Bicol Presentation

Philippine Landcare After Nine Years: Its Impact on Communities, Farming Household, and the local Environment in Mindanao, Philippines

Abstract

This paper reviews the impacts of the Landcare Program on the community, farming household and local environment (particularly soil conservation and management) in the three sites in Mindanao: Claveria in Misamis Oriental; Lantapan in Bukidnon; and Ned, Lake Sebu in South Cotabato. This paper draws mainly from a review and synthesis of various studies conducted throughout the Landcare period from 1996-2004 and focuses on the impacts at both micro (household, plot or farm) and meso (community, institutional partnerships) levels. The center of the study is the Landcare Approach which consists basically of two components: conservation farming technologies and Landcare processes and institutions. Significant impacts are primarily in the field of improving livelihood options, human and social capital, environmental governance, and access to livelihood resources such as financial, physical and technical assistance through fostering and enhancing bonding and bridging social capital.

I. Introduction

The Philippines has been known for the abundance of its natural resources. The country has one of the most diverse selection of flora and fauna in the world. However, a study by Rola (2000) show that there are only 8.2 million hectare arable and permanent croplands in the Philippines. The constraint-free portion is 25.1 percent of the total country area. Soil problems are found in the residuals of almost 74.9 percent. The distressing difficulties are found on the Philippine uplands as it experiences severe soil loss. Coxhead and Shively (cited by Rola 2000), noted that 50 percent of the soil erosion experience is coming from Mindanao. Farmers are under financial and social stress, jointly with inappropriate technologies, have hastened depletion and degradation of natural resources—soil, water, air and biodiversity. (Campbell, 1994)

Other areas of concern are: Increasing upland population (population pressure), land use, increasing environmental degradation, sustainability (economic and environment). There have been initiatives to mitigate the environmental and socio-economic problems in the Uplands. One of which is thru Landcare.

II. Landcare

Landcare is a strategy involving technologies and social processes/institutions for developing a collective action at the local level to deal with problems of agricultural land degradation. By definition:

> ***"Landcare is a movement of farmer-led organizations supported by the local government that share knowledge about sustainable and profitable on sloping lands while conserving natural resources. The landcare approach has developed into a dynamic voluntary movement called the Landcare movement."***
> **(Mercado et. al 2000)**

Brief History

The origin of Philippine Landcare traces back to 1984 when the International Rice research Institute (IRRI) started working on upland rice farming system (Garrity, 2004) focusing on testing rotations and agroforestry systems, identifying techniques that could improve upland farming, increase income and protect the sloping lands from soil degradation. In 1992, Garrity joined the International Centre for Research in Agroforestry (ICRAF) and IRRI reduced its programs leaving the ICRAF Southeast Asia to continue the research on agroforestry-based farming system and soil conservation. In 1995, these technologies were identified to be ready for scaling up to other areas of the Philippines: from Claveria to Lantapan to Ned, Lake Sebu. Scaling up was done through the assistance primarily of the Australian Centre for International Agricultural Research (ACIAR). Later on, the Landcare program was expanded to some areas in Bohol and Leyte.

There are several technologies identified to be effective in the soil conservation that were implemented in the different Landcare sites to enhance production and natural resources: SALT (I to IV), NVS (Simplified hedgerow cropping system), Ridge tillage, Trash bundling and rock walling but, NVS is the most dominant practice (Catacutan, 2004)

Several technologies were adopted by the CLCA. soil and water conservation, seed technology and nursery mgt., agroforestry technologies, and composting. Several services and assistance is offered by ICRAF to the farmers in Claveria: technical assistance (SWC, Agroforestry, NRM, Seed technology), cross site/ field visits, trainings, institutional facilitation, group formation, farm-based research and networking.

Landcare Sites

Three landcare sites in the Southern Philippines are focused on in this study. Claveria, Misamis Oriental, Lantapan, Bukidnon and Baranggay Ned in Lake Sebu, South Cotabato. A map showing the location of these sites are shown in figure 1.

