

Chapter 6

Scaling Up Landcare in Lantapan

6.1. Introduction

The initial success of Landcare in Claveria encouraged ICRAF to scale up at its research site in Lantapan, Bukidnon Province, in 1997. The aim was to test the landcare approach that evolved in Claveria in another municipal context. This chapter describes the development of Landcare in the first scaling up site. The sources of data for this case are first described and a profile is given of the municipality of Lantapan. Following this, the mode of scaling up, the management and costs of implementation, activities and impacts, and problems met are considered. It also presents the perspectives of the different actors, leading on to the discussion of the factors that enhanced or limited the success of Landcare.

6.2. Sources of Data

This case study relied on the following sources of data: (1) seven focus groups including the Lantapan Landcare Association (LLCA); (2) farmer interviews; (3) key informant (KI) interviews of local government officials and Landcare facilitators; (4) project documents; and (5) local government profiles (Table 6.1). Initial discussion with facilitators revealed the diversity of landcare groups. To capture this diversity, facilitators categorised the groups as (1) sustaining groups, (2) disbanded groups, (3) affiliated groups, (4) female-headed groups, (5) seasonal groups, and (6) non-organised landcare groups with technology adopters. Four sustaining groups, one affiliated group, a female-headed group, and the LLCA were selected for focus group discussions (FGDs) (see also Appendix 4.1). In addition, a total of 70 farmers were interviewed individually, of which half were selected from participants of the FGDs, while facilitators recommended the others, depending on their availability at the time of fieldwork. Of these, 60 were men and 10 were women, and the mean age was 45. Facilitators also identified 24 key informants from the LGU, including the Mayor, Vice Mayor, barangay officials, and technicians. Altogether, 139 participants were involved in the study. As mentioned in Chapter 4, my previous involvement with the Landcare Program provided the scope for my reflective analysis of this case study.

Table 6.1 Sources of data and methods of collection

Data Sources		Methods of Data Collection				Documents Review
		Interview	FGD			
		Number of interviewees or key informants	Date of Interview	Number of Participants	Date of FGD	
Sustaining Groups	Kibulay	5	9.8.02	10	9.8.02	
	Mapawa	5	12.8.02	12	12.9.02	
	Tulugan	4	24.8.02	12	24.8.02	
	Baclayon	2	16.8.02	12		
Disbanded Groups	Capitan Juan	7	17.8.02			
	Cawayan	10	14.8.02			
	Kibangay	5	14.8.02			
			20.8.02			
	Alanib	5	19.8.02			
Female-headed Group	Lawgawan Women			16	22.8.02 (a.m.)	
Affiliated Group	Palamboon	6	13.8.02	11	13.8.02	
Seasonal Group	Dipa, Victory	6	21.8.02			
Non-organised LC Group	Bol-ogan,	6	14.8.02			
	Sungco		15.8.02			
Landcare association	LLCA	8	22.8.02	13	22.8.02 (p.m.)	
Total farmers		70		74		
LGU	Elected	16	30.7.02			
	officials		31.7.02			
	Staff	8	1-21-8.02			
Total LGU informants		24				
Landcare facilitators		9				
ICRAF Documents						/
LGU Profiles and Annual Reports						/
Total		103		74*		

*Half of FGD participants were also interviewed.

6.3. The Municipality of Lantapan

The municipality of Lantapan is located in a river valley that is crossed by Mindanao's major north-south highway some 15 km south of Malaybalay, Bukidnon's provincial capital, and 100 km southeast of Cagayan de Oro City, the closest city and port (Coxhead & Buenavista 2001) (Figure 6.1). The left bank of the Manupali River bounds Lantapan on the south, and a major protected area, the Mt. Kitanglad Range Natural Park (MKNRP) on the north. Several sub-watersheds drain from Mt. Kitanglad Range across the extensively cultivated lands to the Manupali River. The river runs into a network of irrigation canals operated by the Manupali River Irrigation System (MANRIS).

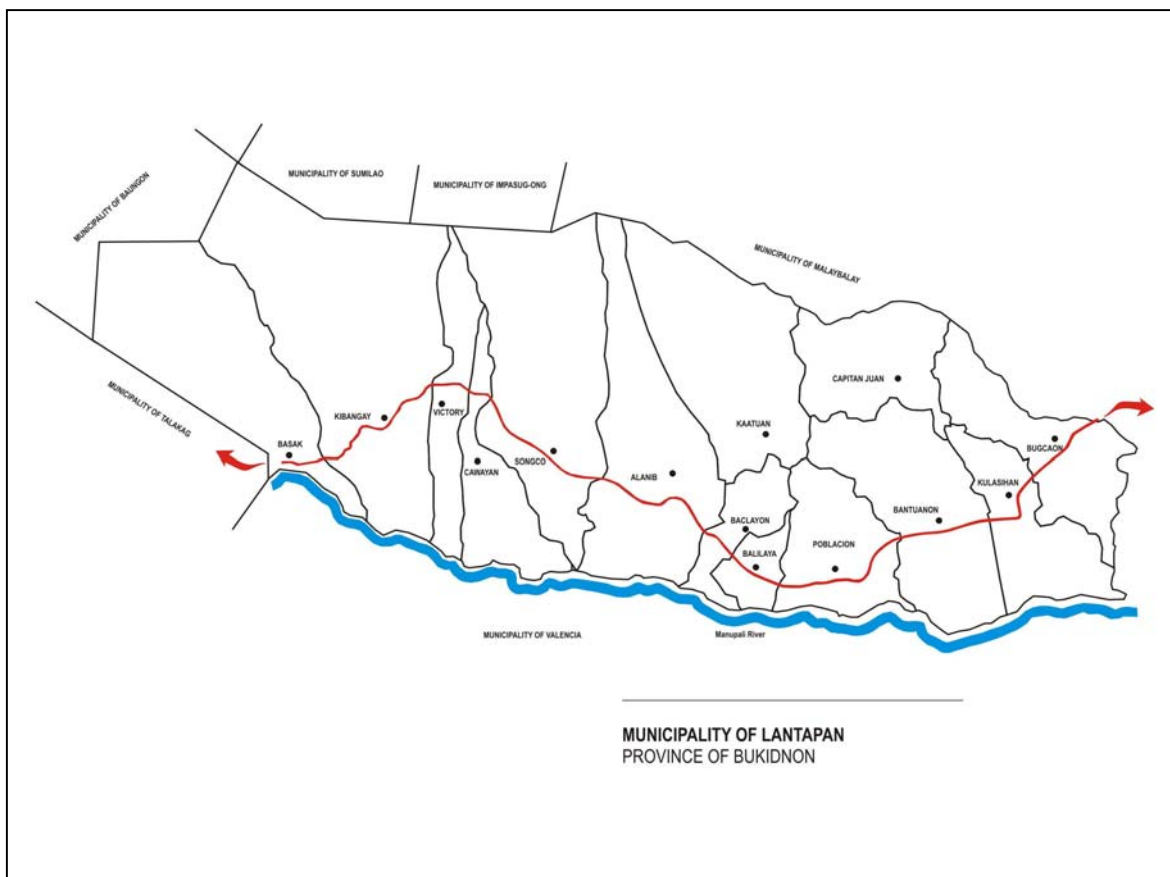


Figure 6.1 Municipality of Lantapan, Bukidnon, showing barangay boundaries
Source: ICRAF database, Lantapan

The whole system ultimately drains into the Pulangi reservoir, utilised for hydroelectric power generation by Pulangi IV, the largest hydroelectric power facility in Mindanao located about 50 km southeast of Lantapan. Thus, Lantapan is wholly contained within the Manupali watershed, which forms part of the upper Pulangi watershed. The Manupali watershed was declared “critical” by the Department of Environment and Natural Resources (DENR), making it subject to restricted development and conservation in 1992.

6.3.1. Landscape, Population and Economy

Lantapan has a total land area of 35,465 hectares. Of this, 21,215 hectares are classified as alienable and disposable (A&D) lands, while 14,250 hectares are public lands. The municipality is divided into 14 barangays. Lantapan has an average elevation of 600 metres, which increases as one proceeds northwest to MKNRP to a maximum of 2,938 metres. About 70 per cent of the area has slopes greater than 10 per cent. Soil types are

generally classified as Adtuyon and Kidapawan clays, which are mostly well drained, have clayey surface and subsoil horizons, are slightly to moderately acidic with low organic matter and high P fixation capacity, and have a low capacity to retain nutrients (Coxhead & Buenavista 2001). The average annual rainfall is 2,470 mm, and air temperature and solar radiation decrease with elevation (Laurente & Maribojoc 1997).

Lantapan's population has revealed a rapid increase since the 1970 census. Until 1980, the annual average growth rate was 4.6 per cent, much higher than the national average of 2.4 per cent (Paunlagui & Sumingit 2001). In 1995, the National Statistics Office (NSO) recorded a total population of 36,943, which increased to 42,383 in 2000. Given this rate, it was projected that the present population would triple in the next 15 to 20 years. Paunlagui & Sumingit (2001) computed the man-land ratio in Lantapan, suggesting an increasing scarcity of agricultural lands for production at 0.15 ha per person, given the projected population of 114,198 in 2030. The ethnic groupings include 25 per cent indigenous Talaandig, 14 per cent Bukidnon, 51 per cent Dumagats (lowland migrants), and 10 per cent Ifugao from Benguet Province in northern Luzon. Since the Dumagat migrants are the majority, the dominant language is Cebuano or Visayan. As of 1995, the literacy rate was recorded at 92 per cent for those aged 5 to 35 and over.

