Assessing Livelihood and Ecological Benefits from Restoration Initiatives in the Philippines

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Acronyms

AF	Agroforestry
ANR	Assisted Natural Regeneration
APEC	Asia Pacific Economic Cooperation
ARMM	Autonomous Region in Muslim Mindanao
BCN	Biodiversity Conservation Network
BFM	Bureau of Forest Management
BOT	Board of Trustees
BTUFA	Barangay Tigbinan Upland Farmers Association
CADT	Certificate of Ancestral Domain Title
CAR	Comprehensive Agrarian Reform
CBFM	Community-based Forest Management
CBFMA	Community-based Forest Management Agreement
CDMP	Comprehensive Development and Management Plan
CFP	Community Forestry Program
CI	Conservation International
COMSCA	Community Management Savings and Credit Association
CSC	Certificate of Stewardship Contract
CSO	Civil Society Organization
DA	Department of Agriculture
DAO	Department Administrative Order
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DIWA	Development Indigenous Women's Association
DMC	Department Memorandum Circular
DOLE	Department of Labor and Employment
DOST-PAGASA	Department of Science and Technology-Philippine Atmospheric, Geophysical and Astronomical Service
DTI	Department of Trade and Industry
DPWH	Department of Public Works and Highways
EDC	Energy Development Corporation
EDF	Economic Development Foundation
EO	Executive Order
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus Group Discussion
FIDA	Fiber Industry Development Authority
FLR	Forest Land Restoration
FLUP	Forest Land Use Plan
FMB	Forest Management Bureau
FMO	Fisheries Management Office
FPIC	Free, Prior and Informed Consent
GIZ	Deutsche Gesellschaft for Internationale Zusammenarbeit

GMPC	Guisican Multi-purpose Cooperative
GSIS	Government Service Insurance System
IEC	Information, education and communication
IFMA	Integrated Forest Management Agreement
IPCC	Intergovernmental Panel for Climate Change
ISFP	Integrated Social Forestry Program
JICA	Japan International Cooperation Agency
KEF	Kalahan Educational Foundation
KII	Key-informant Interview
KMMBK	Kooperatiba ng mga Maliliit na Magniniyog sa Barangay Kanapawan
LBC	Local Barangay Council
LGU	Local Government Unit
LLDA	Laguna Lake Development Authority
LPG	Liquefied Petroleum Gas
MANAMSI	Mga Nagkakaisang Mangingisda ng Silonay
MOA	Memorandum of Agreement
MPA	Marine Protected Area
NAP	National Action Plan
NCI-SRD	National Convergence Initiative for Sustainable Rural Development
NEA	National Electrification Administration
NGA	National Government Agencies
NGCP	National Grid Corporation of the Philippines
NGO	Non-governmental Organization
NGP	National Greening Program
NPA	New People's Army
NPC	National Power Corporation
PAFID	Philippine Association for Inter-cultural Development, Inc.
PAMANA	Payapa at Masaganang Pamayanan
PENRO	Provincial Environment and Natural Resources Office
PHP	Philippine Peso
PO	People's Organization
RA	Republic Act
RDI	Rural Development Institute
REDD+	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries Plus
RIC	Rural Improvement Club
RUP	Resource Utilization Permit
SBPTI	Samahan ng Balian para sa Pagpapauwi ng Tubig, Inc.
SBUFA	Sitio Binguit Upland Farmers Association
SEC	Securities and Exchange Commission
SNPS	Sama-samang Nagkakaisang Pamayanan ng Silonay
STRAP	Southern Tagalog
TKFPI	Tao-Kalikasan Foundation of the Philippines, Inc.
TLA	Timber License Agreement
TSI	Timber Stand Improvement
TUFA	Talobatib Upland Farmers Association

UDP	Upland Development Program
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention for Climate Change
USAID	United States Agency for International Development
USD	US Dollars
YISEDA	Young Innovators for Sustainable Economic Development Association

I. INTRODUCTION

This study on "Assessing Livelihood and Ecological Benefits from Restoration Initiatives" was conducted in five sites in the Philippines, as part of a cross-country comparative analysis including the countries of Cameroon and Peru. The comparative analysis aimed to develop an empirical knowledge base and an opportunity to learn from the restoration initiatives in terms of their approaches, and resultant effects along ecological, economic and social dimensions.

A. Study questions

The Philippines study addressed the following questions, which were consistent across the three countries of comparison:

1. What are the social, economic and ecological benefits and drawbacks of different restoration approaches?
2. How are forest landscape restoration initiatives being governed and monitored?
3. To what extent are initiatives enhancing biodiversity in restored areas? Which ecosystem services are improved through the restoration initiative, and over which time scale?
4. To what extent do local women's and men's participation in forest land restoration (FLR) initiatives influence ecological outcomes?

This study was not designed to evaluate restoration interventions but rather to distill good practices and principles in achieving livelihood and ecological outcomes across sites, that can inform future restoration initiatives. This research could also offer current initiatives empirical evidence to help them adjust their practices for enhanced socio-ecological and economic benefits.

B. Country restoration context

Restoration initiatives in the Philippines have been implemented and driven by various actors and stakeholders, primarily to rehabilitate degraded forest lands. These actors include: (1) national government agencies (NGAs); (2) private sector; (3) local communities and People's Organizations[1] (POs); (4) local government units (LGUs); and (5) non-governmental organizations (NGOs). Most restoration initiatives are conducted through the government, but these may also involve other actors.

The most common strategies for restoration adopted by the Filipino government are: (1) afforestation; (2) reforestation; (3) assisted natural regeneration (ANR); (4) enrichment

[1] In the Philippines, a People's Organization (PO) is defined as "a bona fide association of citizens with demonstrated capacity to promote the public interest and with identifiable leadership, membership and structure" (http://congress.gov.ph/legisdocs/basic_17/HB01598.pdf)

planting; (5) timber stand improvement (TSI); and (6) agroforestry (Cruz et al., 2007). Afforestation refers to the establishment of planted forests in historically non-forested land (IPCC, 2000), while reforestation refers to the establishment of forest plantations on temporarily unstocked lands that are considered as forest (Philippine Forestry Statistics, 2014). Moreover, assisted natural regeneration (ANR) aims to hasten the renewal of trees and their understory by transplanting wildlings into open areas adjacent to the existing forest lines, protecting existing seedlings, and eliminating vegetative competition of existing desired seedlings in the area (IPCC, 2000; Shono, et al., 2007), while enrichment planting involves artificial planting of species in local reforestation programs in inadequately stocked forests, usually due to intense logging operations, to facilitate the natural recovery of forest (Keefe et al., 2009). Timber stand improvement (TSI) refers to periodic treatments such as thinning, cull tree removal, and juvenile tree release in residual forests after harvesting or in immature stands to stimulate the growth of the remaining trees and desired tree crops (Cornell Cooperative Extension, 2004). Lastly, agroforestry refers to land use management practices that combine agricultural and tree crops simultaneously or sequentially over time (Philippine Forestry Statistics, 2014:119).

The first government initiatives in support of forest restoration in the Philippines began in 1910, at the Forestry School (now the University of the Philippines Los Baños College of Forestry and Natural Resources) in the province of Laguna, when the students and faculty planted seedlings on the campus to replace the grassland vegetation (Pulhin et al., 2006). By 1960, a Reforestation Administration was created by virtue of the Republic Act (RA) 2706.[2] The aim was specifically to perform "productive reforestation work" to cover areas identified in an law RA 115[3] to be reforested and declared as permanent forest reserves once these had been planted with tree species (RA 2706, 1960). Subsequent reforestation efforts were carried out by the Bureau of Forestry, which was reorganized into the Department of Environment and Natural Resources (DENR) by Executive Order (EO) 192 in 1987. Data from 1994 to 2014 reveal that the government contributed an average of 65,125 hectares (or about 83.6%) to the reforestation efforts, while non-government sectors contributed an average of 12,733 hectares (or about 16.3%) of forestland for restoration through different strategies and mechanisms (Table 1).