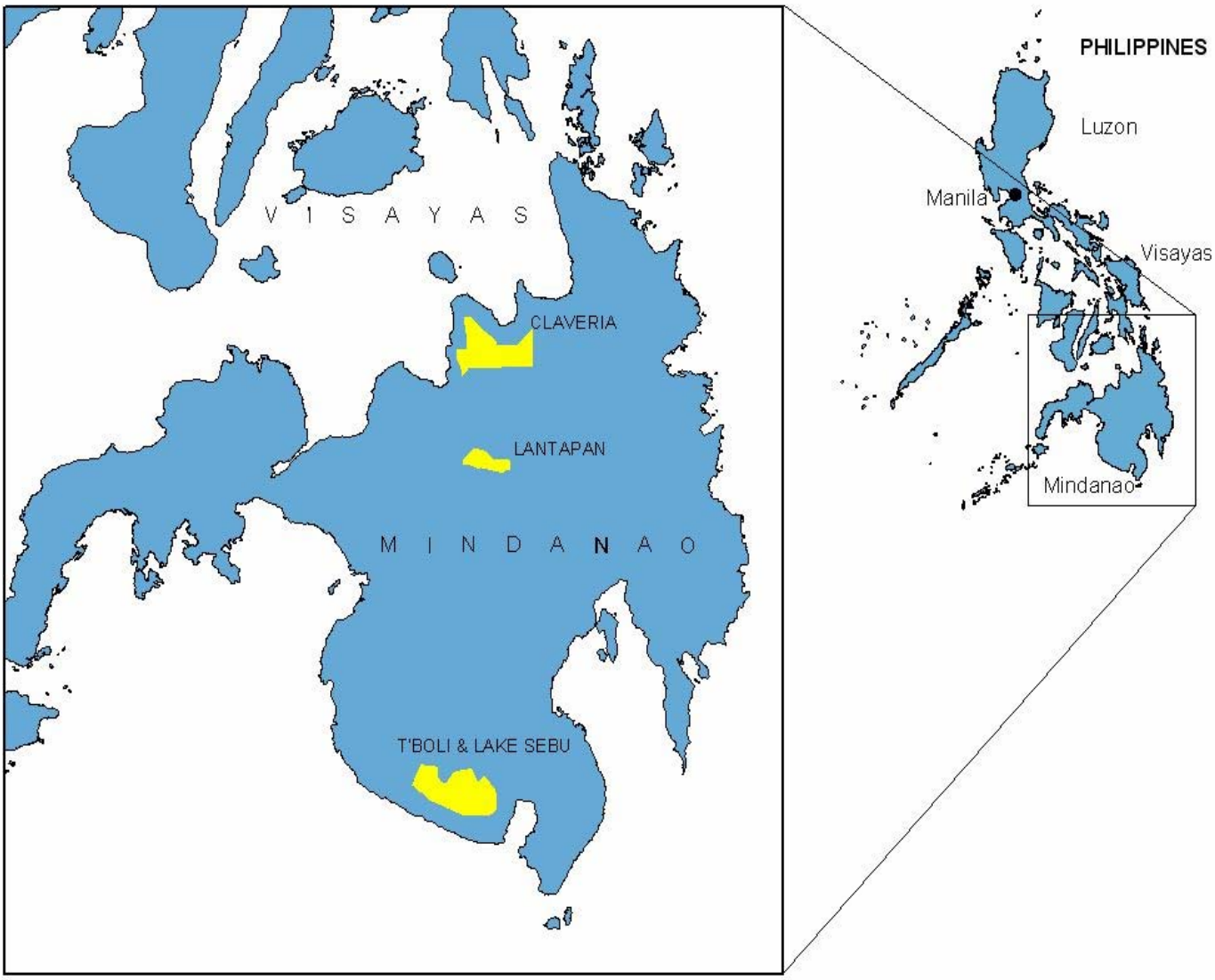

Figure 1. Landcare sites in the Philippines: Claveria, Lantapan and Lake Sebu

(Courtesy of Paul Soliman)