Lantapan has an agriculturally based economy. Until recently, ninety per cent of the households have been dependent on smallholder farming. However, this changed since Mt. Kitanglad Agriventures Inc. (MKAVI) and Dole Skyland Philippines, two large corporations for highland banana production, started to operate in the late 1990s. The LGU estimated that about 60 per cent of the total labour force of Lantapan was now employed in these companies, and in commercial swine and poultry farms, while others had seasonal employment in large corn farms, sugarcane plantations, and in vegetable farms.¹ The on-going shift to large-scale commercial agriculture by large corporations and rich farmers pushed the smallholders to farm in much smaller plots in less productive and more environmentally fragile areas. Table 6.2 shows the different crops planted in Lantapan.

¹ Interview with Adolfo Torres, Executive Assistant, 2 August 2002; Bayani Santos, Technician, 1 August 2002; Julian Rubio, Municipal Councillor, 2 August 2002; Ernie Devibar, Municipal Councillor, 1 August 2002; Godofredo Balansag, Vice Mayor, 10 August 2002; Joseph Delfin, Barangay Captain, 20 August 2002, all in Lantapan; and as per correspondence with Gerardo Boy, Landcare facilitator, 15 November 2003.

Table 6.2 Crops and area planted in Lantapan

Crops planted	Area (ha)
Corn (HYV, OPV white & traditional variety)	4,081
Irrigated rice	698
Vegetables	
Tomato	58
Broccoli	27
Ampalaya (<i>Momordica charantia</i> L.)	1
Cabbage	104
Carrots	13
Cauliflower	22
Sweet pepper	21
Sweet peas	16
Squash	27
Beans	17
Chayote (<i>Sechium Edule</i>)	19
White beans	6
White potato	51
String beans	1
Chinese cabbage	73
Singkamas (<i>Pachyhzus erosus</i>)	3
Sub-total	459
Coffee	396
Fruit trees (Lanzones & Mango)	45
Rubber	42
Banana	2,000
Sugarcane	3,046
Cassava	2
Abaca	27
Total	10,796

Source: Municipal Agriculture Office (MAO), 2003

Corn is grown everywhere in the landscape, but with corporate banana farming on prime lands, corn and vegetable production have been pushed towards the lower footslopes of MKNRP. The lower eastern boundary, which was irrigated by MANRIS used to be grown exclusively with rice, but farmers are shifting to corn and sugarcane due to poor price support for rice.

Two sugar milling companies about 30 kilometres southeast of Lantapan encouraged sugarcane production even in upper elevation areas. At middle altitudes, corn is grown with coffee as a secondary crop along with banana, root crops, and fruit and timber trees, while in higher elevation areas corn is planted alongside temperate vegetable crops such as potatoes, cabbage, cauliflower, lettuce, beans and tomatoes. With reference to the Philippines' primary vegetable production area in northern Luzon, Lantapan is considered the vegetable basket of the south. Lantapan's pattern of agricultural expansion involved the

replacement of forest and permanent crops by annual crops, and the spread of annual cropping in high altitude and steeply sloping areas, pushing back the forest frontier. According to Lal (1990), this type of agricultural expansion and the intensification of cultivation in sloping lands are found to cause dramatic increases in soil erosion rates in humid tropical areas, causing further land degradation.

6.3.2. Infrastructure and Communication Facilities

The total road network in Lantapan is roughly 528 kilometres, but the majority of this is earth paved (87.6 per cent). Remote areas are connected by small access roads built by the municipal government. Jeepneys are the main mode of transportation, but motorcycles (*habal-habal*) are also common, particularly in remote sitios. The majority of barangays has electricity provided by the Bukidnon Second Electric Cooperative (BUSECO). The municipal government supports the water system and water is distributed to households and neighbourhood clusters. Only the municipal government has access to a telephone landline, but the use of mobile telephones is becoming common.

6.3.3. Local Governance

Lantapan is a third class municipality with an annual budget of 33 million pesos (Municipal Profile 2001). The Municipal Agricultural Office (MAO) was created in 1993 with 13 agricultural technicians (AT). The ratio of technicians to farming households is one to 483. Extension activities include livestock improvement, cooperative development, and training, particularly in livestock management. The MAO received an annual budget of 2,372,230 pesos in 2001, which was 7 per cent of the total municipal budget. Of this, 70 per cent was allocated for personnel services and 30 per cent for maintenance and operating expenses. Funding for special projects depended on local development funds and grants. From 1999 to 2002, the local government unit (LGU) allocated 358,000 pesos for the municipal Natural Resource Management and Development Plan (NRMDP).

A Community Development Assistant (CDA) is detailed by the provincial government to assist the LGU in implementing environmental programs and to supervise the Integrated Social Forestry (ISF) Program. Three forest guards of the DENR also patrol the forest area including the Cinchona Forest Reserve. The *Sangguniang Bayan* has enacted eight

environmental policies, but 90 per cent of the total legislation lacked implementing guidelines. In compliance with national government orders, the LGU completed its Forest and Comprehensive Land Use and Watershed Management Plans. From 1999 to 2002, the LGU has created 31 local special bodies, including the Municipal Land Use Committee and Watershed Management Council.

6.3.4. Local Institutions and Partnership Initiatives

The LGU and four rural high schools are the only permanent institutions in Lantapan. A rural bank exists with a loan portfolio for farmers. Lantapan is uniquely positioned to attract various research and development institutions, enriching its institutional climate; hence, it has a long history of project interventions. The most prominent were the 10-year Muleta-Manupali Watershed Reforestation Project, implemented by DENR with funding from the Asian Development Bank (ADB) in 1982, and the USAID-funded Sustainable Agriculture and Natural Resources-Collaborative Research Support Program (SANREM-CRSP). SANREM was a consortium of local, national, and international research and development institutions, including local governments, which implemented research and outreach projects that followed a landscape approach, were interdisciplinary, and involved inter-institutional collaboration and participation (Coxhead & Buenavista 2001). Capacity building was a common activity in the form of field trips, seminars and trainings, usually followed with livelihood projects. Except for pure research projects, financial assistance to individual and group projects was common. Based on LGU records, 155 peoples' organisations (PO) were operating in 1998, which increased to more than 200 in 2000. These included women's, farmers', religious, and youth groups. Functional categories included agricultural, socio-civic and sports, religious, people empowerment, livelihood and business, cooperative, kinship and cultural groups.

6.4. Background and Mode of Scaling Up

ICRAF has been leading the biodiversity consortium of the SANREM project in Lantapan since 1994. Its work focused on developing the elements of a workable social contract between buffer zone communities and other stakeholders concerned with the protection of

the resources of MKRNP.² Based on the initial success of Landcare in Claveria, ICRAF researchers hypothesised that Landcare could be an essential element in a social contract for effective buffer zone management. In late 1997, an ICRAF staff member from Claveria introduced Landcare to the LGU through a participatory planning process to develop the municipal NRMDP.³ The NRM planning team of Lantapan visited Claveria and was quick in adopting Landcare in the municipal NRMDP. The biophysical conditions in Lantapan and Claveria were similar; hence the NRM planning team assumed that Landcare was also relevant to Lantapan.⁴ Efforts were exerted to ensure that local officials understood the Landcare concept. Meetings with government officials at the municipal and barangay levels were held. Rightly or wrongly, ICRAF assumed that a certain level of demand for Landcare was established at the municipal level at the outset. Upon the completion of the NRMDP in 1998, members of the SANREM consortium signed a Memorandum of Understanding (MOU) to support the LGU in implementing the NRMDP. Hence, on ICRAF's part, the NRM planning process was viewed as an effective strategy for scaling up Landcare in Lantapan.

6.5. Management Structure and Problems Met

Under the NRMDP, the LGU was to manage the Landcare Program in collaboration with ICRAF, a scheme expected to institutionalise Landcare in the LGU. However, this changed after the local government elections in May 1998. The adjustment of the new LGU administration delayed the implementation of the NRMDP in general, and of Landcare in particular. It was speculated that the newly elected Municipal Mayor was not keen to support the NRMDP and Landcare since these were developed during the former Mayor's time. The situation was exacerbated by the fact that the former Mayor was also the newly

² The MKRNP has a total area of 40,176 hectares. Of this 16,000 hectares were delineated as buffer zone for forest production and agroforestry uses. 451 households were identified as actual farmers, but 1,159 transient migrants also claimed lands in the buffer zone (Felix Mirasol pers. comm., 20 October 2004).

³ The NRM planning was a SANREM-supported workplan with the LGU, for which I was Project Manager. ICRAF was actively involved in the NRM planning process, providing technical inputs in conservation farming and agroforestry.

⁴ The NRM planning team was a multi-sectoral group tasked to develop the NRMDP. Five of the LGU informants in this case study were members of the NRM planning team in 1996.

elected Vice-Mayor. This meant the executive level (headed by the Mayor) and the legislative council (headed by the Vice-Mayor) were constantly in friction, causing political and administrative instability. Hence the implementation of Landcare was on hold for several months until the new Mayor designated a technician as Landcare Coordinator in the middle of 1999. However, the Municipal Agricultural Officer (MAO) was not sanctioned to get involved in program implementation. Under this situation, ICRAF assumed the managerial responsibility for Landcare. Thus Landcare appeared to be an ICRAF program, although the three-way partnership that developed in Claveria was persistently sought. It was thought to be politically unwise to push the LGU to lead the implementation of Landcare given the current political disposition. The designation of a Landcare Coordinator was seen to be good enough at that time.