TABLE 1. REFORESTATION BY SECTOR, 1994-2014 (IN HECTARES)

YEAR		GOVERNMENT SECTOR			NONGOVERNMENT SECTOR			
	GRAND TOTAL	TOTAL	DENR	OTHER GOVERNMENT AGENCIES	TOTAL	TIMBER LICENSES	IFMA/ SIFM/ CBFMA/	OTHER

[2] Act creating the Reforestation Administration (June 18, 1960)

[3] Act to provide funds for reforestation and afforestation of denuded areas and cogon or open lands within forest reserves, communal forest, national parks, timber lands, sand dunes, and other forest lands in the Philippines, and providing penalties for violation of the provisions thereof (June 7, 1947)

							TF/PLA /TPLA	
2014	334,302	315,278	306,468	8,810	19,024	-	-	19,024
2013	333,160	326,160	273,971	52,135	7,054	-	-	7,054
2012	221,763	207,011	132,710	74,334	14,719	-	-	14,719
2011	128,558	102,884	82,163	20,721	25,674	-	-	25,674
2010	36,877	32,384	32,384	-	4,493	3,737	756	-
2009	54,792	53,842	53,842	-	950	-	950	-
2008	43,609	27,752	27,752	-	15,857	182	928	14,747
2007	27,837	25,024	25,024	-	2,813	-	-	2,813
2006	7,223	4,476	4,476	-	2,747	-	-	2,747
2005	16,498	7,187	7,187	-	9,311	341	6,337	2,633
2004	20,338	12,436	12,436	-	7,902	2,836	4,431	635
2003	15,088	13,195	6,565	6,630	1,893	842	1,034	17
2002	25,620	20,681	9,111	11,570	4,939	564	3,850	525
2001	31,444	26,524	26,484	40	4,920	1,410	2,721	789
2000	27,632	21,740	19,059	2,681	5,892	1,989	3,421	482
1999	42,167	31,184	30,831	353	10,983	6,904	-	4,079
1998	42,368	32,643	32,643	576	9,149	8,236	-	913
1997	66,237	48,490	48,490	811	16,936	14,357	-	2,579
1996	46,096	18,869	18,869	-	27,227	20,005	-	7,222
1995	65,233	21,841	21,841	-	43,392	30,380	-	13,012
1994	49,551	18,032	18,032	-	31,519	9,468	18,729	3,322

Source: Philippine Forestry Statistics, 2014

In 2011, the Filipino government launched the National Greening Program (NGP), through DENR, as its prime reforestation program. The NGP aims to implement sustainable management of natural resources through conservation, protection and productivity enhancement of the forestlands, ancestral domains, civil and military reservations and other important sites throughout the country's 16 administrative regions (DMC-01, 2011). The program aimed to plant 1.5 billion trees covering about 1.5 million hectares over six years between 2011 and 2016 (EO 26, 2011). Table 2 presents the total area planted by the NGP per administrative region and sector between 2011 and 2014. In November 2015, the scope and extent of NGP were extended to cover all remaining unproductive, denuded and degraded forestlands from 2016 to 2028 (EO 193, 2015).

TABLE 2. AREA PLANTED BY THE NATIONAL GREENING PROGRAM (NGP), 2011-2014 (IN HECTARES)

Sector/Agency	Area			
	2011	**2012**	**2013**	**2014**
Philippines	128,559	221,764	333,160	334,302
DENR	82,164	132,711	273,971	306,468
Central Office		15,531	15,708	28,313
Other DENR Projects	1,027	31,527	1,741	10,778

Sector/Agency	Area			
Regional Offices	81,137	117,180	256,522	267,377
OTHER PARTNERS	46,395		59,189	27,834
ARMM – Autonomous Region in Muslim Mindanao		597	1,810	2,319
DA – Department of Agriculture	-	-	-	2,133
EDC – Energy Development Corporation	1,684			917
Foreign Assisted and Special Projects Service	-	-	-	3,372
GSIS – Government Service Insurance System	-	-	-	50
LLDA – Laguna Lake Development Authority	-	-	-	517
Mining Companies	7,756	11,613	5,882	17,708
NEA – National Electrification Administration	31	-	-	160
NGCP – National Grid Corporation of the Philippines	-	-	-	261
PAMANA – Payapa at Masaganang Pamayanan	-	-	-	259
SM Foundation, Inc. (SMFI)				138
CSO/NGO	-	1,301	-	-
IFMA holders	-	5	-	-

Source: Philippine Forestry Statistics, 2011-2014

Private sector initiatives, in comparison, are largely connected to timber license agreements (TLAs) and Integrated Forest Management Agreements (IFMAs). TLAs are privileges granted by the Filipino government to utilize forest resources within a forestland with the right of possession and occupation, but with the corresponding obligation to develop, protect and rehabilitate the area. IFMAs are a production sharing contract between DENR and a qualified applicant. The applicant is granted the exclusive right to develop, manage, protect, and utilize a specified area of forestland and forest resources for a period of 25 years, renewable for a further 25 years according to the approved Comprehensive Development and Management Plan or CDMP (DENR Administrative Order (DAO) No. 99-53). Included in the CDMP is the responsibility of the holders to convert degraded residual forests within the IFMA area into productive areas using one or more methods of: enrichment planting, timber stand improvement (TSI) and assisted natural regeneration (ANR), reforestation of open/denuded lands, and establishment of rattan plantations and other suitable non-timber species. Table 3 shows the number of holders, agreements, and land cover under TLAs and IFMAs between 1994 and 2014.

TABLE 3. *AREAS COVERED BY TLAS AND IFMAS, 1994-2014*

Year	Timber License Agreement (TLA)		Integrated Forest Management Agreement (IFMA)	
	No. of TLAs	Total area covered (in hectares)	No. of IFMAs	Total area covered (in hectares)
2014	2	119,560	140	1,005,951
2013	3	177,085	140	1,005,951

Year	Timber License Agreement (TLA)		Integrated Forest Management Agreement (IFMA)	
	No. of TLAs	Total area covered (in hectares)	No. of IFMAs	Total area covered (in hectares)
2012	3	177,085	140	1,005,951
2011	3	177,085	146	1,034,192
2010	4	252,510	145	1,018,795
2009	4	252,510	151	864,498
2008	13	587,030	143	764,819
2007	15	691,019	153	833,597
2006	15	691,019	149	767,665
2005	18	778,943	169	674,000
2004	14	537,765	192	710,000
2003	15	616,245	190	703,066
2002	17	740,680	117	199,437
2001	19	863,605	120	267,256
2000	19	863,605	120	218,082
1999	19	858,864	169	454,113
1998	20	933,650	177	462,327
1997	25	1,207,900	179	405,243
1996	35	1,465,186	200	422,505
1995	37	1,497,116	213	435,746
1994	37	1,6575,395	189	357,247

Source: Philippine Forestry Statistics, 1994-2014

The decrease in TLAs over time is due to various factors. First, the increasing number of requirements needed to secure a permit to utilize timber in the area or to renew a TLA is burdensome. Second, the ever-increasing requirements imposed on TLA holders made newer initiatives on community forestry ─ like the Community-based Forest Management ─ more attractive. Lastly, the passing of EO 23 or the logging moratorium in all areas except plantations in 2011 caused a drastic decrease in TLAs (Pulhin & Ramirez, 2015). Moreover, there was a noticeable downturn in the pattern of IFMA issuance from its peak in 1995 to its lowest point in 2002, which peaked again temporarily in 2003, only to decline again steadily until 2014.

Meanwhile, the first innovative approach involving local communities in restoration initiatives can be traced back to the implementation of the Forest Occupancy Management in 1971, which was followed by the Family Approach to Reforestation in 1974, and the Communal Tree Farms in 1979. These approaches organized and engaged local communities and families into the beginnings of POs to plant forest trees and some agricultural crops for subsistence. By 1982, the birth of the Integrated Social Forestry Program (ISFP) was not only geared towards reforestation of denuded forestlands but also towards the promotion of social justice, poverty alleviation and environmental protection among community members vis-à-vis Certificate of Stewardship Contracts (CSC). By 1989, the ISFP was elevated to the Community Forestry Program (CFP).

These programs were the precursors of Community-based Forest Management (CBFM) as the national strategy to ensure decentralized, sustainable development of the forestlands and other natural resources in the Philippines. By virtue of the EO 263, 1995 policy, the DENR

was mandated to forge partnerships with the LGUs, POs, NGOs, religious groups, business and industry, and other concerned organizations to achieve the goals of this policy. Partnerships with local communities were formalized through the issuance of Community-based Forest Management Agreements (CBFMA) by DENR to qualified applicants. Table 4 presents the total area coverage of the issued CBFMAs from 1997 to 2014.

The increasing number of CBFMAs from 1997 to 2004 declined from 2005 onwards. This may be because some of the CBFMAs were canceled or transformed into other tenurial instruments, such as the Certificate of Ancestral Domain Title (CADT). A CADT is a perpetual tenurial instrument acknowledging the right of indigenous peoples to control and manage their own lands in accordance with their traditional ways.

