the primary data from farmers using pre-tested questionnaire. From the total of 80 farmers, 45 farmers were interviewed by random selection in Grama Niladhari (GN) areas namely Mirihanpitigama, Palugaswewa and Walpaluwa. The information were gathered under several major areas, Composition, purpose & level of credit use, Respondents attitudes / perception towards the SPFS credit scheme, Revolving fund & repayment capacity and Constrains, strengths of the credit scheme. Graphical analysis and tabular analysis were used. In determining the contribution of major factors to the incremental income of farmers, econometric analysis was conducted. Fitted models were estimated by the Ordinary Lease Square model (OLS) using Statistical Analysis System (SAS) soft ware package. Stepwise procedures were carried out to select the best factors. The following model was fitted.

$$INC = f (Age, Sex, LOE, ACB)$$
Where,
INC = Incremental Income
LOE - Level of education
ACB - Amount of credit borrowed

To identify the borrower's attitudes towards the credit scheme & their perception about SPFS, different selected criteria were given to be ranked by the respondents. Finally rank was analyzed by using wilcoxon (Rank sums test).

## RESULTS AND DISCUSSION

### 1. Composition, Purpose & Level of Credit Use

The respondents were basically involved in 3 types of enterprises, crop based, animal based and aquaculture. Crop based cultivation comprises of paddy, vegetables and Other Field Crops (OFCs) while

Animal based industry comprises of cow and buffalo milk production, poultry, goat and pig rearing. According to the Figure 1, 55%, 38% & 7% respondents are involved in crop-based cultivation, animal based industry & aquaculture respectively. But some farmers are involving more than two industries. By considering that, more than 95% of the population is involving crop based industry.
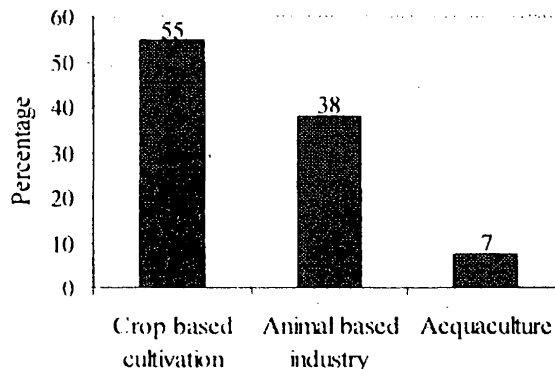


**Figure 1: Percentage of respondents involving different ventures**

Paddy is the major crop in the area where the survey was conducted. From the credit issued for paddy cultivation, 82% credit has been obtained by the respondents for purchasing inputs such as seeds, fertilizers & agrochemicals. Other than that considerable amount has been spent on labour wages & equipments too. Out of the credit amount issued for OFCs, respondents have obtained only 20%, especially for fruit cultivation (mango, banana). Credit has not been obtained for vegetable cultivation. Marketing problems and inefficient irrigation facilities have created a heavy risk in cultivating vegetables.

The respondents have borrowed loans mainly with aims of implementing the new farming system and improving the existing farm. The results of the study show that 95.5% the respondents have obtained credit for improving their existing crop and 4.5% for new crop implementation. In animal based industry it is 58% and 42% for improving the existing venture and implementing new enterprise respectively (Figure 2). Loans have been obtained to improve the existing enterprise of crop based cultivation. With this objective borrowers have used the credit for expansion of the enterprise, improving the efficiency and productivity level of the industry.
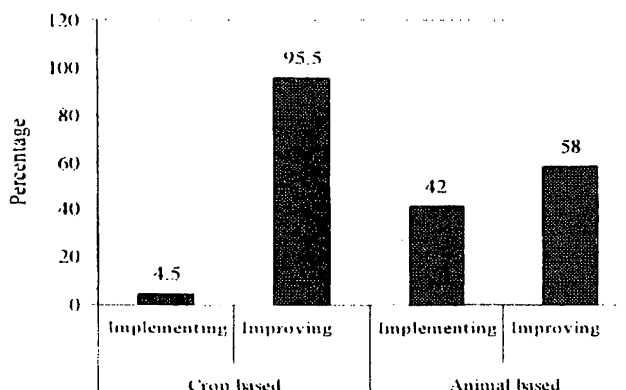


**Figure 2: Purpose of borrowing credit**

Table 1 represents the percentage contributions of the farmer's income from different types of crops before and after the credit scheme. It is interested to note that the contribution of paddy for income has declined by 3% after introducing the scheme while the contribution from OFCs has increased by 3%. This result revealed that the credit scheme had tend to diverse the crop cultivation.