An ICRAF staff member who had worked on a tree domestication project from 1997 was then designated as Landcare facilitator. He was a graduate in agricultural extension from nearby Central Mindanao University (CMU). Soon after, four newly graduated “volunteer” (or intern) facilitators from the same university joined him. With additional resources from the Philippines-Australia Landcare Project funded by the Australian Centre for International Agricultural Research (ACIAR), ICRAF employed an additional facilitator in 2000. He was a graduate in forest ecology from the University of the Philippines, and had done prior work with indigenous communities. ICRAF also provided administrative and logistical support. The costs incurred were primarily due to staff salaries and operating expenses. Training costs were due to the purchase of seeds and plastic bags, as well as the counterpart cost for meals during municipal level training. The same facilitators were involved in training clients outside of Lantapan, and in the scaling up efforts in Manolo Fortich and Malaybalay City. Table 6.3 shows a decline in ICRAF’s annual budget for the Landcare Program.

Table 6.3 ICRAF's annual budget for the Landcare Program, 1999-2003

Year	Staff Cost (USD)	Operating Costs (USD)					Total
		Training	Travel	Supplies	General Expenses	Capital Expenses	
1999	Na	Na	Na	Na	Na	0	Na
2000	10,200	1,900	7,735	4,000	4,600	2,026	30,461
2001	Na	Na	Na	Na	Na	0	Na
2002	14,036	2,500	3,500	2,753	5,923	0	28,712
2003	3,325	1,100	5,071	3,000	3,865	710	17,071

Na= data is not available

The designated Landcare Coordinator from the LGU had a good personal and working relationship with the ICRAF team, but was invariably affected by the political sensitivity of the LGU. Some technicians had shown interest in Landcare, with others participating in training sessions and in meetings, but overall the whole extension team was hesitant in supporting Landcare due to lack of impetus from the Mayor. There was also a political hiatus at the barangay level. Most of the barangay officials were in a “wait and see” attitude, depending on political moves at the municipal level; hence at the start, only five barangays were actively supporting Landcare. Initially, the municipal government provided some funds for training, information boards, and nursery materials, but the general situation remained politically sensitive and the support given was inconsistent. Nonetheless, the ICRAF team continued its commitment with an optimistic view that the Landcare Program could succeed on the basis of personal relationships, networks, and informal arrangements at the barangay level. The subsequent activities were negotiated mostly with barangay officials and interested technicians.

In addition to the political challenges faced by the ICRAF team, it was also confronted with operational issues on how a demand-driven Landcare process could evolve in a scaling up site. There was a concern that Landcare might be “projectised”, undermining the basis of a farmer-led movement.⁵ While it was necessary to intervene at the municipal level to promote Landcare, this could be viewed as dilution of the demand-driven process that had evolved in Claveria. The ICRAF team attempted to maintain the demand-driven nature of Landcare by implementing, over six months, two rounds of an information campaign on

⁵ Meine Van-Noordwijk used the term “projectise” to refer to conventional strategies of external agencies, implementing projects without regard for local demand, and providing support in a top-down, target-driven mode, defeating the bases of voluntary participation and a farmer-led movement.

environmental management issues, focusing on soil and water conservation. The first round involved a series of slide shows with emphasis on natural vegetative strips (NVS) and agroforestry practices, conducted in conjunction with monthly barangay meetings. During the slide shows, quick surveys were conducted to determine the level of community interest in conservation farming and to assist in site selection. Seven out of 14 barangays in the upper portion of Lantapan responded positively, including Sungco, Capitan Juan, Cawayan, Victory, Kibangay, Alanib, and Kaatuan. Presumably, farmers in these areas had greater perceived need for conservation technologies. A second round of information dissemination was implemented in these barangays, but this time slide shows were at the sitio level. The ICRAF team felt that the initial approach at the barangay level was effective in maintaining the essentials of a demand-driven process.

6.6. Activities and Impacts

Most activities were imprints of Claveria, but differed in the ways in which they were implemented. As mentioned above, ICRAF launched a six-month information campaign, which culminated with a field trip to Claveria, from where farmers came back with more enthusiasm about NVS and Landcare from what they saw. The LGU supported this activity. Subsequently, the dominant dissemination activities were slide shows, cross-farm visits within Lantapan, and orientation meetings. ICRAF records show that 61 slide shows were conducted involving 1,999 participants from 1999 to 2001, while 16 cross-farm visits and six orientation meetings were conducted up to 2002. In the slide shows, the idea of group formation was deliberately concealed to avoid influencing farmers' decisions about Landcare. The slide shows ignited farmers' interest in NVS and tree nurseries. Towards the middle of 1999, ICRAF launched a Landcare radio program to support these dissemination activities.

6.6.1. Training Sessions

Similar to Claveria, a training session usually followed a slide show or a cross-farm visit. ICRAF records show a total of 137 training sessions held from 1999 to December 2003 (Table 6.4). The training sessions were more wide-ranging compared to Claveria, including establishment of natural vegetative strips (NVS) (47) and nurseries (46), asexual

Table 6.4 Training sessions implemented in Lantapan

Training Session	1999	2000	2001	2002	Mid-2003
Capacity Building	1	1	1	2	
Nursery Mgt. & Tree Farming	25	12	8	1	
NVS Establishment	22	10	14	1	1
Soil Analysis		8	11	2	
Asexual propagation of fruit and timber trees			4		
Seed Collection			2		
Farm Planning			2		
Liquid Fertiliser Preparation			1		
Mushroom Culture			3		1
Timber Tree Seed Collection			2		
Corn Breeding				1	
Inland Fish Production					1
Fruit Tree Nursery & Orchard Mgt.					1
Sustainable Agriculture					1
Cutflower Production					1
Total	48	31	48	7	6

propagation, farm planning, mushroom culture, liquid fertiliser-making, leadership and capability building, seed collection, soil analysis, and corn breeding, among others. Just as in Claveria, the technical training sessions had practical hands-on exercises. Facilitators at the same time served as resource persons, but expert farmers, technicians, and extension staff from the CMU were also invited as resource persons.⁶

6.6.2. Group Formation, Development and Decline

Group formation followed the field trip to Claveria. Based on the Claveria model, the *kagawads* (barangay councillor) assigned in the sitios and the committee chairs on agriculture and environment were also the contact persons. However, group formation started at the sitio level, as opposed to Claveria's CLCA model where it was initially organised as a municipal-wide association, which then helped form landcare groups at the sitio level. Also, landcare groups were organised by electing their own set of officers, in contrast to the approach used in Claveria, where most of the sitio presidents were automatically appointed as presidents of Landcare sub-chapters. The first landcare group was formed in Baclayon in April 1999. Rapid group formation was observed within five

⁶ Some of the training needs were beyond ICRAF's field of expertise such as mushroom culture and corn breeding. Facilitators coordinated these training sessions with CMU and the barangay government provided funds to conduct the training.

months (from April to August 1999) with more than 40 groups formed, which were then associated at the barangay level (equivalent to Landcare chapters in Claveria). In October 1999, the barangay landcare associations were federated at the municipal level and registered with the Securities Exchange Commission (SEC) with the name, Lantapan Landcare Association (LLCA).

Landcare groups were mostly formed around the establishment of communal nurseries. The communal nurseries served as a training ground, but most of these communal nurseries were eventually abandoned in favour of household nurseries, which were more effective in terms of management. Nonetheless, several communal nurseries were maintained for commercial production of seedlings. The growing interest in commercial seedling production was influenced by the Agroforestry Tree Seeds Association of Lantapan (ATSAL), which ICRAF had also facilitated. Farmers in ATSAL specialised in supply of quality germplasm and had good entrepreneurial skills. ATSAL affiliated with Landcare in 2000.

In 2002, a survey on farmer adoption in Sungco was implemented as part of ACIAR's evaluation study of the Landcare Program. The survey revealed that 80 per cent of farmers had adopted NVS on their own, which meant that they did not receive help from a Landcare facilitator or a Landcare leader/member in establishing NVS. This was possible because one farmer could easily establish NVS. As mentioned in Chapter 5, NVS are established by placing crop residues or by leaving 50 centimetres of unploughed strip along the contour lines and allowing the weeds to revegetate in the unplanted strip. However, the majority of interviewed landcare leaders for this study claimed that members were in fact helped in establishing NVS, but not in the tradition of *hunglos* or group work, where farmers rotate to help the group members. Usually, a landcare leader or a member who had extra time volunteered to help another farmer. Group meetings, planning, nursery establishment, and training were regular activities of landcare groups.

By early 2000, the LLCA had grown to include 57 landcare groups, concentrated in higher-elevation barangays, with a membership-base of 893 farmers (Figure 6.2). However,