TABLE 4. *AREA COVERED BY THE CBFMA, 1997-2014*

YEAR	No. of CBFMAs issued	Tenured area (hectares)	Beneficiaries	
			No. of households	No. of people's organizations
2014	1,884	1,615,137	191,352	1,884
2013	1,884	1,615,137	191,352	1,884
2012	1,888	1,605,403	192, 090	1,888
2011	1,790	1,633,891	322,248	1,790
2010	1,815	1,604.662	252,839	-
2009	1,790	1,633,891	322,248	1,790
2008	1,783	1,622,404	321,638	1,783
2007	1,783	1,622,403	321,638	1,783
2006	1,781	1,622,129	321,538	1,781
2005	1,781	1,622,129	-	1,781
2004	5,503	4,904,116	690,691	2,877
2003	5,503	4,904,116	690,691	2,877
2002	4,956	4,395,740	496,165	2,182
2001	4,956	4,395,739	496,165	-
2000	4,885	4,276,069	477,984	-
1999	4,659	4,010,974	-	-
1998	3,967	3,934,033	-	-
1997	4,829	4,300,830		

Source: Philippine Forestry Statistics, 1997-2014

Partnerships with local government units (LGUs) and non-governmental organizations (NGOs) have been ongoing over the last 15 years towards supporting forest restoration efforts. DENR has continuously collaborated with the LGUs in formulating and implementing the Forest Land-use Plan (FLUP) towards the protection, development, management, and oversight of various resources in their respective localities. Most local leaders expressed their willingness to collaborate with DENR and national government agencies to rehabilitate and restore local watersheds, address weak tenure rights, assist poor upland communities and protect the remaining natural forests (EcoGov Project, 2011). NGOs have also partnered with

LGUs, national government agencies (NGAs), and people's organizations (POs) or local communities on forest rehabilitation and technical support.

C. Pledges and ongoing efforts

As such, the Filipino government has achieved certain benchmarks in its restoration initiatives. For one, the Forest Management Bureau (FMB) of the DENR was awarded the prestigious Edouard Saouma Award for Excellence by the Food and Agriculture Organization of the United Nations (FAO) in 2011. The award recognized outstanding achievements in forest restoration in an ANR project, which was funded by the Technical Cooperation Programme of FAO with a total budget of US$253,000. One of the ongoing activities under this project was the hands-on training for the local communities on ANR wherein participants scoured approximately 20-hectares of a demonstration area looking for tree seedlings on which they could practice some ANR techniques (FAO, 2011).

According to FAO (2011), the Philippines' international commitments towards forest landscape restoration efforts are threefold. First, the Philippines is committed to achieving an increase of 8.3 million hectares of forest cover as its contribution to the goal of increasing the Asia-Pacific Economic Cooperation (APEC) region's forest cover by at least 20 million hectares between 2007 and 2020 (APEC, 2015). Second, it participates in the International Model Forest Network through the Asia Regional Model Forest Network. Lastly, it commits to the Rio Conventions, and accordingly has created a Climate Change Commission, prepared a National Action Plan (NAP) as part of its commitment to the UN Convention to Combat Desertification (UNCCD), and upgraded its 1997 National Biodiversity Strategy and Action Plan into the 2015-2028 Philippine Strategy and Action Plan. The latter builds on the country's commitments to implement the Convention on Biological Diversity Strategic Plan for 2011-2020 and the Aichi Biodiversity Targets.

At the national level, the Philippines fulfills its commitments through the extension of the National Greening Program (NGP) until 2028, the creation of the National Convergence Initiative for Sustainable Rural Development, which is a multi-sectoral and integrated planning approach adopted by the Department of Agriculture (DA), the Department of Agrarian Reform, and DENR towards the preparation for REDD+ initiatives, as well as implementing and/or promoting several EOs, laws, regulation and rules to combat deforestation and degradation, prevent illegal logging, and improve local forest-based livelihoods (DENR, 2012).

II. METHODOLOGY

This study is part of a larger cross-country comparative research on restoration, which also includes the countries of Cameroon and Peru. The Philippines was chosen as part of this study because of its rich history of restoration projects dating back to the early 1970s, which can inform future restoration approaches not only in the Philippines but also in other countries. The Philippines also provides experience with regards to the participation of various stakeholders in the restoration/rehabilitation of degraded landscapes and natural resources.

A. Site Selection and Sampling

The study sites in this study were selected according to the principles of maximum diversity sampling in order to know what works, where, and why. These principles of diversity consider: (1) variability in location, wherein one country was selected per continent; (2) climatic and agroecological gradients in the country; and (3) diversity of restoration approaches (i.e. assisted natural regeneration, agroforestry, restoration of common property lands whether in pastures and/or forests) and scale (i.e. large and small scale). Projects were thus sampled across climatic zones (i.e. dryer and wetter climates) and represent a variety of restoration approaches implemented across different tenure regimes. Another criterion for site selection was that restoration initiatives needed to have been running for at least five years to allow time for the outcomes to materialize. In cases where more than one community was involved in a given initiative, different community attributes such as distance from large road or markets to the communities were considered to evaluate whether the restoration initiatives had the same effects in different communities across these variables.

Dryer and wetter climatic zones were based on Corona's four climate types (Figure 1), which follow monthly rainfall in a particular locality during the year. As such, Type I climate refers to areas with a distinct dry and wet season: wet from June to November and dry for the rest of the year. Type II climate refers to areas with no dry period at all throughout the year, and a pronounced wet season from November to February. Type III climate refers to areas with a short dry season, usually from February to April, and Type IV climate refers to areas with almost evenly distributed rainfall throughout the year (DOST-PAGASA, 2011). Thus, the following sites were selected: (1) Labo, Camarines Norte (Type II); (2) Calapan City, Oriental Mindoro (Type III); (3) Maasin City, Southern Leyte (Type IV); (4) Santa Fe, Nueva Vizcaya (Type I); and (5) Pangil, Laguna (Type III) (Table 5).

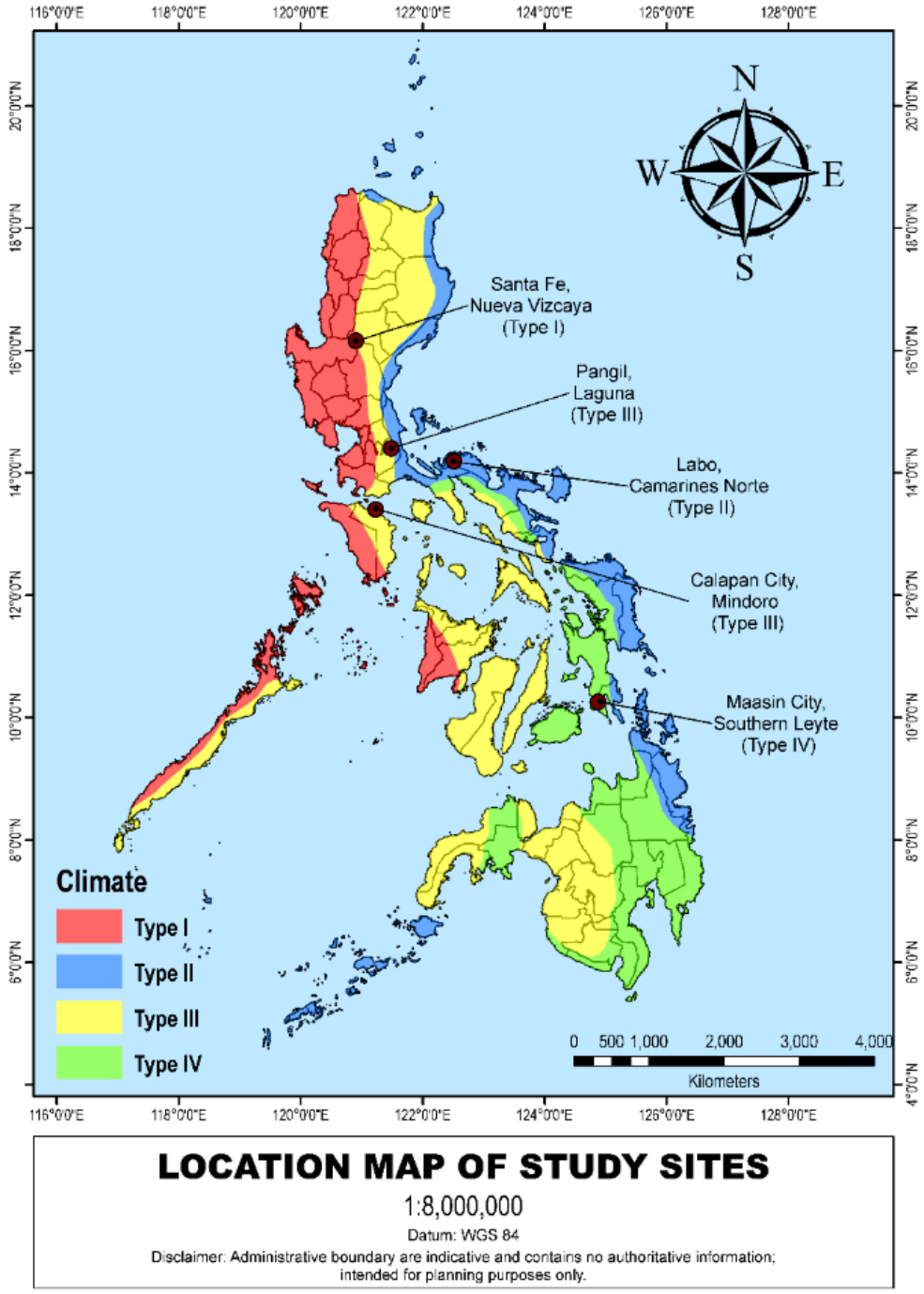

FIGURE 1 STUDY SITES IN THE PHILIPPINES

Adapted from: Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) http://bagong.pagasa.dost.gov.ph/.

