

# **Community-based agroforestry practices for watershed management in the Philippine Uplands: Lessons learned from the Landcare experience**

**Agustin R. Mercado, Jr. and Patricia Ann J. Sanchez**

World Agroforestry Centre-Philippines, 2/f Khush Hall, IRRI, Los Baños, Laguna Philippines. 4031  
[agustin9146@yahoo.com](mailto:agustin9146@yahoo.com); [p.a.sanchez@cgiar.org](mailto:p.a.sanchez@cgiar.org)

## **1. INTRODUCTION**

Sustainable watershed management is one of the important issues in the Philippines. More than 25 million people (among the country's poorest of the poor) live in the uplands. There is a need to increase the productive and protective functions of their farms. The expanding upland dwellers need to meet their basic needs while providing environmental services to the lowland dwellers through adoption of appropriate farming practices as the lives and livelihood of the lowland dwellers are affected by these practices. This paper relates our experiences in a participatory approach to develop technology and institutions for conservation farming and agroforestry practices conducted by the World Agroforestry Centre (ICRAF), in collaboration with the Australian Centre for International Researches (ACIAR), and Agencia Espanola Cooperacion Internacional (AECI) in Claveria, northern Mindanao, Philippines.

Upland environments are the most complex, diverse, and risk prone agricultural ecosystems. Soil erosion is a major environmental hazard associated with agricultural production in these ecosystems. Rapid population growth and economic needs push farmers to cultivate steeper and more fragile lands contributing to erosion of 50-200 tons of topsoil annually (Garrity, 1995). The loss of soil fertility consequently pulls down productivity to 200-500 kilograms per hectare per year (Fujisaka et al, 1995), and income levels of farm households to less than 50% of the Philippine poverty threshold level (Mercado et al, 2001). Offsite, Asian river systems carry 10 times more sediments than any other river systems throughout the world reducing the service life of infrastructures, marine resources, calamities, and reduced dry season stream flows affecting water supply for domestic and agriculture use (Milliman and Meade, 1988). These dark pictures of upland environments require a holistic approach to address complexities, diversities and risks on the technical, social and political elements of upland development and natural resources management requiring appropriate upland technologies, strong community institutions, and proactive government support.

We tested Landcare as an approach for sustainable agriculture and natural resources management in the context of resource poor upland farmers of northern and central Mindanao and central Visayas. Bringing these pillars together needs a strong unifying base- education through training and workshops, allowed us to develop farmers' capacity to share knowledge and skills with other farmers, hone leadership potentials and the organizational development skills. This paper also describes our experiences in enhancing adoption of conservation farming and agroforestry in the uplands of northern Mindanao, through the Landcare approach, and in developing technical and institutional innovations to reverse land degradation problems, and its potential spread in other upland areas in the Philippines.

## WHAT IS A LANDCARE APPROACH

Landcare is a set of appropriate land management practices. It is also an ethic and a principle used to describe the judicious utilization of natural resources viewed in two ways: as a development approach and as a community-led movement. The Landcare approach is a triadic partnership of: grassroots Landcare groups (farmers), local government units (LGU) and technical service providers and facilitators (ICRAF, NGO's (Non-government organizations), Government line agencies/NGA's). The success of Landcare as an approach depends on how these 3 key actors interact and work together (Figure 1). Today, the Landcare movement has expanded in many places in Mindanao and in the Visayan islands. There are now tens of thousands of farmers involved in this movement. Our studies indicated that Landcare is an affordable undertaking at the local level. Local government units could begin Landcare activities with minimal investment for training and facilitating group formation and activities.

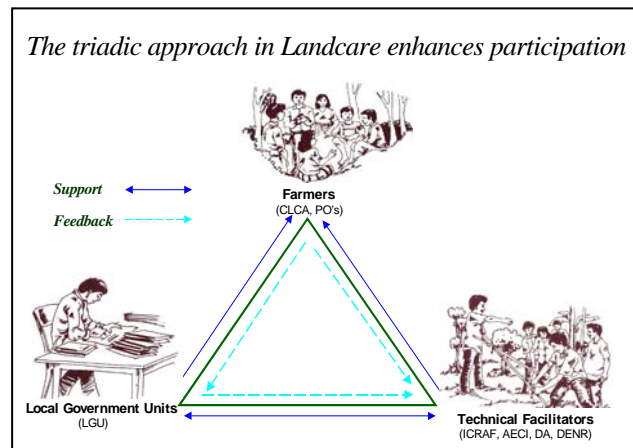
Initially, contour hedgerow farming with pruned leguminous trees was viewed as an

important agroforestry technology to insure food security, alleviate poverty, and protect the environment but farmer adoption was low so efforts were refocused to participatory technology development by finding alternative systems addressing technical and institutional issues of conservation farming and agroforestry practices. We found out that natural vegetative filter strips (NVS) was simple, affordable and effective in controlling soil erosion, providing a foundation for farmers to evolve to more complex agroforestry systems. Through this participatory approach, we also found out that Landcare is an approach for rapid and inexpensive method of disseminating soil and water resources managements in the uplands.