Landcare Triadic Framework

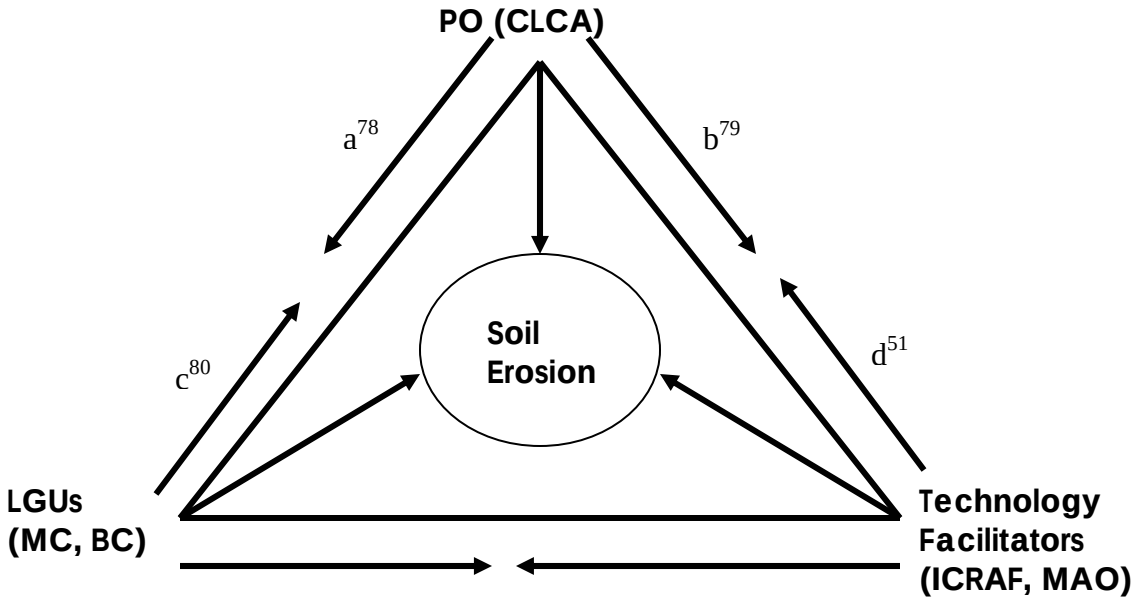

Figure 2. The Landcare Triadic Collaboration Process (Sabio, 2002)

Catacutan (2004) explained the history of Landcare in Claveria. The Landcare approach is composed of three key actors: the Claveria Landcare Association (CLCA), World Agroforestry Centre (ICRAF) and the LGU. These actors work for the promotion on the adoption of the Natural Vegetative Filter Strips (NVS).The conceptualization of the "triadic partnership" or the "landcare triangle" (Figure 2), the three-way partnership was set by Agustin Arcenas and Dennis Garrity. The key activities which are considered as the "cornerstones" of the landcare approach involved were: (1) promotion of appropriate technologies; (2) institution building through formation of landcare groups; and (3) building partnerships amongst landcare groups, LGU officials, ICRAF and other agencies.

III. Objectives

The general objective of the study is to identify the impact of Landcare on the communities, farming households, and the local environment in Mindanao, Philippines.

Specifically, the study would like to look on the impacts on the following:

1. level of adoption
2. social capital
3. environment
4. livelihood and economic activities

IV. Methodology

The study is limited to a review of literatures on studies conducted about Landcare focusing more on the 3 Landcare sites in Southern Philippines: Claveria, Misamis Oriental; Ned, Lake Sebu and Lantapan, Bukidnon. Basically, it is a synthesis of existing literature of Landcare in the Philippines.