TABLE 5. *STUDY SITES ACROSS CLIMATIC REGIONS AND TYPES OF RESTORATION APPROACHES*

	Wetter climate	Dryer climate
Large-scale (industrial or government plantations)	Site 2: Calapan City, Oriental Mindoro [Type III]	
Small-scale plantations	Site 5: Pangil, Laguna [Type III]	
Natural assisted regeneration/ agroforestry	Site 3: Maasin City, Southern Leyte [Type IV]	Site 4: Sta. Fe, Nueva Vizcaya [Type I]
Pastures, forests	Site 1: Labo, Camarines Norte [Type II]	

Once the study sites were selected, coordination with POs was conducted by writing formal letters and by cellular phone exchanges with the PO contact persons. If the POs agreed to host the study in their areas, the study team made the necessary logistical arrangements to facilitate the team's entry into the respective communities. In the communications sent to the POs, the study team specified the secondary data needs, lists of participants for key-informant interviews (KII) and focus group discussions (FGD). The study team also inquired about the most convenient schedules for the POs to conduct the study activities. Once these matters were agreed upon by both parties, the POs were called upon by the research team for assistance with the recruitment of study participants and with venues and meals.

In recruiting research participants, careful attention was placed on having an equal number of male and female participants to understand gender-differentiated experiences within the restoration initiatives. Ninety-four research participants were included in the study, with an overall equal participation of men and women across the study sites (Table 6). Efforts were made to select participants across age and generational groups (Table 6).

TABLE 6. *RESEARCH PARTICIPANTS PER STUDY SITE*

GENDER	STUDY SITE					TOTAL	PERCENT (%)
	1	**2**	**3**	**4**	**5**		
	Labo, Camarines Norte	Calapan City, Oriental Mindoro	Maasin City, Southern Leyte	Santa Fe, Nueva Vizcaya	Pangil, Laguna		
Male participants	10	11	8	9	9	47	50
Female participants	9	11	10	7	10	47	50
Age group 18-45	9	9	7	4	6	35	37
Age group 45-65	8	11	9	11	10	49	52

Age group 66-85	2	2	2	1	3	10	11
TOTAL	19	22	18	16	19	94	100

The five KII respondents comprised community leaders with a high position in their respective organizations such as elders, barangay officials[4], youth leaders, treasurers, and secretary. Of the project staff, two were presidents, two management officers/implementers, and one secretary of their respective organizations. FGD participants were mostly farmers, drivers, housewives, and teachers, among others.

[4] A barangay is the smallest political unit in the Philippines.

B. Methods

The study was conducted by a team of five focal persons during the months of November and December 2018 (detailed in Annex 1). This study used qualitative methods to fulfil the study's objectives of distilling good practices across study sites to inform future restoration initiatives. All the data collected were based on participants' perceptions of practices on the ground. Two methods were used: semi-structured KIIs and FGDs. Key informant interviews (KIIs) are interviews conducted to collect information from people who have first-hand knowledge, information, ideas, and insights about a given topic (Kumar, 1989:1; Blenkinsopp et al., 2018). Focus group discussions (FGDs) are discussions in small groups, usually consisting of 8 to 12 people, around a topic of interest (Krueger, 2002; Nyumba et al., 2018).

KIIs were conducted with community leaders, and restoration initiative project staff─preferably the most experienced and knowledgeable person with respect to the project's implementation. If the project had long since been terminated, the research team interviewed available personnel who had knowledge about the project's history and activities. Project staff were usually interviewed on the first day of fieldwork to give the study team a detailed description and overview of activities that were conducted during the restoration initiatives. Most of the project staff were community members who were employed by the government agencies and/or non-governmental organizations that spearheaded the restoration initiatives. KIIs were also conducted with community members, both male and female, who held important positions in, and a good overview of, their community.

Two FGDs were additionally carried out in each study site, with female and male community members grouped separately. Around 7-10 adult men and 7-10 adult women from poor to medium-income levels relative to the rest of their village were recruited in the FGDs (Table 6), as the focus of the study was on the livelihood impacts of the restoration initiatives on those who were economically marginalized. None of those invited in the FGDs belonged to the same households/roof/compound, and care was taken to ensure that the research participants represented different neighborhoods and age groups within the village. If powerful and well-positioned village actors such as the village chief, deputies, etc. came to participate (despite not being invited), they were considered as key-informants and were interviewed individually rather than integrated into the FGDs. In this way, the study team was able to show them that their opinions were also valuable, while giving the necessary space for others to express themselves in the FGDs.

Secondary data were collected from study villages through the village leaders, who authorized the release of pertinent documents for reproduction/publication. These secondary data were photographed and collated into composite documents. Information available online was also consulted as a reference for the description of the biophysical and demographic characteristics of study sites.

III. RESULTS

Results are presented in seven sections as follows: (1) Brief overview of the study sites; (2) Restoration initiatives; (3) Key activities; (4) Species planted or preserved; (5) Community engagement; (6) Impacts; and (7) Impact pathways. Comparative analyses of the five study sites were conducted for each of these thematic areas.

A. Brief Overview of the Study Sites

Table 7 summarizes the key characteristics of the five study sites: (1) Tigbinan, Labo, Camarines Norte; (2) Silonay, Calapan City, Oriental Mindoro; (3) Lunas, Maasin City, Southern Leyte; (4) Sta. Fe, Imugan, Nueva Vizcaya; and (5) Balian, Pangil, Laguna.

TABLE 7. *KEY CHARACTERISTICS OF THE STUDY SITES*

CRITERIA	STUDY SITES				
	1	2	3	4	5
Location	Labo, Camarines Norte	Calapan City, Oriental Mindoro	Maasin City, Southern Leyte	Santa Fe, Nueva Vizcaya	Pangil, Laguna
Barangays where restoration initiatives were located	Tigbinan	Silonay	Lunas	Imugan	Balian
Corona's Climatic Type[5]	Type III	Type II	Type IV	Type I	Type II
Municipality/City class[6]	First	Third	Third	Third	Fourth
Total land area	589.36 km^2 (227.55 sq. mi)	250.06 km^2 (96.55 sq. mi)	211.71 km^2 (81.74 sq. mi)	399.81 km^2 (154.37 sq. mi)	45.03 km^2 (17.39 sq. mi)
Estimated population size	101,082	133,893	85,560	16,180	24,274
Population density	170/km^2 (440/sq. mi)	540/km^2 (96.55/sq. mi)	400/ km^2 (1,000/sq. mi)	40/km^2 (100 sq. mi)	540/km^2 (1,400/sq. mi)
Revenue[7]	243.9 million	629.6 million	488.0 million	96.2 million	78.2 million

[5] Corona's CLIMATIC CLASSIFICATION of the Philippines consists of four climatic types as discussed in Part II A (Site selection).

[6] Municipality class is based on income classes, based on average annual income, namely: (1) First Class (Class 1) – at least 55,000,000 pesos; (2) Second Class (Class 2) – from 45,000,000 to 54,999,999 pesos; (3) Third Class (Class 3) – from 35,000,000 to 44,999,999 pesos; (4) Fourth Class (Class 4) – from 25,000,000 to 34,999,999 pesos; (5) Fifth Class (Class 5) – from15,000,000 to 24,999,999 pesos; and (6) Sixth Class (Class 6) with at most 14,999,999 pesos.

[7] In PHP; estimated in 2016.

CRITERIA	STUDY SITES				
	1	2	3	4	5
Main ethnic group(s) of the village	Agta (Aeta)[8] Bicolano	Mindorenos[9]	Bisaya	Ikalahan, Kalanguya Ilokano	Tagalog
Estimated village/barangay population	3,155	~1400	2071	More than 700	~4000
Access to nearest town or city (km)	16	2.5	11	8	~5
Distance to nearest market (km)	<1	2	<1	<1	<1

B. Restoration Initiatives

Table 8 presents a summary of information on the restoration initiatives by study site.