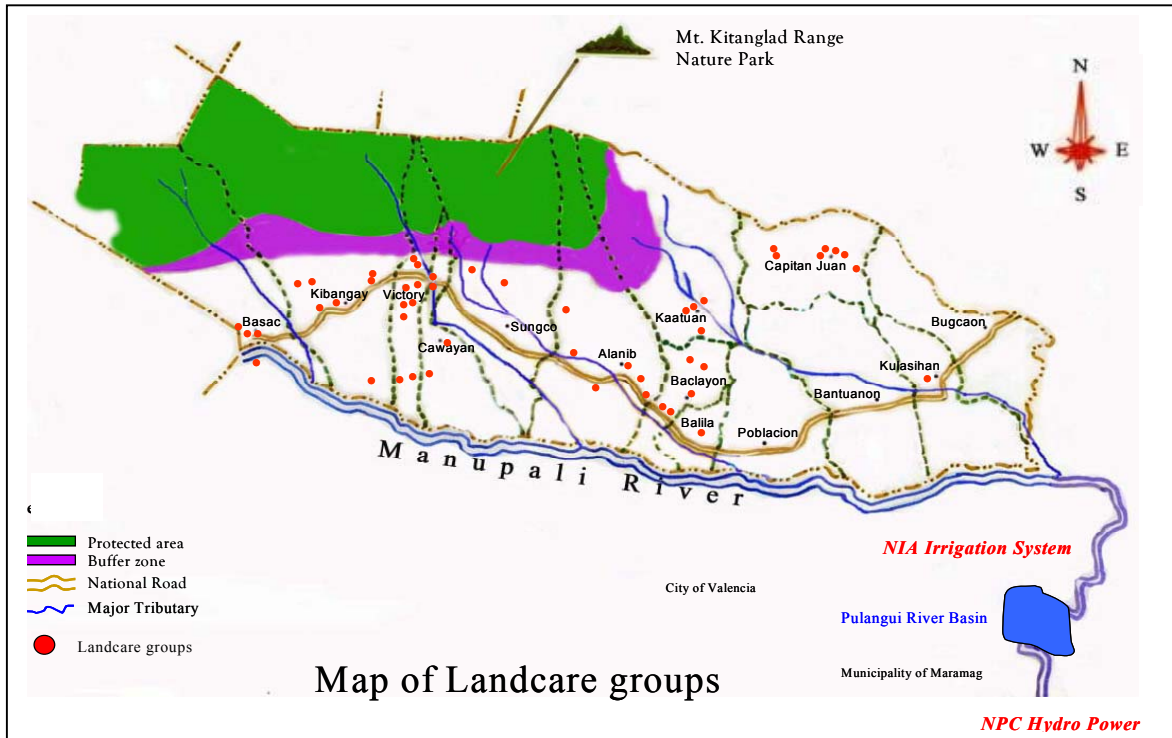


Figure 6.2 Location of landcare groups in Lantapan
Source: ICRAF database, Lantapan

group participation started to decline towards the end of this year, particularly in Cawayan and Alanib where the DOLE Skyland and MKAVI plantations had started to operate. In retrospect, six sitios in Cawayan had formed landcare groups with strong support from barangay officials in 1999. Farmers had planted over 18,000 trees and 81 had adopted NVS, but activities dramatically declined when farmers started working with DOLE Skyland. Interviewed farmers estimated that DOLE Skyland employed about 60 per cent of farmers in Cawayan. The company constructed farm-to-market roads, relocated the affected families, and supported various community projects. In return, barangay officials gave their full support to the company, and the Barangay Captain acted in a liaising role between the company and the residents. However, an interviewed farmer thought that the presence of the company indiscriminately affected the whole community structure.⁷ He observed that participation in barangay activities had declined, and that company issues dominated in barangay meetings. An interviewed landcare leader also disclosed that he was forced to relocate his farm because it was squeezed in the middle of the banana

⁷ Interview with Porferio Fuentes, 14 August 2002, Cawayan, Lantapan.

plantation, and farm labour was becoming scarce and expensive since the company was paying the labourers at a much higher rate than the daily rate for farm labour.⁸ Clearly, there was competition for land and labour between the company and smallholders. At the time of fieldwork, only one group at Kibulay, a remote sitio in Cawayan, had sustained their activities.

Landcare groups in Alanib were in a similar situation to landcare groups in Cawayan. Barangay officials estimated that 70 per cent of farmers and farm labourers had been employed by MKAVI, hence farmers rarely had the time to participate in landcare activities. Two groups disintegrated after electing their officers while two others from very remote sitios survived much longer than expected, and only 51 farmers had adopted NVS. Interestingly, the disintegration of landcare groups turned out favourably for a women's organisation in Lawagawan, a remote sitio in Alanib. The President of this women's organisation thought that the women would benefit from learning conservation technologies in Landcare, since most of them were left to tend their farms because of the employment of their husbands with MKAVI. Hence, the group decided to affiliate with Landcare and became actively involved in the activities of the LLCA. This was one example of the observation made by Narayan et al. (2000) that economic changes could spur changes in social structures.

The growth of commercial swine and poultry farms, and sugarcane and vegetable production also affected the development of landcare groups. In Capitan Juan, landcare membership had reached 117 farmers in six sitios; 64 farmers had adopted NVS and planted nearly 8,500 trees in one year. However, towards the later part of 2000, businessmen from neighbouring areas started to establish their swine and poultry farms on rented lands and hired local labourers. Farmers' attention then shifted to working in the poultry farms, leaving them with little time for their own farms. Additionally, sugarcane farming rapidly expanded in the area, with farmers leasing out their lands to sugarcane planters. These changes led to the demise of landcare activities until farmers' interest dissipated. At the time of the study, only one group in a remote sitio had remained active in

⁸ Interview with Rudy Jacinto, 9 August 2002, Cawayan, Lantapan.

their activities. However, interviewed farmers argued that they had retained their membership in Landcare due to the adopted technology, and maintained that they could still assemble for a Landcare meeting when necessary even at short notice.

On the other hand, interviewed farmers in Kibangay identified the cause of group disintegration as the commercial nature of their farming system, including credit and marketing. Day-to-day activities in vegetable farming left farmers with very limited time for other activities. Farmers depended on credit from financiers and traders, and were obliged to plant the crops dictated by financiers in order to maintain their access to credit. This credit relationship discouraged the adoption of conservation technologies, since the financiers demanded quick returns on investment and provided money only for the production of the crop of interest. Interviewed farmers disclosed that farmer groups had difficulty surviving in Kibangay especially if they did not easily get economic benefits. Clearly, when the farming system is tied to this type of financing and marketing scheme, farmer conservation groups are unlikely to be sustained, unless marketing and entrepreneurship is tied to conservation efforts or conservation programs provide livelihood support.

However, despite changes in economic pattern, some landcare groups sustained their activities, such as in Mapawa, Kibulay, Tulugan, and Baclayon. Except for Baclayon, these groups had common characteristics. They were remotely located from the barangay centre (3 to 5 km) and had few economic activities. The sitios were also quite homogeneous, with the majority of members belonging to the Talaandig tribe, where an indigenous socio-cultural structure and a sense of solidarity pre-dated Landcare. The members were full-time farmers, with farming their only source of livelihood. Of interest was that both Mapawa and Tulugan were located on the fringes of the protected area. Farmers in Tulugan acquired informal land rights through customary land appropriation, while Mapawa farmers had social forestry contracts under the Integrated Social Forestry (ISF) program of the national government. The ISF contract was a land tenure instrument renewable every 25 years, but with limited land use and control rights. This indicates that, although land tenure remains a central issue, farmers were more than willing to invest in conservation measures for sustained production even with insecure land tenure. It was also

possible that they were motivated to adopt conservation technologies to raise their claims for land tenure security. A corresponding observation was made by Cairns (1995) who found that Talaandig communities who occupied and had *de facto* control of the buffer zone of MKRNP had articulated self-interest in its protection, and it was only logical that they be empowered to achieve that end. In brief, the so-called “sustaining” landcare groups had common characteristics: (1) remotely located with limited socio-economic activities; (2) more culturally homogeneous; (3) strong pre-existing social structure; and (4) full-time farmer-members.

Facilitators felt that the presence of numerous NGOs with community-organising activities also challenged the implementation of Landcare in Lantapan. These NGOs encouraged the proliferation of farmer groups, resulting in overcrowding of activities and duplicating leadership responsibilities among the farmers. This prompted ICRAF to scale up by networking and complementing expertise rather than competing with other actors in the area. Hence collaborative activities, mostly training sessions, were conducted with existing peoples’ organisations (POs) with support from their host NGOs.

Similar to Claveria, landcare membership in Lantapan was ambiguous. The LLCA attempted to formalise membership with minimal fees, but the collection of fees had not been enforced. Although landcare membership reached 983 farmers in 2003, facilitators estimated that active members were only about 25-30 per cent of the total membership. The decline in active membership resulted in poor group performance. Facilitators categorised Landcare groups as active, inactive, disbanded, and one group that existed with only one to three members operating a nursery. Based on their assessment, 73 per cent of the groups (42) that were formed in 1999 had become inactive by 2002 (Figure 6.3). They identified the inactive groups as those with 90 per cent inactive members and without group activities. Nonetheless, some of the inactive members still maintained their contacts and were still willing to participate in the LLCA activities, hence their membership in the broader LLCA was retained.

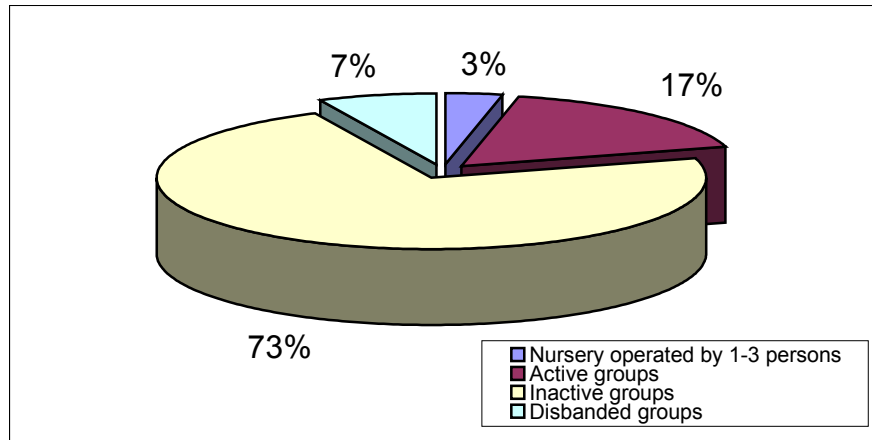


Figure 6.3 Status of landcare groups in 2002
Source: ICRAF database, Lantapan

Just as in Capitan Juan, interviewed farmers in other disbanded groups maintained their claim for landcare membership since they had adopted the technologies. Farmers in the “seasonal group” concurred with this view. The seasonal group was an interesting case, where, during the dry season, almost half the sitio members had to transfer to other barangays in search of alternative employment since the harvest was always expected to be low in that season, and there is scarcity of water supply for domestic uses. Even so, they regarded themselves as landcare members since they had adopted NVS. Relatedly, farmers in Bol-ogan had adopted the technology with some external support but were not organised as a landcare group. Datu Malunay thought that there was no need to form a landcare group because they were already organised, but they were willing to link with landcare groups to learn new technologies.⁹ The case of Bol-ogan demonstrated a positive spillover effect of an active landcare leader who helped his neighbours to develop a proposal for financing agroforestry projects.¹⁰

6.6.3. Networking and Scaling Up

The decline and disintegration of some landcare groups a year after they were formed, partly due to the growth of agribusiness ventures, prompted the ICRAF team to concentrate

⁹ Interview with Datu Malunay, Talaandig leader, 21 August 2002, Bol-ogan, Songco, Lantapan.