V. Framework

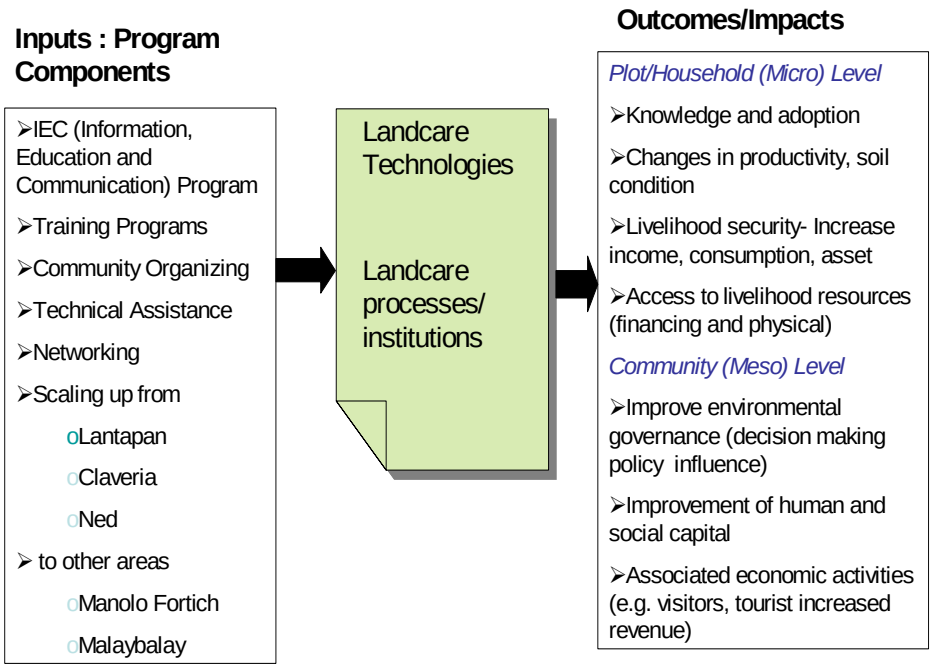

Figure 3. Framework on the summary of impacts of Landcare Program in the Philippines

Above is the Framework for the study. To determine the impacts of the Landcare program in the Philippines on the productivity of the farms and plots as well as to the overall well being of households and communities the following areas will be explored:

1. *At the community level (meso level)*: the social capital, adoption and effectiveness of the Landcare Approach
2. *At the plot and household or at the micro level*: productivity of crops, livestock and trees; conservation / enrichment of land and other natural resources, income, consumption and expenditure and assets. And
3. *At the household level*: knowledge level, understanding of problems, options, opportunities and management, and empowerment and adoption of knowledge.

VI. Results

Impacts of Landcare

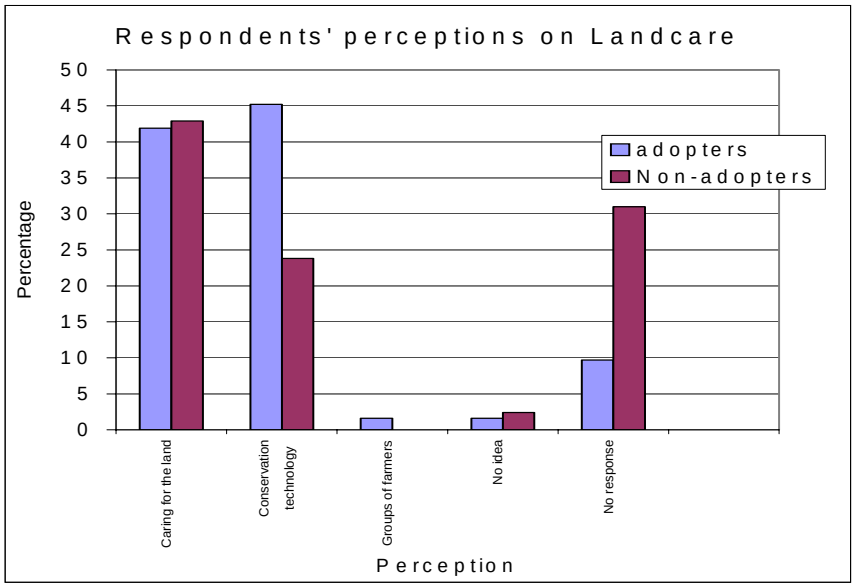

Figure 4. Respondents' perceptions on Landcare.

