





Is Microcredit Enhancing Ecosystem Payments and Environmental Services among Rural Farmers in Sudan? **An Applied Dynamic Modeling Approach** 

Abdelateif. H. Ibrahim<sup>1</sup>, Sayed Fadul Elmola<sup>2</sup>

<sup>1</sup> University of Kordofan, Dept. of Agric-Economics and Rural Development, El-Obeid, Sudan, E-mail: lateif73@hotmail.com <sup>2</sup> University of Western Kordofan, Faculty of Economics, Enuhud, Sudan. Email: zareba692000@yahoo.com

## Introduction

The limited knowledge on ecosystem payments and importance of natural resources conservation is reason why poverty reduction and environmental sustainably has not yet achieved in Sudan. It even sometimes creates conflicts between short term development and income generation needs which microcredit might fund (SHARDUL and CARRARO, 2010). Recent study revealed that, there is strong linkages between employing microcredit for ecosystem services and ability of low income group to diversify their assets and coping strategies (HAMMILL et al, 2008). Within the microcredit sector, the increasing emphasis on responsible finance has added environmental impact to the factors considered as measures of success for a microcredit institution. It is therefore, believed that investing in environment through microcredit services will continue to be seen as a potential option for improving the environmental services and reducing poverty.



• To identify the potential impact of socio-economic and environmental factors that hinder investment in ecosystem.

• To simulate how farmers would choose to use their loans

if they could use them on any ecosystem services.

# Results





# Database

- Three localities in North Kordofan State, Central-west of Sudan;
- 300 of farm households were selected;
- Multi-stage stratified random sampling technique were used;
- Field survey conducted in summer, 2012.





### Willing to pay for ecosystem services

79

Willing to be trained in ecosystem businesses

75

Fig 1: Tendency of household to pay for ecosystem services

### **Analytical tools**

The analysis in the research was performed in a three-stage methodological approach:

- Descriptive statistical analysis
- Bivariate model
- Dynamic non-separable household model

# Conclusions

• Households had a tendency to pay for environmental services and more likely to be trained in business related to environmental issues.

• Through the provision of microcredit poor could develop alternate livelihood opportunities, build assets and spread environmental risks.



- There are a strong interaction effect between loan use and ecosystem payments variables.
- Households are able to invest in ecosystem payments and • environmental sustainability by being able to access sufficient loans.



**Fig 3: Factors that affecting investment in ecosystem services** 

# Recommendation

In order for ecosystem payments to be improved, the agricultural investment should be improved, particularly the adoption of efficient technology and commercialization of farm business. This could be possible through increasing the loan volume and providing "credit plus" services in remote areas.

# References

□ HAMMILL, A. MATTHEW, R. and MCCARTER, E. (2008). Microfinance and Climate Change. IDS Bulletin Volume 39 Number 4. Institute of Development Studies.

□ SHARDUL, A. and CARRARO, M. (2010) Assessing the Role of Microfinance in Fostering Adaptation to Climate Change. OECD Environmental Working Paper No. 15, 2010, OECD publishing, © OECD.