¹⁰ Henry Binahon, a Talaandig leader who had worked with the Integrated Protected Area System (IPAS) owned a 5-hectare agroforestry farm and developed a farmer-knowledge sharing centre.

on strengthening the existing groups. This move partially explained the decline of group formation after 2000. Nonetheless, the popularity of Landcare continued, and some NGO-sponsored groups within and beyond Lantapan requested training and offered collaboration.

In 2000, the ICRAF team developed a program for Landcare in Schools by helping to develop a simplified agroforestry course guide for two rural high schools in Kibangay and Alanib. Training sessions with elementary students and setting up school nurseries followed this initiative.

By early 2001, efforts were scaled out to Basac, a Community-Based Forest Management (CBFM) area, and to the lower-elevation barangays, namely Balila, Poblacion, Bantuanon, and Kulasihan. The approach in these barangays was different because the barangay officials took most of the responsibility for setting up nurseries. In Kulasihan, barangay officials initiated the nursery construction and distributed tree seedlings, but this did not last long due to poor farmer participation. It was possible that farmers were less interested in trees because of the relatively flat topography and the rice-farming system in Kulasihan. Generally, the lower-elevation barangays of Lantapan were dominated by irrigated rice and sugarcane production, hence interest was more in trees and mushroom culture to make use of the rice straw rather than NVS. However, the greater issue with farmer participation in these areas was that many farmers were no longer farming on their own land.

Facilitators also conducted a rapid appraisal in Bantuanon and found that 95 per cent of the residents in three sitios were no longer farming or were landless as they were working as labourers in sugarcane farms, making it hard for them to get involved with other activities. Facilitators felt that Landcare could hardly spread in these areas unless new strategies for engaging the sugarcane planters and the rice farmers were employed.

Towards the end of 2001, the LLCA was assisted to access support from the Federation of Cattle Raisers in the Philippines (FCRAP) for a cattle-breeding project. Two landcare groups were also involved in farmers' field schools (FFS) in conjunction with the Integrated Pest Management (IPM) program of the Department of Agriculture (DA). An ICRAF researcher and a designated LGU technician worked together to facilitate the FFS.

In the same year, Landcare facilitators were also training farmers who were organised by the Adventist Development Relief Agency (ADRA) in Basac and Kibangay.

In sum, ICRAF underwent a process of scaling up through several activities including expansion of training options, establishing networks, implementing collaborative activities, engaging the rural high schools, and geographic expansion in other barangays. The LLCA's activities were also scaled up, including such activities as river clean-up, riparian rehabilitation, setting up a central office and nursery, marketing of seeds and seedlings, and helping to implement training and cross-farm visits. These activities helped the CLCA to maintain its organisational interests, as well as establishing bridging social capital with landcare groups. Thus, both ICRAF and the CLCA underwent a process of organisational or functional scaling up as described in Chapter 2. Table 6.5 summarises the key activities initiated with landcare groups.

Table 6.5 Key activities and timeline

KEY ACTIVITIES	1999	2000	2001	2002	2003
Information and Dissemination Campaign					
Training, Cross Visits and Slide Shows					
Group Formation, Federation of LLCA					
Group Strengthening & Capability-building					
Landcare in School					
Farmers Field Schools					
Cattle Breeding Program					
Scaling out to other barangays					
Community-based projects (i.e. riparian stabilisation)					
Affiliation with other POs					
Market linkages					
Farmer Research Committees					
Landcare Foundation projects					
Farmer Training Group					

6.6.4. Impact of Activities on Technology Adoption

ICRAF recorded a total of 218 adopters of contour farming using leguminous hedgerows and NVS from 1983 to 1998, which could be attributed to the various projects implemented since the early 1980s. The adoption of NVS, which started in 1995, was no doubt

influenced by ICRAF's field trial on NVS and was an outcome of the intermittent dissemination efforts by technicians. By the end of 1999, 100 more farmers had adopted NVS, an increase in adoption of 46 per cent in seven months of the Landcare Program. Farmers enriched the NVS system with annuals or perennials such as coffee, guava, pineapple, banana, and taro, depending on the availability of planting materials. They also produced 30,900 seedlings of timber trees, planted simultaneously with NVS, on farm boundaries, or in small woodlots. As in Claveria, this step-wise adoption process promoted the evolution of agroforestry farming.

The annual rate of production of fruit and timber trees continued to increase from 1999 to 2001 with a declining rate in 2002 (Figure 6.4). A total of 171,860 seedlings were produced in 67 household and communal nurseries from 1999 to mid-2003. These included timber tree species such as *Eucalyptus spp.*, *Acacia spp.*, *Messopsis emeni* (Mocissi), *Cercocarpus montanus* (Mahogany) and other native premium wood species. Fruit tree species included durian, lanzones, rambutan, and jackfruit. When aggregated, the planted trees would cover about 150 hectares of pure reforestation. However, the survival rate of the planted trees was not documented. Farmers were also able to sell a significant volume of seeds and seedlings within and outside Lantapan, adding substantially to their income.

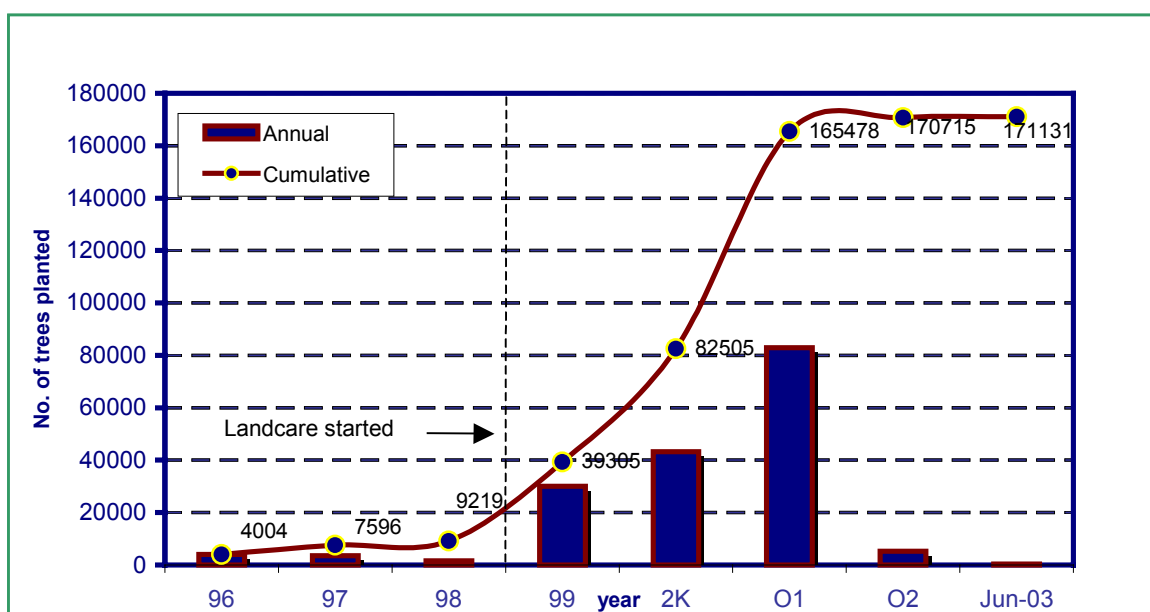


Figure 6.4 Annual and cumulative production of timber and fruit trees, 1996-2003

Source: ICRAF database, Lantapan

By the middle of 2003, the total number of farmers adopting NVS and agroforestry practices reached 917 (Figure 6.5). Of these, 712 (70 per cent) were adopters during the Landcare Program. The average number of adopters was 178 per year. Rapid adoption occurred in 1999 (235 farmers) with a declining rate from 2000, following an S-shaped adoption curve. This could be associated with the disintegration of some landcare groups in mid 2000, due to employment with MKAVI, Dole Skyland, and with commercial swine and poultry farms. This suggest that adoption was reaching its limit due to changes in farming systems and in economic patterns, where potential adopters had other livelihood options in agribusiness firms. This situation might also lead the adopters to discontinue adopting the technologies.