A household survey was conducted in Barangay Sungco in August 2001 with a total sample population of 104 households from all sitios using a stratified sampling method. The survey results showed that 62 households or 60% have adopted contour farming measures (NVS, hedgerow, or other contour barriers) on their farm while there are 42 households or 40% that have not adopted any of the farming measures that the Landcare offers. Most of the farmers see Landcare technologies as an element that cares for their land (42.3%) and a conservation technology (36.5%) (Figure 4).

Level of adoption

Table 1. **Landcare membership and adoption category, 2001**
(Data Source: Cramb and Culasero 2003, Cramb, Culasero and Catacutan, 2003)

	Adopters (n=106 for Ned; n=62 for Lantapan)	Non-adopters (n=207 for Ned; n=42 for Lantapan)	Total (n=313 for Ned; n=104 for Lantapan)
Landcare members (%) in Ned	36.8	13.0	21.1
Landcare members (%) in Lantapan	32.3	11.9	24
Non Landcare members (%) in Ned	63.2	87.0	78.9
Non Landcare members (%) in Lantapan	67.7	88.1	76

Household survey in 2001 was conducted in Ned and Lantapan among farming. Of the total respondents for Ned (n=313), 21.1% were Landcare members. In Lantapan, of the total respondents of 104 (n=104), 24% were Landcare members. Records showed that 36.8% of adopters were Landcare members, compared with 13 percent of non-adopters The same trend was observed in Lantapan. Thirty-two (32.3) percent of the adopters are Landcare members while only 11.9% are non-adopters. Of the total

numbers of Landcare members interviewed in Barangay Ned (21.1% or 66), about 59% or 39 members were adopters of some forms of conservation farming. Lantapan yielded a more positive relationship. Of the total number of Landcare members interviewed (25), about 20 of them or 80% are adopters.

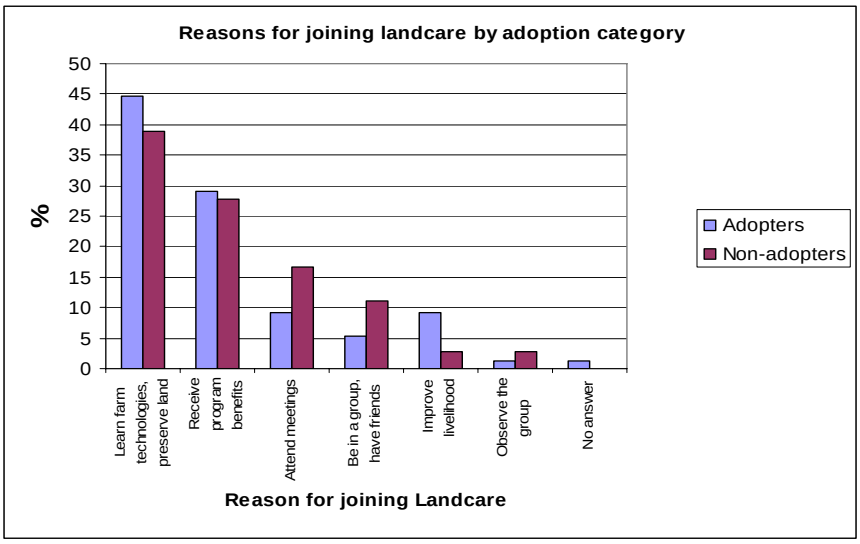

Figure 5. Reason for joining landcare by adoption category

Under adoption category, the main reasons in joining Landcare are: they are learning farm technologies and preserving land (34 of the respondents or 44.7%); they are receiving program benefits (22 of the respondents or 29%); attendance to meetings (7 of the respondents or 9.2%); and improvement in livelihoods (7 of the respondents or 9.2%) (Figure 5).

