

CHAPTER 1

INTRODUCTION

Of the 30 million hectares total land area of the Philippines, only 8.2 million hectares of these are arable and permanent croplands. Notably, only 25.1 percent of the land area is constraint-free. The rest composed of 74.9 percent has numerous kinds of soil problems (Rola 2000).

The Philippine uplands are the most fragile ecological and social system in the country. It is estimated that there are 18-20 million people living in these areas comprising the poorest of the poor. At present it has an annual growth rate of 2.3 percent. A great majority relies on unsustainable production system such as slash and burn farming. Soil erosion is very high and the hydrologic cycle of the watershed is impaired.

Claveria in Misamis Oriental is one of the best illustrations of environmental degradation. This is triggered by conspicuous rapid growth of population with an annual rate of 4.43 percent. Too much pressure is being placed on the land, forcing families to cultivate even the unfavorable and fragile sloping lands. Soil erosion estimates reached 50 to 300 tons annually per hectare of land. This further leads to the decline of farm production accounting to 200-500 kilograms per year. The cost of nutrient loss is estimated to range from Php 2,000 to Php 12,000. Creeks and rivers are also affected which conveyed severe damage and siltation. This is accompanied by the destruction of watershed and rapid deforestation. Inadequate water supply is experienced during the dry season. The average

household income with 5 to 6 members is only Php 3,000. This is only half of the regional poverty threshold level of Php 6,000. Along with this, malnutrition is prevalent (60 percent of the children from moderate to severe malnutrition) (Mercado et. al. 1999).

The World Agroforestry Centre formerly the International Centre for Research in Agroforestry (ICRAF) with its farmer partners pioneered the Landcare approach in the Philippines in 1996. The main objective is to help the communities of Claveria address the biophysical constraints (soil and water conservation). Operationally, Landcare is an extension approach for rapid and inexpensive diffusion of conservation farming, agroforestry practices and other natural resource management systems among upland farmers. This is based on the farmer's innate interest in learning and sharing knowledge about new technologies that give them more income and provide more environmental services (Garrity and Mercado 1998, Mercado et al 2000). It also refers to a group of people who are concerned about land degradation problems and interested in working together to do something positive for the long-term health of the land.

Landcare worked by bringing together the strong points of the communities, institution and their networks and strong research support in order to attain ecologically sound conservation farm practices. The multidisciplinary partnership became the vehicle to perform Landcare ideals and practices. The formation of Claveria Landcare Association (CLCA) composed of the farmers themselves, helped the communities by applying what the Landcare facilitators taught them. The farmers then made it easier to disseminate the learning by forming groups on the community-level and eventually sub-group from the sitio level (Espaldon et. al 2005).

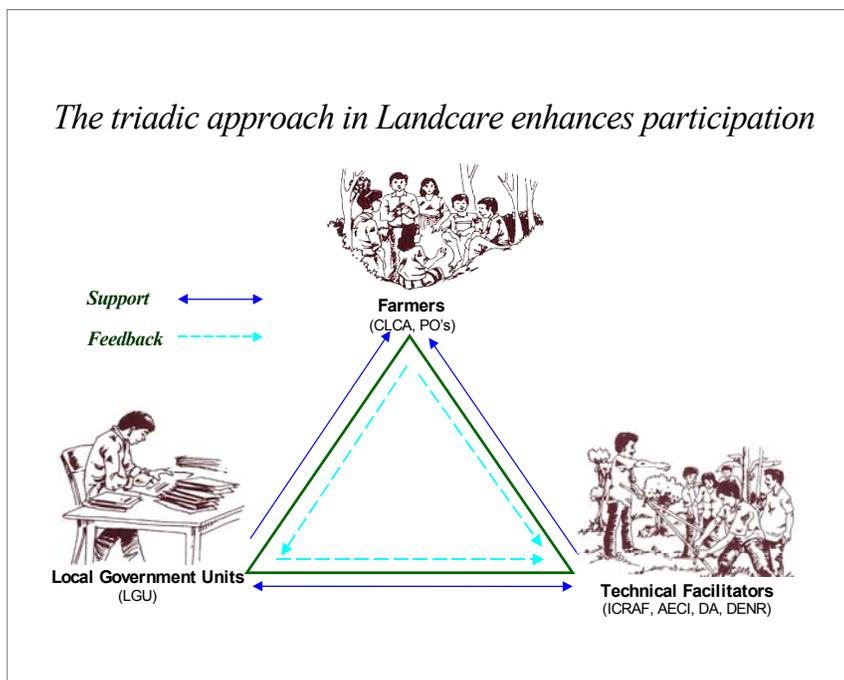


Figure 1. The interdependence of the different stakeholders in a triad doing respective complementing roles in the Landcare approach
(Source: ICRAF database)

The Landcare as a triadic partnership consists of grassroots Landcare groups, local government units (LGU) and technical service providers and facilitators from ICRAF, NGO's Government line agencies/NGA's. The success of Landcare as an approach is dependent on how these three key factors interact and work together. More than 6000 farmers have become part of the Landcare movement in the Philippines (Fig 1).