TABLE 8. *RESTORATION INITIATIVE CHARACTERISTICS*

DETAILS	RESTORATION INITIATIVE PER STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Imugan, Santa Fe, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
Restoration Initiative leader	TKFPI[10]	Silonay Mangrove Conservation and Ecotourism Park	YISEDA[11]	KEF[12]	SBPTI[13]
Type of restoration initiative	Reforestation (from grasslands to upland forests); Community Forestry Program;	Reforestation (mangrove) Eco-tourism	Agroforestry; Small-scale reforestation (4-hectare plantation); Community-Based Forest Management Program (CBFM);	Assisted natural regeneration; Community-based Forest Management	Assisted Natural Regeneration ; Reforestation ; National Greening Program

[8] The Aeta in Labo, Camarines Norte belongs to the Negrito ethno-linguistic group" (Ethnic groups in the Philippines, 2011.)

[9] The Ikalahan of Nueva Vizcaya belongs to the Igorot tribe (i.e. mountain people) that practices swidden farming (inum-an) of camote (*Ipomoea batatas*) and yam (*Dioscorea alata*)

[10] Tao-Kalikasan Foundation of the Philippines, Inc.

[11] Young Innovators for Social and Environmental Development Association

[12] Kalahan Educational Foundation

[13] Samahan ng Balian para sa Pagpapauwi ng Tubig, Inc.

DETAILS	RESTORATION INITIATIVE PER STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Imugan, Santa Fe, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
	National Greening Program		Reforestation; Assisted natural regeneration		
Initiator	Non-governmental organization (i.e. BOARDFI)	Government (i.e. 22 Barangay Officials)	Private individuals	Indigenous peoples (i.e. Kalahan/Kalanguya)	Community members
Funding sources	DENR, BOARDFI, TRIAS, NPC, LGU, DA, FIDA, Philippine Coconut Authority	City and provincial governments; PATH Foundation; Conservation International	NGOs, REDD+, GIZ. DENR, LGUs	KEF, ICCO, USAID, community leaders	No funding sources received by the barangay on this project
Participants	Men, women, out-of-school-youth, indigenous peoples	Members of SNPS[14], youth, senior citizens, women, men, fisherfolk	Women, men, youth, YISEDA members, farmers' association members	All Kalahan communities, political leaders, group of Ilocanos	All water consumers
Year started	1992	2007	2000	1973	1925
Year ended	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing, with only a few members

The selected restoration initiatives had been up and running for at least 11 years (i.e. Site 1), with the oldest initiative spanning 94 years (i.e. Site 5). The restoration initiatives were mostly conducted by the People's Organizations (POs), which received technical and/or financial assistance from NGOs, government agencies, private individuals, international organizations, and intergovernmental networks. Participants were recruited mainly from the nearby communities, and included men, women, elders (men and women), indigenous peoples, youth and other sectors. The five restoration initiatives are described below.

[14] Sama-samang Nagkakaisang Pamayanan ng Silonay

1. Restoration Initiative for Site 1

Tao-Kalikasan Foundation of the Philippines, Inc.
(Source: http://www.tao-kalikasan.org/)

The restoration initiative in Site 1 was conducted by the Tao-Kalikasan Foundation of the Philippines, Inc. (TKFPI), a non-profit people's organization (PO) based in Barangay Tigbinan, Labo, Camarines Norte. The initiative began in 1992 under the Integrated Social Forestry Program (ISFP) of the Department of Environment and Natural Resources (DENR), which aimed for the rehabilitation and management of the upland forests in Labo, Camarines Norte. The initiative was also registered in 1992 under the Securities and Exchange Commission (SEC)[15] with about 700 original members. At present, it only included 263 individual members, including 127 men and 136 women.

a. Organizational set-up

TKFPI's mission is to deliver adequate livelihoods for its membership through restoration, management, and utilization of natural resources, thereby improving the standard of living and dignity towards sustainable development. TKFPI's Mission, Vision, and Values statement involves: (1) "Serving our people, sustaining lives" to have sufficient and secure livelihoods for all the members by restoring, protecting and using the natural resources to raise the standard of living and dignity towards sustainable development; (2) "Sustainable upland community" to sustain a strong, stable and progressive organization that provides quality services and income to members and improves the environment to generate a happy, united and pro-environment community; and (3) "Respect, transparency, hospitality, love".

TKFPI's main objectives are: (1) The expansion of TKFPI membership in various sectors of the community including women, youth, indigenous peoples and family farmers, and ensuring sustainable livelihoods; (2) Establishing quality services to members to have adequate knowledge in any chosen business; and, (3) Strengthening ties with various sectors of society and government agencies to raise funds, which would be utilized in environmental and economic programs and projects to improve the quality of life of members and reduce poverty. Programs and activities of TKFPI include forest rehabilitation, agroforestry and farm development, capacity building, enterprise development and skills training, seedlings and nursery establishment, trading and marketing of abaca handicrafts (rugs, eco-bags, storage baskets, etc.), citronella and other non-timber forest products.

TKFPI has five regular member organizations under its umbrella, each representing the barangay (i.e. villages) in Labo, Camarines Norte where TKFPI is working. These are (1) Guisican Multi-Purpose Cooperative (GMPC); (2) Kooperatiba ng mga Maliliit na Magniniyog

[15] SEC is an NGO in the Philippines charged with the "supervision of the corporate sector, the capital market participants, and the securities and investment instruments market, and the protection of the investing public" (http://www.sec.gov.ph/).

sa Barangay Kanapawan (KMMBK) [Cooperative of Small-scale Coconut Farmers]; (3) Sitio Binguit Upland Farmers Association (SBUFA); (4) Barangay Tigbinan Upland Farmers Association (BTUFA); and (5) Talobatib Upland Farmers Association (TUFA). TKFPI is also working with barangay officials through dialogue and consultations with relevant stakeholders for the rehabilitation, management, and protection of the environment.

The organization is accredited by the local government units (LGUs) and works with national government agencies (NGAs) such as the regional offices of DENR, Department of Trade and Industry, Department of Agriculture, Philippine Fiber Industry Development Authority, and the National Power Corporation. The TKPFI works with NGOs such as Trias and other CSOs. The organization also works with other organizations such as Community-based Forest Management (CBFM) associations and other upland farmers organizations/cooperatives. As an organization, it provides strong technical support on forest rehabilitation and management by supplying indigenous forest tree species, fruit trees, and non-timber forest species (e.g. abaca).

In a study conducted by Borja (2002) on TKFPI, results confirmed that the majority of TKFPI members perceived it as having high performance in sustainable upland resource management in terms of: (a) community bonding and organizing; (b) leadership development; (c) implementation plans and programs; (d) benefit-sharing schemes and livelihood opportunities; (e) good linkages and engaging people's participation in planning, implementation, and monitoring and evaluation; and (f) the system used for resource, protection and rehabilitation measures, and communication. Fifteen years later, a study was conducted by Hapac (2017) on the abaca-based Agroforestry (AF) project of TKFPI and DENR with the GMPC farmer-beneficiaries, a member-organization of TKFPI, in Barangay Guisican, Labo, Camarines Norte. Findings revealed that the organization has become younger in terms of personnel age (ranging from 31-40 years of age), has more female members (35 members or 74% of total members), more married staff (i.e. 37 members, or 79%), and high school graduates as the highest educational attainment (24 members, or 51%). Most respondents believed that the project had provided for the basic needs of their family, including sufficient funds for their children's schooling.

b. Sample restoration activities and outputs

In 2010, it was reported by Arguelles (2010) that the Bicol region houses 116 CBFMAs covering 49,080 hectares, with 116 POs, and benefits 8,320 people by implementing livelihood and agroforestry projects. The first project financed by its Agrarian Reform Fund was the Agroforestry Expansion Project implemented by TKFPI. Three TKFPI farmer-cooperative members implemented the 67-hectare project in Barangay Tigbinan (29 hectares), Barangay Kanapawan (19 hectares) and Sitio Benguet in Labo, Camarines Norte (19 hectares).

Among project accomplishments (from 2007-2010) were the: (a) planting of 67 hectares of agroforestry farms; (b) establishment of a 500m^2 nursery with a production of 107,254 indigenous and 6,700 grafted fruit-bearing trees; and (c) purchase and distribution of

15 heads of swamp buffalos (Filipino: *carabaos*) to members of TKFPI. The success of TKFPI in implementing the CBFM-CAR program attracted many POs to engage in the same program and activities. DENR in the Bicol Region implemented the CBFM program in 1994 pursuant to Executive Order No. 263 adopting CBFM as a national strategy to ensure the sustainable development of the country's forest resources. The main objective of CBFM is to train upland communities to form a partnership with DENR in the sustainable management of forest resources. DENR, in turn, sought LGUs, NGOs, and other civil society groups to assist in the actual implementation of the CBFM program. The participants were mainly residents within or adjacent to the forests, who were organized in POs and were entrusted the stewardship of hectares of land under the CBFMA.