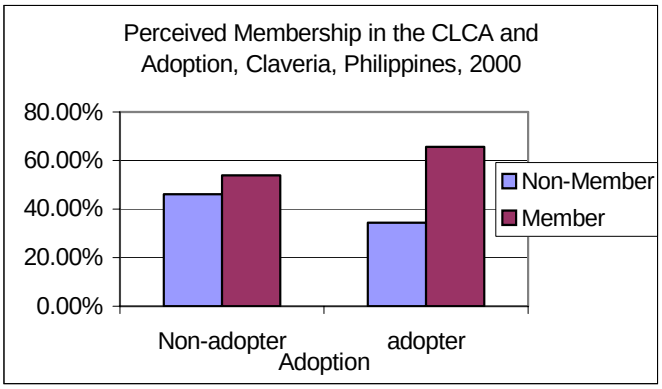

Figure 6. Perceived Membership in the CLCA and Adoption, Claveria, Philippines, 2000.

... Claveria, Misamis Oriental with 274 randomly-selected farmers from 45 sitios. Fifty-eight percent (58.8%) of the respondents were Landcare members while 41.2% were non-Landcare members.....In terms of adoption, the adopters are mostly Landcare members (60%) while there are 40% non Landcare members-adopters (Figure 6).

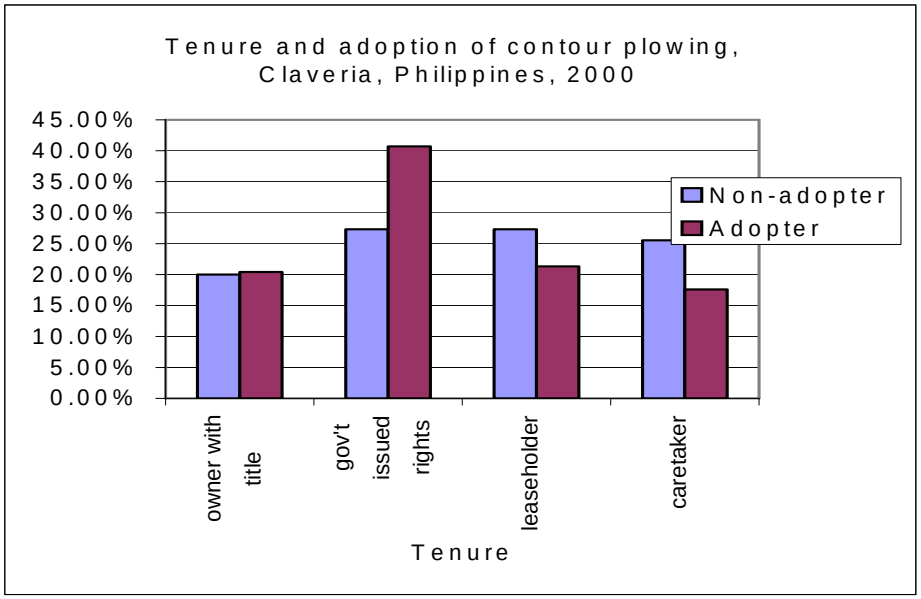

Figure 7. Tenure and adoption of contour plowing, Claveria, Philippines, 2000.

Tenure status according to the findings has a significant relationship with the farmers' decision to adopt. For the highest rank of adopters, farmers who are tilling land under the Comprehensive Agrarian reform Program has 40 percent compared to the non-adopters having 27.3 percent. The adopters who have their own land have almost of the same percentage of those who do not adopt. Other factors such as being leaseholder and caretaker contributes much to non-adoption