There are 5 types of Landcare groups that ICRAF had been facilitating such as: 1.) *Landcare in farms* – groups of farmers and landowners working together to address technological and tenorial issues and concerns. 2.) *Landcare in schools* –The Landcare concept is now integrated into the school curriculum, specifically in *Edukasyong Pangtahanan at Pangkabuhayan* (EPP) and in Technology on Home Economics (THE) of elementary and high school students. 3.) *Landcare in forest margins* – deals with indigenous people and migrants 4.) Landcare in church – integrates Landcare into church activities for both the spiritual and physical needs of the church members. 5.) *Landcare for out-of-school youth* – deals with young people who are out of school due to various reasons and are learning and working together for effective local resources management.

## THE INTERWOVEN ELEMENTS OF THE LANDCARE APPROACH

We used Landcare as an extension approach for rapid and inexpensive transfer of conservation farming and agroforestry practices. In this approach, there are three interrelated elements or facets that are interdependent to each other. These are: appropriate technologies, community institution development, and partnership building. In each element or facet there are tools or techniques which we used to enhance the impacts of the particular element.



**Figure 1.** The Landcare triadic approach

### **Element 1: Appropriate upland technologies- Enhancing productive and protective functions of upland farming systems**

*1.) Information, education and communication (IEC)* through slide shows, using clear book presentation, and discussion during farmer meetings, barangay assemblies, and individual farmer visits; *2.) Farmers cross farm visits* *3.) Farmer-to-farmer knowledge sharing* is strongly practiced among Landcare groups; and *4.) Conservation team approach* was implemented in new areas.

### **Element 2: Community institution building – enhancing leadership and participation in soil and water management practices**

The following were employed in building active and coherent organization to become a machinery for rapid and inexpensive technology dissemination and adoption: *1.) Small groups formation* (small, *sitio*-based groups-hamlet level) *2.) Networks* for broader knowledge sharing at the community level promoted from small groups *3.) Landcare groups were proactively facilitated* to have clear definition, direction and understanding of their problems *4.) Regular group meetings* were facilitated and participation from LGU and technical facilitators was encouraged to promote dialogs among farmers and LGU officials. *5.) Collective planning and actions* such as communal nursery, exchange labor, saving mobilization, mortuary funds, etc, were strongly promoted in order to build human and social capital along the process *6.) Trainings on organizational development and strengthening*, e.g. leadership skills, and team building, were conducted regularly. *7.) Transparent leadership and fiscal management* were always encouraged *8.) Livelihood projects and roll over schemes*, e.g. animal and seed dispersal, apiculture, and cut flowers, were encouraged and practiced by many Landcare groups *9.) Participatory monitoring and evaluation (PME)* was conducted at each group (*sitio* level), through the use of community designed leader boards placed in Landcare groups' meeting houses and other methods agreed upon by the groups to monitor progress and spot issues and concerns.

### **Element 3: Partnership building - a triadic approach: Building strong social capital among stakeholders**

Some positive aspects evolved in partnership building such as: *1.) Landcare groups lobby supports from service providers* such as line agencies (DAR(Department of Agrarian Reform), DENR(Department of Natural Resources), etc), local government units (LGU's), academe and research institutions (ICRAF, etc) *2.) Landcare concept can be integrated in development plans* of the barangay and municipal governments, because Landcare members become sectoral members of the municipal development council. *3.) Farmers understand the roles of civil society* and the mandates of the LGU's and other government agencies on natural resources management and development *4.) Invitation of service providers and policy makers* to Landcare groups' meetings and planning sessions provided for dialogs between government officials and farmers. *5.) Local achievement competition* ("Paligsahan sa Barangay") at the village level encouraged collective participation among farmers and pride of their success

**Some lessons learned in promoting soil and water conservation practices conservation farming and agroforestry practices in the uplands of northern Mindanao:**

- Stepwise technology dissemination was more effective, simplifying complex technology packages (e.g. agroforestry);
- Technologies must fit to the bio-physical and socio-economic environments. Blanket technology recommendation was not appropriate. Appropriate technologies were generally site specific;
- Technologies must be simple and “trialable”. Farmers tended to shy away from complex technologies. Opportunities for innovation or adaptation based on farmers own soils, available household resources and time thus enhancing individual creativity and self worthiness;
- Technologies must be profitable and having low risks;
- Technologies must have short and long term impacts. Farmers would like to see immediate results, but also looking at long term impacts;
- Technologies must be low cost and culturally acceptable;
- Farmers should be involved in the technology generation, verification or adaptation trials;
- Farmers-involved technology dissemination and role modeling.
- Encourage more technological learning sites and knowledge sharing venues and opportunities, but avoid project funded or supported model farms. The appropriate model farms are those that evolved from farmers’ adoption and adaptation of technologies from his soil, household resources and time. External facilitators provide technical backstopping and link farmers to information and other resources and networks.

Appropriate technologies are needed to enhance the productive function and environmental services in a sustainable manner in the upland areas. These technologies should be simple, affordable and adaptable to the diverse conditions of resource-poor upland farmers and should provide them with short- and long-term benefits. Formation of local institutions e.g. Landcare groups are encouraged to provide the venues for local people to collectively learn and improve their knowledge and skills for sustainable natural resource management. Through these institutions, people think, plan and act together to address community and natural resources management issues and problems. Landcare can be a rapid and inexpensive way of extending conservation farming and agroforestry technologies in the diverse upland environments.

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