More recently, TKFPI was included among the five CBFM projects to be studied and documented by DENR through its Forest Management Bureau for its benefit-sharing mechanism (Capina, 2019). TKFPI is expected to develop policy recommendations consisting of a portfolio of benefit-sharing mechanisms that POs may adopt. The project's inclusion in this portfolio attests to the successes of TKFPI.

c. Timeline of activities/events

Table 9 presents a brief summary of the timeline of events of TKFPI activities.

TABLE 9. *TIMELINE OF EVENTS SURROUNDING THE RESTORATION INITIATIVE OF TKFPI*

Year	Event
1991	Creation of the Tao-Kalikasan Foundation of the Philippines, Inc. (TKFPI)
1992	Registration of TKFPI in the Securities and Exchange Commission (SEC)
1995	Typhoon Rosing (International Name: Kit) Addition of a new community-based project, namely Community Forestry Program (CFMA 0002)
1997	715 hectares added to the reforestation coverage of TKFPI Application of a lumber dealership from DENR for their first harvest Start-up project for handicrafts
1998	Renewal of harvesting permits for the third harvest
1999	Diversification of the sources of livelihood and enterprises of TKFPI
2003	TKFPI falls apart due to lack of effective leadership on the ground
2009	TKFPI received a Comprehensive Agrarian Reform Program-Agroforestry from DENR funds for its livelihood projects
2010	TKFPI started its National Greening Program (NGP) involvement with DENR

Year	Event
2015	TKFPI was made as a partner of Trias, a Belgian NGO
2017	TKFPI started expanding its enterprises by exploring coco coir production with the Philippine Coconut Authority (PCA)

Source: KII with president of TKFPI (November 26, 2018)

When TKFPI was created in 1991, its main project focused on reforestation, and its strategy was to hire laborers from each barangay. TKFPI paid Php 500 or roughly USD 0.97 per month. As the reforestation project grew in size, more people were needed to support the process. In its second year, the TKFI was registered under the Securities and Exchange Commission (SEC). TKFPI recruited new members from the following barangays: (1) Kanapawan (coconut as the main commodity); (2) Tigbinan (multipurpose PO for reforestation); (3) Capalonga (Tanauan multipurpose); (4) Lugaban; and, (5) Guisican. Five percent of the reforestation contract went directly to the TKFPI; because of this, the reforestation project was deemed successful.

By 1995, TKFPI added a community-based project to its list of projects. The first project consisted of a Community Forest Management Agreement, which comprised 1000 hectares of land and included restoration initiatives such as reforestation, agroforestry, rattan plantation, ANR, and TSI. In 1997, a further 715 hectares were awarded to the project, extending TKFPI's community forest project to a total of 1,715 hectares in the Labo-Capalonga Forestry Reserve. In the same year, TKFPI applied for a lumber dealership under DENR, together with handicrafts under the restoration initiative, TSI. The organization also tapped the Department of Trade and Industry (DTI), the Department of Labor and Employment (DOLE), and other trade industries for assistance in order to market their handicrafts.

Later in 1997, a storm crushed and uprooted most of their seedlings. Fortunately, they were able to finish planting on the extra 715 hectares and were able to save Php 700,000 (USD 13,519), which they used for the next project. In the same year, their CAR-agroforestry program resulted in the harvesting of abaca in their plantations.

In 1998, DENR granted TKFPI a third harvesting permit. TKFPI also requested 30 percent of the trust fund from DENR to finance the reforestation project of the additional 20 hectares; and earned Php 80,000 (USD 1,545). However, after this cycle, there were no additional contracts from DENR, TKFPI detached itself from BOARDFI, the assisting NGO, and activities ceased.

Between 1997 and 1999, TKFPI focused on organizing and training its community members. However, some farmers considered TKFPI projects to be "lubog-litaw" (come-and-go, /unstable). For example, TKFPI launched a piggery project with 28 to 45 heads of pig. It spent all its savings on the piggery, including the grant it received amounting to Php 150,000 for the building of the piggery house. At first this project was unsuccessful, but it earned profits little by little until 2003.

By 2003, Mr. Endionello, then president of TKFPI ran for public office. When he was no longer actively involved in TKFPI, the membership crumbled. This organizational

instability resulted in the abandonment of the TKFPI projects and properties due to lack of supervision and maintenance. By 2008, TKFPI needed to draw from its savings to pay for the right to occupy the land on which its buildings and other structures were erected.

In 2009, a DENR Officer advised Mr. Endionello to return to TKFPI after the end of his term as a public official. Mr. Endionello explained that when he returned to TKFPI, there were no funds and the buildings were damaged. TKFPI offered them a start-up grant of Php 1 million from the Comprehensive Agrarian Reform Program-Agroforestry funds from DENR (Arguelles, 2010). With this grant money, TKFPI started planting again, this time adding abaca fibers as an additional livelihood project.

The efforts to revive TKFPI continued. In 2010, TKFPI applied for a National Greening Program (NGP) to plant trees in the CBFM areas. It participated in the public bidding for the NGP projects. However, Mr. Endionello realized that it was impossible for the upland farmer members to lead the organization if they were not able to fill out the bidding documents properly. He therefore approached BOARDFI to assist them in this. As a result, TKFPI's and BOARDFI's funds were joined and both parties' members were assisted in compiling the NGP project documents. To revive such an organization, it is necessary to hold savings of Php 1 million. The revived joint organization of TKFPI and BOARDFI therefore sourced its funds from the first NGP project that TKFPI implemented.

In 2015, TKFPI was incorporated into a Belgian NGO called Trias[16]. Trias ensures that medium- to small-scale farmers and entrepreneurs tap into opportunities in their own regions by establishing connections between urban and rural member-based organizations and by ensuring that all of Trias' partners' core capacities are continuously strengthened. In line with their organizational by-line, Trias funded the capacity-building of TKFPI members, conducting relevant training on business management, leadership, and on organizational capacity-building. A year later, TKFPI started a handicrafts business for its members who were women, out-of-school youth, and the unemployed. The handicraft business was based on basket-making using abaca fibers, which usually went to waste.

TKFPI currently supplies a US non-profit organization, the Creative Arts, and are currently its only contractor. TKFPI can deliver twice in a year with 1,000 sets of baskets per delivery. The price is pegged at USD 11.90 per set, providing TKFPI with a gross income of USD 11,900 per delivery. In 2017, TKFPI was able to acquire weaving and decorticating machines to further improve the quality of its products and in 2018, TKFPI began exploring an expansion of its businesses by venturing into coco coir production.

2. Restoration Initiative for Site 2

Silonay Mangrove Conservation Area and Ecotourism

[16] "Trias, Belgium's largest NGO": https://www.trias.ngo/en/about-trias

The restoration initiative in Site 2 is a 42-hectare protected area, named the Silonay Mangrove Conservation Area and Ecotourism. It is maintained by the Sama-samang Nagkakaisang Pamayanan ng Silonay (SNPS) or roughly translated to "United Silonay Community".

a. Description of the area

The site is best described by a travel website, Explora PH:

> "It is a haven of fireflies, migratory birds, various kind of fish, and of course, mangrove. Upon entering the area, travelers can leisurely walk deep into the mangrove forest through a 300-meter bamboo bridge. Found in the area are various types of mangrove such as the River Poison Tree, Asiatic Mangrove, Mangrove Apple, and Tall-Silted Mangrove. Best visited during high tide, this ecotourism zone offers kayaking (P50/hour, two seats), birdwatching (bring your own binoculars, November to March), and dolphin watching (April and May). Kayaking is the highlight of this destination. Aboard the colorful plastic kayaks, visitors would cruise through fishermen's trails, in between mangroves, and exit to Silonay River. During low tide, however, the mangrove forest reveals a muddy ground, where kayaking is not possible."[17]

The Silonay mangrove area is part of the province of Oriental Mindoro, and the entire Silonay Island covers about 87 hectares. The eco-park used to charge an entrance fee of Php 50 (USD 1) for regular visitors and Php 20 (USD 0.39) for students. However, it has been closed for renovation since the fieldwork started. All visitors of the eco-park were encouraged to plant mangrove propagules in the area and partake in the reforestation efforts of the SNPS.