Benefits on Joining Landcare

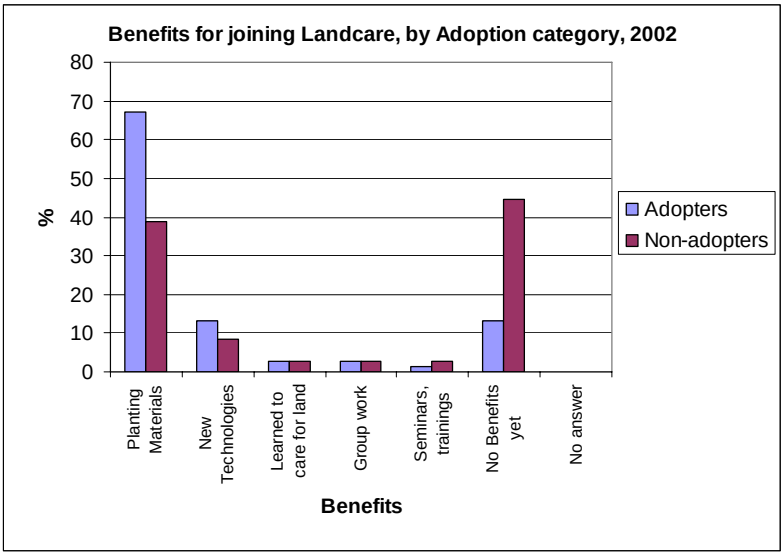

Figure 8. Benefits for joining Landcare, by Adoption category, 2002.

Respondents identified some benefits for joining a Landcare group. These include access to planting materials, new technologies, learned to care for their land and group work (Figure 8). The survey results seems to suggest that seminar and training programs (1.3%), under adoption category, contributes little to Landcare membership.

Social capital

The farmer's experience..... *"Land is like an animal that you need to take good care of because it will then give you a good response. In the same way, soil will give back good crops if you take care of it. Landcare is also about organizing farmers to have a common voice that can easily be heard by government officials and politicians."*

This is how Orlando Berdin defines Landcare. Orlando is a farmer and member of Kibang Purok 2 Landcare Group, Barangay Ned, Municipality of Lake Sebu, Southern Mindanao. He has been a pioneer of Ned Landcare Association on 1999. Landcare have provided him several farming techniques such as contour ploughing, zero tillage, and many more. He has learned how to protect his soil from erosion and retains its fertility.

These have did good to his land as it provides evidence of soil preservation. His farm has soil easier to plough and erosion have been reduced and above he has created beautiful terraces. Landcare has provided them partnership as well. Trainings on seed production of different programs and Companies have benefited them. From production Landcare partnership explores the needs for knowledge in marketing and different linkages on varying financial institutions. Trainings on machineries and other development programs are also acquired through this. (Metcalf, 2004)

Garrity (2004) explained that Landcare approach have made the local communities to organize where they have the opportunity to discuss agricultural problems with the public sector institutions. Landcare groups are marked in the community as being voluntary , self-governing, and focused on the problem-solving resources. Village organizations have been formed to share knowledge of the NVS and other Agroforestry practices. This leads to expansion of groups up to the Northern and Central Mindanao municipalities. Further this result to dynamic movement. The LGUs were convinced to help the groups because they are impressed. At present, the LGUs show their supports through financial and active involvements. Remarkably, on 1999, passing of legislation in Claveria municipality had been made. The legislation made it mandatory to establish contour buffer strips on sloping fields of Claveria. Landcare group then have been formalized. They have gained the attention of the national government as well. Landcare as a foundation had been the basis of national watershed management strategies. The aim is to build an effective community-based approach to sustainable agriculture and natural resource management. Landacre groups are assisted by the local governments thru budgetary allocations and solid political support.