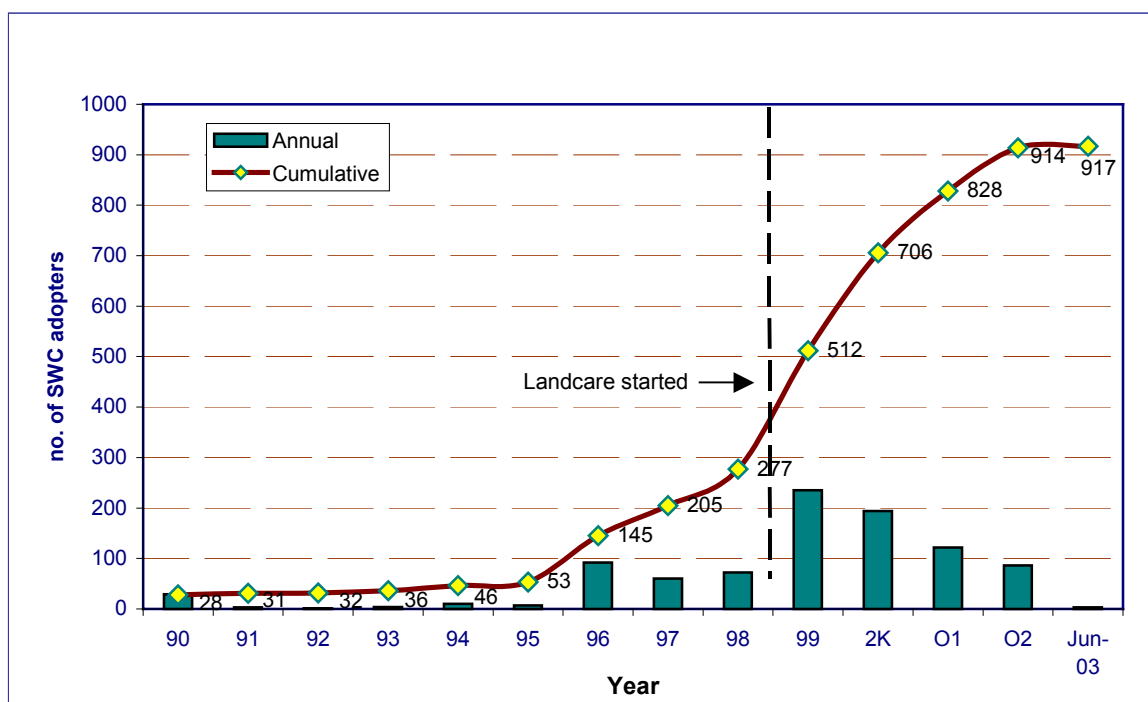


Figure 6.5 Annual and cumulative adoption of NVS and agroforestry practices, 1990-2003
Source: ICRAF database, Lantapan

Farmers in interviews and FGDs agreed that the most practical benefit from Landcare was learning the technologies, which helped improve the farming system. The Landcare President in Tulugan claimed that he could now harvest many more sacks of cabbage from the same plot where he used to harvest only three sacks, a year after he installed NVS on his farm, without changing fertiliser input.¹¹ He compared the yield of cabbage from his

¹¹ Interview with Arsenio Tahuran, 24 August 2002, Victory, Lantapan.

plots with NVS and without NVS, and recorded a consistent increase in yield from his cabbage plot with NVS. He also expected an increase in farm assets from his planted eucalyptus trees. Meanwhile, the Landcare President of Kibulay narrated that his once sloping farm had been transformed into a complex agroforestry farm with timber trees on the NVS, and with alternate rows of napier grasses for his ruminants, and corn and vegetables in the alleys.¹²

In summing up, 13 per cent of the total farm households (5,500 in 2001) had adopted conservation technologies during the Landcare Program. The total area applied with conservation technologies was almost 1,230 hectares (Table 6.6), representing 11 per cent of the total farmed area. Assuming these technologies were applied on farms located in environmentally critical areas (ECA), then the area applied with conservation technologies would be 18 per cent of the ECA.¹³ As shown in Table 6.7, Barangay Sungco, Alanib, Kibangay, Bantuanon, Cawayan, and Kaatuan had extensive ECA. Except for Bantuanon and Kaatuan, the majority of landcare groups were located in these barangays (see also Figure 6.2), and this is where technology adoption was concentrated. For instance, Barangay Sungco had extensive ECA (1,377 ha), but had the highest adoption of conservation technologies (276 or 54 per cent), and had planted the most trees (Table 6.7). This implies that the impact of these technologies would be significant for the entire watershed.

Table 6.6 Total area applied with NVS and agroforestry, 1999-2003

Type of Conservation Practice	Total area (ha)
NVS alone	314.2
NVS enriched with annual & perennials i.e., pineapple, taro, coffee, banana (Agroforestry Type 1)	141.9
NVS enriched with fruit and timber trees (Agroforestry Type 2)	72.8
Trees planted in woodlots, in farm boundaries, etc.	700.2
Total area with combined practices	1,229.1

¹² Interview with Basilio Decano, 9 August 2002, Kibulay, Cawayan, Lantapan.

¹³ I calculated the ECA of Lantapan in 1998 using the Geographic Information System (GIS). The ECA refers to cultivated areas with more than 18 per cent slopes with moderate to severe erosion potential.

Table 6.7 Adoption of NVS and agroforestry per barangay, 1990-2003

Barangay	ECA (ha)	Number of Adopters	Percent of households	Number of trees planted by landcare members
Sungco	1,377	276	54	93,521
Kibangay	1,077	105	10	13,497
Victory	265	100	38	19,660
Alanib	1,713	97	13	3,490
Capitan Juan	83	90	32	12,461
Cawayan	1,235	79	27	19,066
Baclayon	Na	71	25	7,246
Basac	Na	29	7	359
Kaatuan	1,408	28	10	1,400
Kulasihan	Na	23	3	304
Balila	Na	13	3	127
Poblacion	120	6	-	-
TOTAL	7,278	917	17	171,131

Source: ICRAF database, Lantapan

Na= data not available

Just as in Claveria, the economic and environmental benefits of the adopted technologies have not been completely evaluated in Lantapan. A complete assessment of the impacts of the adopted technologies in farmers' livelihood and environmental services would be valuable to determine appropriate investments in the Landcare Program and other future intervention.

6.7. Perspectives of Different Actors

6.7.1. Farmers' Perspectives of Landcare

The FGDs and interviews revealed that farmers held varied perceptions of Landcare such as tree farming, sustainable farming, caring for the land, and small farmers applying appropriate technologies to improve production and income, which appeared to encapsulate a holistic view of the environmental, economic, and social relevance of Landcare. However, they particularly saw the relevance of Landcare to their own local conditions, characterised by population pressure and land scarcity, increasing soil degradation, declining yield per unit area, increased dependence on fertiliser inputs, and poverty.

Farmers' expectations of Landcare were also varied, but the most dominant was economic in nature, that is, to learn new technologies in order to improve farm production, increase income, improve living conditions, and ultimately escape from poverty. Some expectations

were to do with environmental aspects such as to conserve natural resources, protect the watershed, and prevent land degradation. The last set of expectations were about accessing government support and incentives, uniting farmers, and developing the wellbeing of farmers and their communities.

Farmers in the FGDs recalled that they heard about Landcare in barangay assemblies and during slide shows. The other sources of information were family members, friends, ICRAF staff, radio programs, and other community meetings. This reflected the wide range of information and communication strategies employed by facilitators and the spread of information through informal channels.

In interviews and FGDs, nearly all farmers recognised the benefits of NVS as improving farming with reduced erosion. The planted trees, farm animals, and income from seeds and seedlings were seen to add to their income-earning assets. They also identified social benefits as developing friendship and improving self-confidence and leadership. Some farmers said that they had developed a more optimistic attitude about the future, while one farmer had been more encouraged to cultivate his abandoned lands. The Palamboon landcare group added that they benefited from the goat dispersal project that was accessed through Landcare and the emerging market for their tree seedlings.

Nearly all interviewed farmers agreed with the focus groups that the simplicity of the promoted technologies (e.g. NVS) was an important driver for participation, hence an important factor for success. At the group and community level, facilitator personalities, effective facilitation, the good relationship of farmers and facilitators, and information and dissemination activities were identified as important factors for success. A corresponding observation was made by Mog (2000) who found that the attitudes of the Landcare facilitators were critical in the formation and development of landcare groups. This fits well with Rogers' (1995) view regarding the promoters' influence in technology dissemination. Rogers said that an innovation is promoted or marketed by an individual or group, but it makes a difference on how these promoters or agents work. However, under some circumstances, the promoter's efforts are more effective only within certain periods of dissemination. This was true for Landcare facilitators, where their efforts were constrained

with the proliferation of agribusiness, which changed the economic structure and farming structure in Lantapan and shifted farmers' interest to off-farm employment.

For the sustaining groups, the success factors identified by farmers reflected the groups' attributes, which included unity and cooperation, teamwork, friendship, effective leadership, trust, and commitment. In Baclayon, the majority of group members and leaders were mature farmers; the younger members looked up to mature and well-respected leaders. As discussed in Chapter 3, respect for elders was an important Filipino cultural value, influencing decision-making. It was interesting to note that the farmers did not explicitly mention LGU support as important for success, perhaps due to the limited support of the municipal government for their efforts.

The majority of interviewed farmers were finding poverty a common constraint to participation, hence limiting success. Poverty was expressed as lack of financial resources and powerlessness in terms of negotiation for prices, marketing, and credit. Farmers in the seasonal landcare group, the Lawgawan women's group, and the Palamboon Landcare group agreed on this. On the other hand, farmers in the disbanded groups were more limited by their employment in agribusiness firms and the lack of financial and livelihood projects in Landcare.

Some farmers also pointed out that the emerging takeover of corporate and large-scale farming in Lantapan had dissipated farmers' conservation efforts and affected their activities. This view was consistent with that of nearly all the LGU informants. Some interviewed farmers in the disbanded groups reinforced this, citing that the presence of agribusiness firms had not only affected Landcare but had changed their lifestyle and dietary patterns, and altered family values. For instance, one interviewed farmer mentioned that his job with the company left him with little time for his family, as he had to work 10 hours a day starting as early as three o'clock in the morning.¹⁴ One farmer also said that, "My family's diet had changed in that they consumed more canned food on credit from the company, when they used to consume fresh farm produce (i.e., vegetables and root crops)

¹⁴ Interview with Danny Tumana, 9 August 2002, Cawayan, Lantapan.

before his employment”¹⁵. Interviewed farmers could not easily point out the economic benefits from working in the company, except that their credit-worthiness had increased, as many store owners had now offered credit for electric appliances (e.g., television, refrigerator, etc.).¹⁶ The economic, social, and environmental impacts of these companies were beyond the scope of this study, but farmers’ views on these aspects were revealing.