**Table 1: Composition of total net income-Crop based cultivation**

| Crop category | Before project implementation (%) | After project implementation (%) |
|---|---|---|
| Paddy | 97.00 | 94.00 |
| OFCs | 2.60 | 5.40 |
| Vegetable | 0.40 | 0.60 |

Figure 3 shows the difference of the two income levels of the respondents before and after implementation of credit scheme.
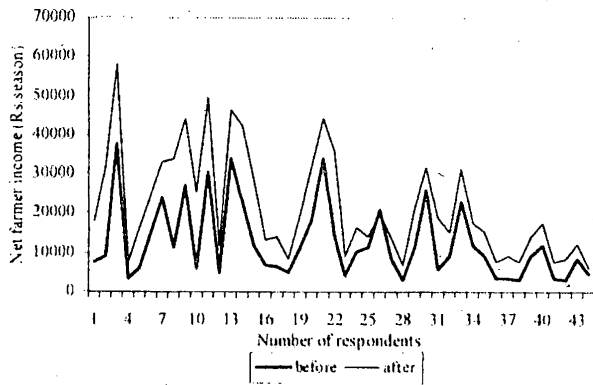


**Figure 3: Net Income of the paddy farmer before & after the project implementation**

Further it explains that the average net income of a farmer has changed from Rs.8750.00 acre/season to Rs.13250.00 before and after the credit scheme respectively. According to the above figure average incremental income was Rs.4500.00 acre/season. This indicates that the income is significantly increased after the credit scheme. The average incremental income is statistically higher according to the paired t-test (prob 0.0003). It clearly shows that all the respondents have benefited from the credit scheme by improving their income.
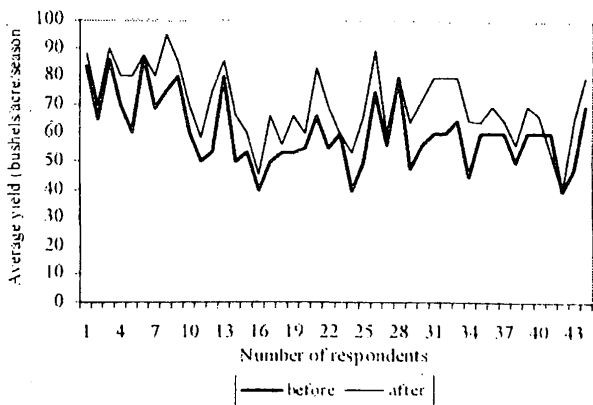