Environment

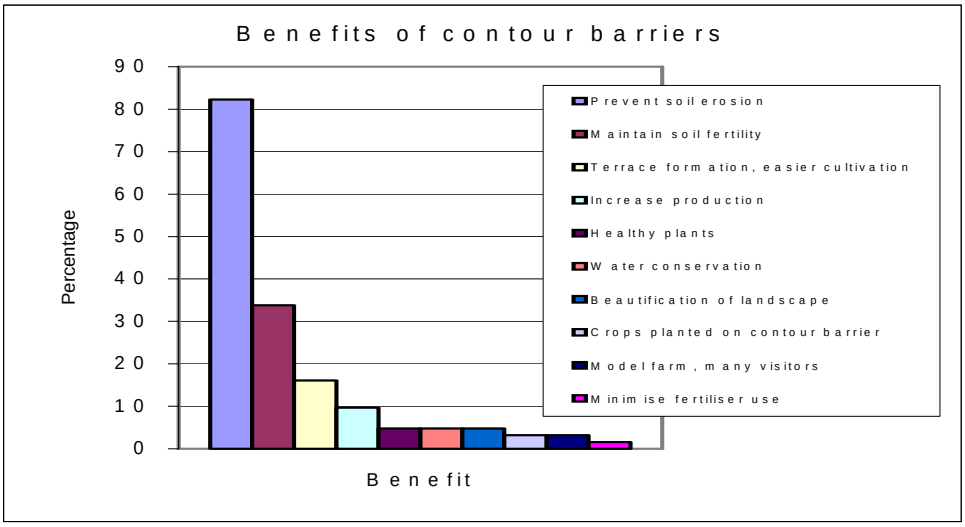

Figure 9. Benefits of contour barriers

Farmers have varied ideas about the benefits of adopting contour barriers (Figure 6). These are: prevents soil erosion (82.3%); maintains soil fertility (33.8%); creates terrace formation and easier cultivation (16.1%); increases crop production (9.7%); healthy plants (4.8%); water conservation (4.8%); beautification of landscape (4.8%); for the crops that are planted on contour barrier (3.2%); gives them a model farm then further attracts many visitors (3.2%) and minimizes fertilizer use (1.6%).

Livelihood and economic activities

"With Landcare, …, we don't need money to start up our activities. We are able to produce our own seedlings and collect our own seeds for sale, providing a steady income."

A testimonial of Ms. Restie Gamayon on how her involvements in Landcare have lent a hand on improving her small business. She is a farmer for 22 years of Barangay Victory, Lantapan, Central Mindanao. Formerly, Restie is the Secretary of Lantapan Landcare Association. Her nursery business is doing well and has helped her income. She has considered another option from just merely planting maize that involves a lot of capital to nursery establishment. The appeal of joining Landcare came from her interest in using trees on farm, nursery management and soil and water conservation. Landcare taught her

the proper land management, soil and water conservation and agroforestry. She has been aware of the current scenario of the trees in the Philippines. For her Landcare have offered simple solutions so as how to help our environment. (Metcalf 2004)

Bertomeu (2004), examined the private profitability of small holder timber-based Agroforestry systems and the alternative maize monocropping option. The findings revealed that the tree farming provided more attractive option especially when labor and capital constrained is present. It is expected that the raise in productivity can be experienced by the farmers. Income as well is expected to increase by planting trees on the excess land portion that cannot be devoted to annual crops.

Garrity (2004) said that there had been the possibility of continuous intensified production using the NVS. This is mainly because of the combination of the conserving practices such as contour buffer and reduced tillage to the enhancing practices. Sloping soils unexpectedly became productive with regards to farming. The land also provided alternative uses for more profitable and environmentally suitable enterprises. The alternative activities for the sloping lands are vegetable production systems, perennial horticultural trees, timber production and livestock systems. In addition, adopters perceived that the value of their land have increased. According to Stark (1998), the range is between 35 to 50 percent increase. (cited by Garrity 2004)

VII. Conclusion

The main objective of Landcare is to promote simple soil conservation strategies through formation of Landcare groups. This is an investment in human and social capital The impact can be felt both at the farm, household and community levels. Landcare technologies increasing farm productivity, reducing soil erosion and increasing income. NVS systems are economically viable and tree based farming system is financially profitable. At the community or meso scale: the enhancement of the human and social capital of the upland communities. Landcare respects and adheres to the idea of the

farmer-driven voluntary action in partnership with the government and technologists. Triadic alliance consists of farmers, NGO/PO and LGU.

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