At the community level, the lack of government support for farmers’ efforts limited the success of Landcare. Farmers in interviews and FGDs concurred that inconsistent support of local officials limited their activities. Nonetheless, farmers felt that LGU support was an important factor for long-term success. For farmers, LGU support in the form of start-up capital, local policies that encouraged adoption of conservation technologies, continuous training and facilitation would be needed to sustain their activities. In Mapawa farmers expressed their need for a farm-to-market road, a water system, working animals, and market linkages. For farmers in Tulugan, government support and local policies would be critical, but they emphasised that politicians should be non-partisan and committed to implementing such policies. Farmers in the disbanded groups added that increased involvement of technicians would be important.

At the time of interview, farmers were already feeling the strain of land scarcity and the need for improved practices to sustain production. Aside from population increase, land scarcity was caused by the large assignment of land as protected forest (almost half the municipal land area) and the proliferation of agribusiness that had taken much of prime land from smallholder farming. An interviewed farmer from Alanib disclosed that he had rented out three hectares of his land to MKAVI and used the rent to acquire land near the buffer zone. While this was a form of asset building, it could also lead to further forest encroachment, although the farmer claimed that he would now cultivate his new farm with new technologies he had learned from Landcare.

¹⁵ Interview with Norvisie Anudon, 9 August 2002, Cawayan, Lantapan.

¹⁶ Individual interview with Jermie Colero, Reynante Llena, Almindo Singgil, 9 August 2002, Cawayan.

Finally, farmers thought that the important elements of Landcare were the genuine commitment and cooperation of members, facilitation, simple technologies, and LGU support, this being non-partisan and without prejudice to the individual's political views or party affiliation.

6.7.2. LGU Perspectives of Landcare

The majority of LGU informants saw the relevance of Landcare based on the conditions of the watershed, the farmers' economic situation, and the LGU's need for capacity to manage the environment effectively. The LGU officials' perception of Landcare was predominantly about technologies appropriate to the critical conditions of the watershed. However, they also thought that Landcare was a community-based initiative suited for delivering a public service (i.e., farmer education). Hence, they expected that through the Landcare Program, farmers would be able to (1) offset the negative effects of development projects, (2) restore degraded resources, and (3) complement the LGU's development programs. The first expectation was not surprising since it permitted the proliferation of agribusiness. In fact, the Mayor alluded to the contribution of MKAVI in watershed management, since it had planted more than 10,000 trees within the plantation area.¹⁷ The Mayor indicated that he was negotiating with MKAVI and Dole Skyland on a collaborative project for watershed and eco-tourism development in which farmers could potentially participate.

According to interviewed technicians, Landcare could be easily implemented if sufficient support from the LGU was provided. They thought that Landcare was not entirely a new concept and the promoted technologies were low-cost, hence should be supported. However, two interviewed technicians said that, "The one problem was that programs that did not have immediate benefits were often given little support by the LGU".¹⁸ As discussed in Chapter 3, local politicians prioritised projects with quick, tangible results as these could be easily translated into votes for the next election.

¹⁷ Interview with Lantapan Mayor Narciso Rubio, 23, August 2002, LGU, Lantapan.

¹⁸ Interview with Nimfa Carpina and Bayani Santos, 2 August 2002, Sungco, Lantapan.

Nearly all the LGU informants agreed that the benefits of the LGU from Landcare had to do with the implementation of environmental programs, particularly the NRMDP. Specifically, it complemented the extension team and influenced the environmental perspectives of local officials. Further, it had become a source of pride in the performance of LGU functions. At the community level, LGU informants were seeing the contribution of Landcare in awareness building, enhancement of volunteerism, and improvement in environmental and economic conditions.

The majority of LGU informants admitted that political factionalism limited the success of Landcare. The presence of agribusiness ventures aggravated the situation. According to interviewed technicians, smallholders were losing most of their prime lands to rich farmers and big companies. The technicians observed that the availability of off-farm employment had a negative impact on community participation in that farmers, who now had more income options, tended to view participation in other activities as having a high opportunity cost. In contrast, the Mayor viewed these companies, as major players in economic development. The Mayor saw these companies not as aggressors, but as partners in development. This particular view of the Mayor, relates to Long's (1992) argument that an actor's behaviour is not only influenced by his intrinsic rationality, but more importantly, his structural location in society.

The LGU informants were also asked what factors would be important for the success of Landcare. The majority agreed that LGU support in the form of funding, policy, incentives, and livelihood support would be important for success. Additionally, linkages and partnerships, training and capability building, community participation, and collective action were recognised as important factors for success. They emphasised that appropriate technologies should be continuously disseminated through training and cross-farm visits. They also pointed out that the number of technicians should be increased to cater to the needs of a large number of farmers.

Finally, the LGU informants added that the LGU's main contribution to the success of Landcare would be (1) policy and financial support, (2) provision of incentives, and (3)

mainstreaming Landcare in the extension program. However, these would have to rely on the initial decision and commitment of local politicians.

6.7.3. Facilitators' Perspectives of Landcare

The ICRAF team based the relevance of Landcare on the similarities of the biophysical conditions of Lantapan and Claveria. As earlier mentioned, it was anticipated that the landcare approach would address the institutional gaps in buffer zone and watershed management. Facilitators' perceptions of Landcare were more to do with participatory processes and social development strategies (e.g., innovative extension and community development strategy, participatory watershed management strategy, and farmers' empowerment). They agreed that Landcare could have been easily implemented if technicians were mobilised and the LGU was more supportive of the efforts of farmers. They also felt that the diversity of livelihood options in Lantapan dissipated farmers' interests for conservation, although this might not have changed their values, as many of the interviewed farmers maintained their claims for landcare membership through adopting the technologies. Finally, the facilitators said that both technical and social skills were important in facilitating Landcare.

6.8. Discussion

The development of Landcare in Lantapan followed a different pathway, though most of the activities were imprints of Claveria. ICRAF expected that the LGU was an appropriate pathway for scaling up, and the municipal NRM planning process was an effective strategy to institutionalise Landcare in the LGU's development agenda. According to Uvin & Miller (1996), integration of programs is a common strategy for scaling up and is widely used by NGO as it is the fastest way for scaling up. It is widely recognised that LGUs play a critical role in local and national development. With decentralisation, LGUs were entrusted to develop their own template of development (Anderson 2000; Bebbington 1997; Bebbington & Farrington 1993; Enters & Anderson 2000). Hence, LGU involvement was constantly sought, but serious political problems marred the smooth implementation of the Landcare Program. ICRAF then took administrative responsibility and, with little support

from the LGU the three-way partnership of three key actors as experienced in Claveria was skewed in this case towards ICRAF and the LLCA.

Aside from the less stable political situation, philosophical and operational issues also challenged the implementation of the Landcare Program in Lantapan. ICRAF had an overriding goal to promote agroforestry, but it was also concerned with preserving, as far as possible, the basic principles that made Landcare successful in Claveria. It was realised that effecting a demand-driven process in a scaling up site was an extremely difficult task.

The actors concurred that Landcare was generally relevant to the biophysical conditions of Lantapan and to addressing the twin goals of economic development and environmental protection. In particular, the promoted technologies were seen to be highly relevant to farming conditions and the critical state of the watershed. Additionally, the LGU perceived Landcare as an effective means of public service delivery and a mechanism to offset the adverse effects of development activities. Thus in terms of Rogers' (1995) concept of "relative advantage" as an attribute that influences adoption of an innovation, Landcare was perceived to rate well. However the perceived relevance of Landcare was partly offset by political and economic developments.

As mentioned, the activities of Landcare in Lantapan followed a similar pattern to Claveria, with specific differences only in the ways they were implemented. Training sessions were more diverse than in Claveria, reflecting the complexity of the farming conditions in Lantapan. The group formation process was also different to Claveria's CLCA model, with initial negotiations mostly held at the barangay and sitio levels.

There was rapid group formation in 1999, which was directly associated with the number of training sessions and slide shows conducted, but many of these groups disintegrated since farmers started working in the banana plantation companies. Nonetheless, other groups were sustained and new ones were formed. The sustaining groups had common characteristics. First, they were geographically remote with limited socio-economic activities. Second, they had a strong pre-existing social structure as a sitio or as a cultural community. Third, nearly all members were full-time farmers, which meant they were more focused on their farms and had the interest to improve their practices. Fourth, farmers

were smallholders, cultivating between one to three hectares. Fifth, the communities were more culturally homogeneous. In contrast, the disbanded groups were located in areas with diverse socio-economic activities and had more access to infrastructure, financing, credit, and marketing. In these areas, social cohesion and collective action for Landcare-type activities appeared to be low due to off-farm employment and lack of time to participate in the group activities. Despite this, however, the majority of interviewed farmers in the disbanded groups maintained their claim for landcare membership by virtue of the adopted technologies, and were still willing to re-organise if necessary, suggesting that the conservation goals of farmers were preserved.