According to a KII with an SNPS member, in the past, Silonay was losing its mangrove forests due to cutting of mangrove trees for firewood, both for consumption and sale. During the 2013 Typhoon Yolanda (International Name: Haiyan), the Silonay community saw hundreds of houses wiped out by storm surges; thus, community members assembled to initiate efforts towards reforestation in the wake of the typhoons. The success of their reforestation efforts attracted nearby communities and tourists to Silonay to see the vast tract of mangrove trees in the area. In turn, the repopulated mangrove area generated livelihood opportunities for community members, who earned Php 2 (USD 0.039) per seedling that is used in planting, and community members trained as tour guides, earning about Php 250 to 300 a day (USD 3.86 to 5.79). Other community members also earned income from the souvenir items and t-shirts that they produced or sold to the tourists.

[17] "Silonay Mangrove Conservation Area and Ecotourism": https://explora.ph/attraction/201/silonay-mangrove-conservation-area-and-ecotourism

b. Sample restoration activities and outputs

This project was initiated by Conservation International (CI) Philippines with support from the German Federal Ministry for the Environment, Nature Conservation, Building, and Nuclear Safety. CI Philippines attributed the Verde Island corridor, also known globally for its high number of endemic underwater species in Manado, Indonesia, to the "planting intervention" in the eco-park. It involved relentless planting of mangrove propagules to the brackish wetlands along the shores of Silonay, which was highly vulnerable to storm surges (Philippine Daily Inquirer, 2014). Alma Bool, a community member elected as a treasurer of the SNPS, recently received an award at the World Coral Reef Conference for her work on marine conservation in this part of the corridor.

A mangrove watchtower was funded through the Direct Assistance Program of the Australian Embassy. The main attraction of the eco-park was the mangrove boardwalk launched in 2013, which was closed during this fieldwork. In 2014, the Bantay Kalikasan-Green Initiative, a national NGO, adopted SNPS to support its community-managed ecotourism/agritourism and other social enterprises with the public and private sectors.

c. Timeline of activities/events

As a Marine Protected Area, the Silonay mangrove project is able to conserve the mangrove forests in the area. With the help of the International Climate Initiative (IKI) and Conservation International, many projects and opportunities supported the organization's efforts to maintain the eco-park. Table 10 presents the timeline of activities/events of the SNPS restoration initiative.

TABLE 10. *TIMELINE OF EVENTS OF THE SNPS RESTORATION INITIATIVE*

Year	Event
2009	Baseline mangrove assessment was started, and mapping was conducted by CI and the provincial and city governments
2011	Official declaration of the Silonay mangrove area as a Marine Protected Area (MPA) through the Fisheries Ordinance of the city council. Reforestation officially commenced.
2013	The eco-park was opened to the public
2015-2017	SNPS was allotted funds (i.e. PHP 200,000 per year) by its partners, such as NGOs, the city government and the fisheries management office

Source: KII with a community member of Silonay (29 November, 2018)

By 2014, the eco-park boasted 14 mangrove species, 2 bat species, and 29 bird species. Among the most common birds found on Silonay Island are the black-naped oriole (*Oriolus chinensis*) white-throated kingfisher (*Halcyon chloris*), and the yellow-vented bulbul (*Pycnonotus goaivier*), the fruit bat (*Ptenochirus jagori*) and the nectar bat (*Macroglossus*

minimus).[18] Conservation International, which funded a number of projects in Silonay, documented the following species in the area: eight species of mangrove in 2009, namely "pipisik puti" (*Avicennia marina*), "pipisik pula" (*Avicennia officinalis*), "pagatpat" (*Sonneratia alba*), "bakawan lalaki" (*Rhizophora apiculata*), "bakawan babae" (*Rhizophora mucronata*), "diliwaryo" or "daluari" (*Acanthus ilicifolius*), "buta-buta" or "lipata" (*Excoecaria agallocha*) and "nipa" or "sasa" (*Nypa fruticans*); and an additional six species in 2014, namely "lapis-lapis" (*Ceriops decandra*), "tangal" (*Ceriops tagal*), "saging-saging" (*Aegiceras corniculatum*) and "pototan" (*Bruguiera gymnorrhiza*, *Bruguiera sexangula* and *Bruguiera cylindrica*).[19]

3. Restoration Initiative for Site 3

Young Innovators for Sustainable Economic Development Association (YISEDA)

The restoration initiative in Site 3 was conducted by the Young Innovators for Sustainable Economic Development Association (YISEDA), which planted forest trees on 110 hectares of forestland under the United Nations Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD+ Program) (www.pia.gov.ph).

a. Organizational set-up

[Based on the KII of a community leader from YISEDA (12-12-2018)]

YISEDA was originally formed in 1993 as the PO as part of DENR's integrated social forestry program (ISFP) to facilitate the reforestation efforts in Maasin City in the province of Southern Leyte. One of YISEDA's members, Mr. Florentino Saludo, was elected as its president to take responsibility for the restoration initiative. In 2008, as government investment was waning, a German government agency GIZ (*Deutsche Gesellschaft for Internationale Zusammenarbeit)* stepped in to finance YISEDA's most important projects. GIZ provides technical aid and capacity building to grassroots organizations. GIZ financial support helped YISESA achieved its most notable successes in its 26 years of operation.

The members of the association, which was later named as YISEDA, resolved not to tolerate illegal logging in the forestland awarded to them. Rather, they would only harvest trees that they themselves planted. The members had initiated the planting of trees 20 years earlier as part of the government reforestation efforts in their area under the ISFP, and they saw how these trees had grown into harvestable timber. YISEDA was granted by DENR three Resource Utilization Permits (RUPs), which are resource-use rights intended for the harvest/utilization

[18] https://outoftownblog.com/visiting-silonay-mangrove-conservation-area/
[19] https://newsinfo.inquirer.net/635142/mindoros-paradise-island-of-mangroves

of naturally grown and/or planted forest resources within the production forest for commercial use.

Initially, only a few community members joined YISEDA. However, once YISEDA's activities had positive impacts in the community, almost all of the community members committed to its forest conservation efforts, which started as early as 1993. In line with these efforts, YISEDA members, through the committed leadership of Mr. F. Saludo, trailblazed in managing and protecting the forests even with limited government funding. They patrolled the mountains to make sure that there were no illegal activities such as logging and *kaingin*-making (i.e. conducting slash-and-burn farming) within their jurisdiction. While the tasks were risky and tedious, most of the members stayed with YISEDA for three main reasons: (1) strong and transparent leadership; (2) economic rewards in terms of livelihood opportunities; and (3) visible results of their forest protection efforts.

b. Sample restoration activities and outputs

In 2000, YISEDA was registered under the Philippine Securities and Exchange Commission (SEC) in Cebu City, after it was awarded with the Community-based Forest Management Agreement (CBFMA) by DENR. By 2004, YISEDA engaged its members into a *bayanihan* (translated as the communal spirit of community members who work together around a specific cause) every Saturday to clean and patrol their reforestation sites. However, in the succeeding year, DENR Secretary ordered the cancellation of the CBFMA in the area. The president worked with an NGO on a two-year scaling project for livelihood improvement in the community. Under the project, each household received goats, chickens, tilapia (freshwater fish), and ducks. The profits from raising chickens served to finance the construction of a bunkhouse for use by community, its visitors and tenants.

In 2009, DENR introduced the Comprehensive Agrarian Reform (CAR) project wherein the community members were asked to plant banana, sweet potato, ginger, and sayote while maintaining a four-hectare reforestation site planted with mahogany and gmelina/beechwood (*Gmelina arborea*). They called this area a watershed because of the presence of a spring on the lower side of the reforestation site. This CAR project ended under the Arroyo administration in 2010.

In the 1990s, an Upland Development Program (UDP) contracted individuals in every family to plant one hectare of land with seedlings supplied by YISEDA. DENR later introduced GIZ to conduct a training on Participatory Rural Appraisal and helped in revising the YISEDA's Management Plan. Given YISEDA's successes, its resource utilization permit (RUP) was approved by DENR in 2010. In the same year, a GIZ project on REDD+ was introduced in Lunas, Site 3 of our study. YISEDA members planted native species in assisted natural regeneration (ANR) and reforestation sites. The ANR site was planted with a mix of native species, exotic species like mahogany, and fruit-bearing trees.

c. Timeline of activities/events

Table 11 presents the activities and events surrounding the creation of YISEDA. The restoration efforts commenced because of the following events: (1) indiscriminate tree harvesting in the late 1970s to 1980s; (2) drought brought about by El Nino in 1982, which caused a loss of crops and of sources of clean water; and (3) large-scale forest fires that destroyed hectares of trees in Maasin City. The community recalled that they relied mostly on forest resources for their livelihoods, and lost their crops and sources of clean water due to the fire. They also remembered how wildlife became rare in their area after such a large forest fire.