Being an archipelagic country governed by monsoon climate, Claveria is highly vulnerable to climate variability and extremes. Lasco (2005) stated that the occurrence of climate variability and extremes can cause a lot of threats to the communities and its ecosystem. This is evident in Claveria. In fact, the Bureau of Soils and Water Management (BSWM) identified El Niño as the greatest threat in Misamis Oriental

(where Claveria is located). The Manila Observatory (also) identified the province of Misamis Oriental as one of the areas affected by El Niño. The recent event identified by the respondents was during the late months of 1997 and first quarter of 1998 when El Niño hit Misamis Oriental. The communities suffered from loss of crops and income. The vulnerability of Claveria to climate variability was given by the socio-economic and biophysical condition. With the presence of Landcare employing several techniques, technologies, practices, etc. to the people in Claveria. The study would like to assess the role of Landcare in enhancing the adaptive capacity of Claveria to climate variability. Factors that indicate the level on vulnerability were also explored. Another objective of this study was to analyze the policies involved in categorizing such vulnerability while providing some insights and recommendations.

Objectives of the Study

Claveria is threatened by the effects of climate variability specifically El Niño as part of the Misamis Oriental province. Hazards in the area include biophysical problems such as soil erosion triggered by intensive rainfall. With the overlap of the problems the study would like to assess the role of Landcare in enhancing the adaptive capacity of the communities in Claveria, Misamis Oriental to climate variability. Specifically study aimed to address the following objectives:

1. To determine the vulnerable areas and communities in the Municipality of Claveria in terms of climate variability

2. To assess the effects of Landcare as an approach to enhance the adaptive capacity of upland farmers in Claveria to climate variability.
3. To evaluate the communities in terms of resilience
4. To identify the role of Landcare with regards to resilience.
5. To formulate/suggest ideas that will help the communities in terms of policy-making
6. To examine the implications of the Landcare approach for climate adaptation in rural development intervention

Significance of the Study

Climate issues are very much talked about by scientists at present times. The concerns on the effects of climate change, climate variability and climate extremes on human well being is one of the primary interests of global environmental change scientists. Theories and predictions warn the people of several threats and risks. The global warming, rising sea level, extensive fire, melting polar ice caps, loss of some species had been identified. But in reality only the researchers, scientists and some concerned individuals are aware of this.

At the community level especially on the isolated areas, climate is often interchanged with weather. These communities are oftentimes left ill-advised on the long-term implications of climate variability. The fluctuation on the climatic trend is just normal and should be anticipated. Unknowingly, these areas where the communities are situated might be vulnerable to climate variability and climate extremes.

This study aimed to conduct a vulnerability assessment of Claveria, Misamis Oriental to climate variability. Factors for considering vulnerable areas were identified after assessing the extent of vulnerability in the area. The study can provide a basis for prioritizing vulnerable communities.

Landcare was intended to help the communities alleviate their socio-economic and biophysical condition. The study assessed the role of Landcare in enhancing the adaptive capacity of the communities in Claveria to climate variability by providing baseline information to similar projects in the future.

The study formulated a proposed framework for vulnerability and resiliency assessment. This can be a helpful tool for other researchers when conducting similar studies to other sites. For Claveria, the study could serve as a basis for policy making and implementation. The study also provided recommendations as well for community improvement.

Scope and Limitation of the Study

The study attempted to determine the socio-economic and biophysical condition of Claveria, Misamis Oriental to assess the vulnerability of the communities to climate variability. Constraints and problems encountered are as follows:

1. Lack of microclimate data

2. Lack of baseline data on water quality and quantity and other socio-economic data
3. The accuracy of the information was based primarily on the interviews and the surveys. E.g. income and other related information is based on the recollection of the respondents.
4. There are some insurgency problems in some areas, limiting access to these areas.
5. The study made use of the Landcare technology adoption and non-adoption. This is because Landcare membership and non-membership both comprise Landcare technology adopters and non-adopters.
6. The study lacks cultural component.
7. The vulnerability mapping is done in the municipality level in general. This only shows the level of vulnerability of the whole municipality.
8. The study is focused on the role of Landcare is enhancing resiliency.