Clearly, the sustaining landcare groups and disbanded landcare groups were contrasting types. The former, being geographically remote, appeared to be more cohesive, relying on internal strengths and values. The latter, which were nearer to barangay centres and more exposed to diverse economic activities and had disbanded after a year, appeared to be less cohesive and reliant on external support. This conformed to the explanation of Narayan et al. (2000) regarding the differences between remote and urbanising communities. In their views, urbanising communities, although richer economically, often struggle to find a basis for communal security and solidarity because economic changes have spurred changes in social structure. In contrast, remote communities, being poor and lacking in economic wealth, often rely on social solidarity as their main capital. This suggests that the Landcare Program would be more easily adopted in relatively remote rural areas than in urbanising areas.

The larger benefit for farmers had to do with improving knowledge of conservation farming, which led to technology adoption, subsequently improving production and income. Although, economic benefits of the adopted technologies have not yet been fully studied, anecdotal stories and farmer testimonies revealed some evidence of economic benefits. The immediate social benefits were the improvement in self-confidence and leadership, while environmental benefits were recognised from reduced soil erosion and conservation of soil and water resources. Additionally, the LGU benefited in terms of meeting the goals of the municipal NRMDP, which had a strong component of soil and water conservation.

The evidence showed that rapid technology adoption occurred during the initial years of the Landcare Program compared with the preceding 15-year period in which there had been various project interventions, tripling technology adoption within a 4-year period (1999-2003). The majority of technology adoption occurred in upper watershed barangays. The aggregate area applied with conservation technologies was about 11 per cent of the total cropped area or 18 per cent of environmentally critical areas, with adopters representing 13 per cent of total farming households. The rate of technology adoption followed Rogers' (1995) S-shaped adoption curve with a steep increase in 1999, and gradually decreasing in subsequent years. However, this did not reflect a "natural" diffusion process but the facilitating role of Landcare in the first instance and the inhibiting role of agribusiness expansion in the second. There was no doubt that the significant increase in adoption of conservation technologies and related benefits could be attributed to the Landcare Program. However, changes in economic patterns spurred changes in resource utilisation, in farming systems, in farmers' priorities, and in LGU priorities. Hence, the number of potential adopters had decreased, with a decreasing number of farming households due to the increased employment of farmers in the agribusiness firms. The current number of adopters might in fact represent close to the total number of farmer-tillers in Lantapan, although a proportion of these could have also moved to off-farm employment. This suggests that adoption in Lantapan was approaching its continually contracting limit, implying that a new strategy to maintain the momentum and effectiveness of the landcare approach may be needed.

Farmers found that the pleasant and dedicated attitude of Landcare facilitators and the ICRAF staff, as well as linkages with other agencies, were important for success. The first point indicates the influence of personal and institutional values to whatever success the Landcare Program had achieved. As mentioned in Chapter 5, the dedication and commitment of some ICRAF staff members was invaluable, without which, things could have been done very differently. This is in connection with the actor-oriented perspective, which emphasised that individual actors can produce different outcomes, even within similar structures.

Additionally, farmers found that group factors such as leadership, commitment, trust, unity and cooperation were important, and were critical factors for success. The issue of leadership was a significant one. The presence of a number of NGOs involved in organising farmer groups resulted in leadership crises. As more and more groups were formed, good leaders became a scarce resource, suggesting the need for investment in leadership and capability building or a reduction in duplication of efforts.

Except for farmers in the disbanded groups who were constrained by their employment in the agribusiness sector, the majority of farmers found poverty as a limiting factor for success, defined in terms of lack of financial capital and voicelessness to negotiate with higher authorities on pricing of farm products, financing, and marketing schemes. This agreed with the findings in the Claveria case, where farmers also considered poverty as a constraining factor for participation, hence limiting success.

The LLCA continued its activities using its own resources. Considering the limited support from the LGU, it could be argued that the lack of LGU support pushed the LLCA to mobilise their own resources, making them more self-reliant and independent. The exposure of farmers to different activities of previous projects in the last two decades suggests that farmers were well-informed and well-trained, and had an initial stock of human and social capital that could be mobilised by ICRAF without LGU support.

Farmers and LGU informants felt that group success was generally hindered by insufficient LGU support and the proliferation of agribusiness. The latter view, however, conflicts with that of MKAVI and Dole Skyland who claimed to have implemented sustainable land management practices and had passed international environmental standards (e.g., ISO1400). On several occasions, the Manager of MKAVI claimed that it had sound environmental practices, such as the use of drip-feed irrigation and manual spraying, and the company's goals were consistent with the conservation efforts of farmers. He added that MKAVI was willing to support farmers' conservation efforts.¹⁹ This raised the potential for a new type of Landcare partnership in Lantapan, needing more reflection and learning from other experiences. Corporate partnership with communities is becoming

¹⁹ Niel Abejuela, MKAVI Manager, personal communication 2001.

common, as corporations are now asked to implement social responsibility programmes. There are numerous examples of this type of partnership. In Australia, corporate sponsorship of community landcare projects was a boost to the Landcare Program. These corporations also supported awareness building programmes and Landcare awards. Although there were questions regarding the motivation of business corporations (e.g., Lockie 2000a), there was little doubt that their contribution to the success of some landcare groups was substantial.

Notwithstanding this potential in Lantapan, it could be said that the decline in technology adoption, group formation, landcare membership, and participation was due to four major impeding factors: (1) employment of farmers in the banana plantation companies; (2) proliferation of intensive swine and poultry ventures, and expansion of sugarcane farms, which changed the farming systems and also opened up off-farm employment to farmers; (3) intensive production of temperate vegetable crops in the higher-elevation areas, which tied the farmers to credit and financing arrangement that discouraged adoption of conservation technologies; and (4) the limited LGU support for Landcare activities. This situation left the Landcare Program with much work in order maintain its relevance in Lantapan. An important aspect of this work had to do with expanding technical options that were adapted to the ecological potential of the area and to changing economic patterns, drawing on existing technologies in the short term and introducing new practices and technologies in the longer term.

Ultimately, the limited LGU support was offset by ICRAF's support through provision of appropriate technologies and effective training sessions and facilitation. Hence, it could be argued that LGU support, though desirable, may not necessarily prevent conservation efforts with appropriate technologies and a facilitated dissemination process, enabling farmer-led extension. Nonetheless, the case study participants voiced the view that LGU support would still be an important factor for long-term success, in addition to the services currently provided by ICRAF. This recognises the critical influence in this social arena of political actors. It also raises the question of the LGUs capacity to take responsibility for the Landcare Program in the absence of ICRAF. The total costs of implementing the Landcare Program covered the direct costs incurred by ICRAF, the involvement of two or

three LGU technicians in some activities, and the intermittent financial support of the LGU for training and for nursery materials. The latter was hard to account for because it was inconsistent, making it difficult to track the flow of funds on a periodic basis. Nonetheless, this less visible support was recognised to have partly contributed to the implementation of the Landcare Program.

The average annual budget of the MAO was three million pesos for the last five years, including project grants and aids. The MAO had 13 technicians and specialists, while ICRAF had only four or five facilitators. Comparing this to the average annual budget of ICRAF for Landcare, which was about one million pesos, the LGU appeared to have the financial capacity to implement a Landcare Program if it was given priority and incorporated in the LGU's annual investment plan (IAP). However, since most the MAO's extension activities were mandated by the national government, Landcare could be viewed as an additional task requiring additional funding. Additional budget may be required to train the technicians in facilitation and in new and relevant technologies, and to procure extension materials. There was also a need to increase the travelling allowance of technicians to improve their mobility. With proper priority setting and institutional strengthening, the LGU had the potential to manage a Landcare Program, with support from research and development institutions committed to support natural resource management efforts in Lantapan.

6.8.1. To what degree was the landcare approach adopted in Lantapan?

Scaling up the whole of the landcare approach was envisaged, but only the technical and institution building aspects of Landcare were more easily adopted. The degree of LGU partnership that contributed the success of Landcare in Claveria could not be replicated because of the less stable political situation in Lantapan. In addition, the socio-economic environment was more dynamic compared to Claveria. As mentioned above, the proliferation of agribusiness affected the conservation goals of farmers, shifted LGU priorities, and changed the economic pattern and social structures.

Nonetheless, despite the challenging situation in Lantapan, the majority of activities that had been implemented in Claveria were reproduced, with the substantial addition of further

training and related activities. This was because ICRAF was committed to promoting Landcare and the LLCA was also supportive. Collaborative training sessions with different NGOs made Landcare the major source of knowledge on conservation technologies within and outside Lantapan. The Landcare Program continued to attract visitors and, just as in Claveria, Lantapan had become a learning node for Landcare, where different groups of farmers, NGOs, foreign assisted-projects, and LGUs from different parts of the country came to learn about Landcare.

Facilitators thought that whatever success Landcare had achieved should be attributed to the cooperation of farmers, the good relationship between farmers and ICRAF staff, and their learning attitude and willingness to improve their work. Though the LGU support for Landcare was minimal compared to Claveria, thus weakening the landcare triangle, it was felt that the LLCA, the network of landcare groups, and ICRAF staff had worked together, offsetting the weakness of one side of the landcare triangle.

6.9. Conclusion

The Landcare Program in Lantapan was maintained despite limited LGU support because of the network of farmers with a stock of human and social capital and the support of a committed facilitating institution like ICRAF, offsetting the immediate need for partnership with the LGU. The less stable political situation and the economic pattern of development in Lantapan were limiting factors to group success but, in general, these did not deter the development of the Landcare Program. Despite the complexity of the conditions in Lantapan, it was evident that adoption of technologies and related outcomes were significant, and were comparable to Claveria. The Lantapan site became, with Claveria, a new node for diffusion of Landcare. Thus, the Landcare Program was scaled up and adapted under a complex political environment and, though somewhat distorted, made an important contribution to the attainment of the goals of the actors involved. In this case, although LGU support was desirable, it was not essential for scaling up the Landcare Program.