**Figure 4: Average yield of the paddy before & after the project implementation**

Figure 4 explains the changes of productivity after and before clearly. The average productivity of the paddy changed from 61.5 bushels/acre/season to 72.5 bushels/acre/season after the implementation of the credit scheme. The farmer productivity after the credit scheme is significantly higher than before productivity (paired t-test, prob 0.0001). This result shows that the credits help to improve productivity by improving inputs and other management practices. As mentioned above only 64% of respondents have obtained credit for animal based industries that consists cow and buffalo milk production. Credits are mainly used for purchasing cows and buffaloes, feeds & for some veterinary services required. Prior to project implementation, there was no significant amount of income earned from cow and buffalo milk production due to absence of proper management and milk collecting center. At present, average net income from a farmer cows per month is Rs. 6373.00 and from buffalo Rs.2479.00. The income earned from cow and buffalo is significantly different (pooled t-test, prob 0.0004). Net income gained from goat, poultry and pig rearing is relatively low (6250, 3010, 4250 Rs/Year) (figure 5) compared to buffalo and cow rearing. Project does not issue credits for poultry rearing; but they have introduced a tenure system.
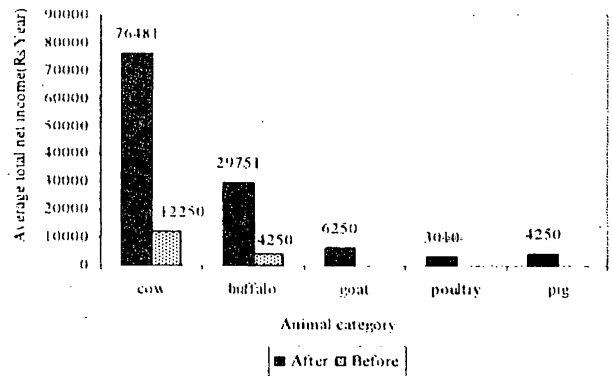


**Figure 5: Average total net income-Animal based industry**

To identify the factors affecting the incremental income, age, sex, level of education (LOE) & amount of credit borrowed (ACB) were used as explanatory variables. Age and education levels were used as categorical variables and amount of credit borrowed was used as continuous variable for the model.

**Table 2: Result of regression analysis**

| Variable | Estimate | Pr > |t| |
|---|---|---|
| Intercept | 12827 | 0.1125 |
| Age ┌ 20-35 years old | -336.8690 | 0.9515 |
| └ 36-50 years old | 4618.9080 | 0.2914 |
| Sex | 747.4813 | 0.8613 |
| LOE ┌ Primary (1-5) | -9842.6041 | 0.0951 |
| ┤ Secondary (6-10) | -10288 | 0.1017 |
| └ Up to O/L | -9439.3543 | 0.1174 |
| ACB | 1.7137 | <.0001 |
| $R^2 = 86.00$ | significant at 5% | |

The result of regression analysis shows that 86% of variation in incremental income can be explained by these sets of variables (Table 2). Further it reveals that amount of credit borrowed is the only factor, significantly affecting the incremental income. There is no relationship of age, sex & level of education in increasing income. Therefore linear regression is carried out to quantify the contribution from ACB.

$$INC = 6819.15 + 1.748\ ACB$$

$$R^2 = 83.81$$

According to the linear regression model, Rs.1000.00 credit amount has resulted a Rs.748.00 increment in the net income.

## 2. Respondents Attitudes / Perception Towards the SPFS Credit Scheme

Attitude of respondents towards SPFS credit scheme was tested based on five aspects.

a. Number of transactions with credit scheme compared to the other banks
b. Efficiency of credit scheme in approving a loan
c. Simplification of the procedure in obtaining a loan
d. Easiness in obtaining loans due to close proximity
e. Satisfaction about amount, interest rate and duration to repay

**Table 3: Result of wilcoxon analysis**

| Factors | Mean of scores | Rank |
|---------|---------------|------|
| a | 61.788889 | 1 |
| b | 111.022222 | 2 |
| c | 135.188889 | 4 |
| d | 137.088889 | 5 |
| e | 119.911111 | 3 |

$$Pr > Chi-Square \quad <.0001$$

According to the attitudes of the respondents highest perception about the credit scheme is number of transactions with credit scheme compared to the other banks & efficiency of credit scheme in approving a loan. The simple, attractive, convenience procedures followed by SPFS credit scheme compare to other commercial banks was the major factor that attracts the respondents around this credit scheme.

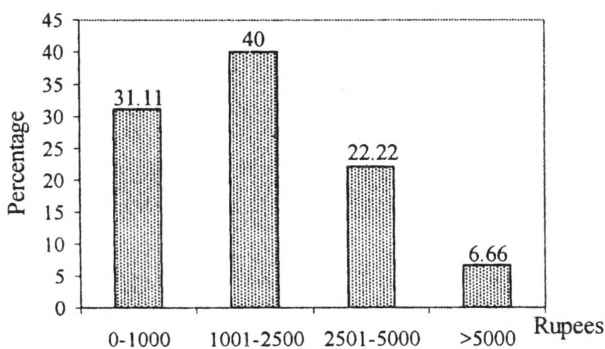## 3. Revolving Fund and Repayment Capacity



**Figure 6: Revolving funds of households surveyed**

Different respondents have shown different savings behaviors. Among them highest number of respondents have saved between Rs.1001-2500, average amount is Rs.1850.00. Only 6.66% respondents have saved more than Rs.5000.00 (Figure 6). It is interest to note that, the respondents who have saved more than Rs.5000.00, engaged in milk production. It reveals that the income of cow and buffalo rearing farmers earn more money than the farmer engage in traditional paddy farming.

There is a remarkable loan recovery percentage in this area and it is over 82%. Reasons behind this recovery payment are less interest rate, less payback period and effectiveness of the credit scheme.

## 4. Constrains, Strengths & Suggestions of the Credit Scheme

Major constraints were ranked according to the priority.

i. Absence of regular water supply (agro wells)
ii. Insufficient credit amount allocated per animal
iii. Insufficient credit amount (Rs.5000.00) for paddy cultivation
iv. Requirement of permanents deposit for obtaining credit

Major strengths were ranked according to the priority.

i. Providing consultancy services & training programs
ii. Establishment of milk collecting center
iii. Reduction of cost of production by introducing organic fertilizer
iv. Provide seeds and fertilizers for affordable prices
v. Strength and interpersonal relationship between farmers and relevant organizations

According to farmers point of view followings are the areas to be improved in the credit scheme.

i. Increment of credit amount up to Rs.7500 according to the farmer requirement
ii. Provide training program for Vegetable and OFCs
iii. Increment of the payback period for project loans
iv. Introduction of more value added products for different industries (rice, curd, milk toffees)
v. Introduction of different credit scheme based on land extend

## CONCLUSIONS

The results of the study revealed that the farmers were basically involved in crop-based cultivation. And most of the respondents have obtained credit for the purpose of improving existing enterprises. Further results revealed that there is a significant effect of the credit scheme in increasing the incremental income of the enterprises. More importantly the credit scheme tends to diversify the farmers income source from paddy cultivation to Other Field Crops (OFCs). The result reveals that amount of credit borrowed is the only factor, significantly

affecting the incremental income. Rs.1000.00 credit amount has resulted Rs.748.00 increment in the net income. It shows the effectiveness of the SPFS credit scheme. Number of transactions with credit scheme compared to the other banks & efficiency of credit scheme in approving a loan were highly appreciated by the farmers. Finally it can be concluded as micro credit is the very important aid to uplift the rural farmers' income significantly.

## ACKNOWLEDGEMENTS

## REFERENCES

Anon, (2004 b). Annual Report 2004. Colombo: Central Bank of Sri Lanka; pp.9.

Anon, (2004). Booklet, Aruna Farmers Organization (AFO) and Special Program for Food Security (SPFS), Nagollagama; pp. 4 – 6.

Anon, (2003). Annual Report 2003, Colombo: Micro Finance Program Implemented by CBSL; pp. 34-36.

Food and Agriculture Organization (FAO), (2005) http://www.fao.org/spfs/srilanka/highlights_en.asp (accessed on 05 June 2005).

Mohomed, M.H (2000). Factors affecting credit use in Kurunegala District. Department of Agriculture Economics, University of Peradeniya; pp. 47.

SAS (1999). SAS/ETS user guide for personnel computers, Version 6, 4th ed. Carry, NC USA, SAS Institute Inc.

Sampath, D.A.J (2001), An evaluation of credit defaults of paddy cultivation in Kurunegala District, Department of Agriculture economics, University of Peradeniya; pp 23-24.

Special Program for Food Security (SPFS), (2005) http://www.fao.org/documents/showcdr.asp (accessed on 05 June 2005).

Wijeratne, W.M.D.B (2000). Evaluation of a loan scheme of small-scale paddy farmers, Department of Agriculture Economics, University of Peradeniya; pp.14, 18.