TABLE 11. *TIMELINE OF ACTIVITIES/EVENTS SURROUNDING THE YISEDA RESTORATION INITIATIVE*

Year	Event
1982	El Nino
1988	Integrated Social Forestry Project (ISFP) started in Lunas, which organized the ISFP association therein (which later became YISEDA)
1991	Registration of the ISFP association under the Philippine Securities and Exchange Commission (SEC) Establishment of a 15-hectare of communal tree plantation under the ISFP
1992	Community reforestation projects were launched by the Economic Development Foundation (EDF)
1999	YISEDA was organized from the ISFP association
2000	YISEDA was registered in SEC Cebu City YISEDA was granted the CBFMA by DENR
2004	YISEDA initiated reforestation in their contract areas through voluntary labor every Saturday
2005-2006	New partners came to the community, such as the Federation of Omega Beneficiaries and World Vision, to distribute seedlings for reforestation
2007	Financial assistance from HEIFER International Philippines was given to the community; A water system was built to avoid the cholera outbreak in the *sitio*[20]
2008	A daycare facility was started in the community, with the YISEDA office as the first classroom Elementary school was constructed
2010	Approval of the GIZ-CBFM Financial Agreement Approval of the first resource utilization permit (RUP) awarded to YISEDA Approval of the GIZ-REDD Financial Agreement Approval of the registration of YISEDA in the DOLE in Maasin City

[20] A sub-village with few inhabitants.

Year	Event
2011	Construction of YISEDA's stockyard First timber harvesting of its planted trees Enhancement of Food Security Project benefitting about 70 families of YISEDA Completion of the bandsaw machine provided by GIZ Completion of the YISEDA bunkhouse Confiscation of chain saw within the CBFM area of YISEDA First delivery of lumber to the Provincial Environment and Natural Resource Office (PENRO) from the YISEDA plantation
2012	Second delivery of slice/fletches of mahogany lumber to Chonel's Enterprises in Mandaue, Cebu City YISEDA participated in the training on CBFM Annual Report Workshop

Source: Secondary Data from YISEDA (n.d.)

Thus, by 1988, the ISFP was started in Lunas. An ISFP organization was organized and registered under the SEC in 1991. Two water reservoirs were created in the community, but they remained unused since there was no water flowing into the reservoirs. In the same year, under the ISFP, YISEDA established 15 hectares of communal tree plantations.

By 1992, reforestation projects were launched by a Manila-based NGO, the Economic Development Foundation (EDF) in the community. These reforestation projects were awarded to three family-beneficiaries under the family approach to contract reforestation. These families were: Samaco (awarded 25 hectares); Arbiol and, Saludo (both awarded 10 hectares each).

Seven years later, in August 1999, YISEDA, Inc. was organized and registered under SEC by the year 2000. In the succeeding years, YISEDA planted trees and other crops in their CBFM area. By November 2000, DENR granted YISEDA a contract for the CBFM area, entitling them to be the stewards of 549 hectares of timberland for 25 years. However, in 2005, their abaca plantation was attacked by a virus, thus destroying their alternative livelihood sources.

In 2005-2006, the Federation of Omega Beneficiaries Inc. and World Vision assisted YISEDA in its reforestation project on a 3-hectare piece of land that was planted with mahogany seedlings and 600 fruit-bearing trees such as lanzones (*Lancium domesticum*), rambutan (*Nephelium lappaceum*), and durian (*Durio zibethinus*). In 2007, more livelihood assistance was extended to YISEDA members through the Rural Development Institute (RDI) of Leyte. For example, HEIFER International Philippines provided livestock to the community such as goats, native chickens, ducks, and tilapia fish. It also conducted training and seminars to help the community on leadership development, team building, and other relevant topics.

As a result of a cholera outbreak in 2007, the community requested a better water system in its locality. Thus, in 2008, the construction of the water system was initiated. In the same year, YISEDA added a daycare center for the benefit of its members by converting its office into a classroom. This helped its members while they participated in the YISEDA reforestation and other ongoing projects. This facility was followed through by the construction of an elementary school on YISEDA's office site.

In 2008, YISEDA became part of the GIZ program for Reducing Emissions from Deforestation and Forest Degradation (REDD+) in the Philippines. By 2010, YISEDA received approval of the following important milestones: (1) approval of the GIZ-CBFM Financial Agreement for 50 hectares of reforestation, 40 hectares of ANR, and 30 hectares of agroforestry areas; (2) approval of its first RUP; (3) approval of the GIZ-REDD Financial Agreement for 75 hectares of reforestation, 50 hectares of ANR, and 25 hectares of agroforestry areas; (4) approval of YISEDA's registration at the Department of Labor and Employment (DOLE) in Maasin City; (5) construction of YISEDA's stockyard (i.e. transient facility for cattle and other farm animals); and (6) first harvesting of the trees in its plantations supported by GIZ, which lent the YISEDA the necessary equipment such as chainsaws, yarding machine, among others.

In 2011, the bandsaw machine was built with GIZ funding. YISEDA also implemented an Enhancement Food Security Project to benefit its members, who planted coconut and coffee. About 70 families were the project beneficiaries. In the same year, the YISEDA bunkhouse was built. By the end of the year, YISEDA was able to deliver its lumber products from its mahogany plantation to the Provincial Environment and Natural Resources Office (PENRO) for the improvement of Mangrove Resource Training Center in Southern Leyte.

In 2012, YISEDA delivered a second batch of mahogany lumber slices/fletches from its own plantations to Chonel's Enterprises in Cebu City. GIZ also continued to support YISEDA by including it in the GIZ training of the CBFM Annual Workshop. Thus, after 20 years of reforestation activities, the 'forest crusaders', as Meruenas (2011) called them, have reaped rewards for conserving their forest resources.

4. Restoration Initiative for Site 4

Kalahan Educational Foundation (KEF)

The restoration initiative for Site 4 was implemented by the Kalahan Educational Foundation (KEF), a PO that was organized by the late Reverend Pastor Delbert Rice, an American missionary for the United Church of Christ in the Philippines, who had worked in the Kalahan Reserve since the 1960s.[21]

a. Organizational set-up

The Kalahan Educational Foundation (KEF) was formed by the Ikalahan (meaning 'people of the broadleaf forest') who had lived in the area for centuries. In 1970, the Ikalahan tried to negotiate with the government to create a cooperative among them to fight rampant illegal activities (i.e. illegal logging and forest fires for swidden farming) in their area, but to no avail (Encarnacion, n.d.). Thus, in 1973, they formed the KEF through the assistance of Rev. Pastor Rice, who had already worked in the area for a decade. KEF was organized to provide legal community representation and to support the development of the Ikalahan. In May 1974, the

[21] Note that not all restoration initiatives in the Philippines are implemented by POs.

KEF signed a Memorandum of Agreement (MOA) No.1 (the first of its kind) with the Bureau of Forest Development (now DENR) to establish the 14,730-hectare Kalahan Forest Reserve. MOA No.1 protected the tribe from its struggles against encroachment and illegal activities.

With MOA No.1, KEF was able to formulate community-based resource policies to govern the Kalahan Reserve, which covered about 13,894 hectares of forest lands with mostly pine and dipterocarp forests. Table 12 presents these community-based resource use policies.

TABLE 12. *RESOURCE USE POLICIES IN THE KALAHAN RESERVE*

Resource Use	Nature of Restriction	Sanction (Fine or Penalty)
Use rights	Kalahan residents only Access to resources in secondary forest areas only, not primary forest, subject to resource guidelines below New residents to obtain permits for resource use	Non-residents reported to the Department of Environment and Natural Resources (DENR) for prosecution
Fuelwood and lumber	On-reserve use only, not for outside sale Harvesting restrictions - marked trees only to be cut Cutting permit required Registration of chainsaws with Agroforestry (AF) office	400 pesos fine per tree cut Confiscation of all produce 500 pesos fine for unregistered chainsaws and reported to DENR for prosecution
Swidden farming	New clearings must have a permit from AF office Cultivated lands to be interspersed with forest and not on land susceptible to slides	500 pesos fine in dedicated watershed or sanctuary (primary forest) areas and required to cover the cost of reforesting area 100 pesos fine anywhere else
Forest fires	No burning except for 'proper agricultural development' (see Swidden farming) Guidelines regarding fire lines and burning times	500 pesos fine, plus payment of damages and obligation to reforest area, plus remuneration of people involved in putting out a fire
Fishing	Bonafide residents only No use of chemicals or electrical current	200 pesos fine for fishing with chemicals or electrical current Confiscation of electrical equipment upon second offense by residents
Orchid collection	Strict guidelines on methods for orchid collection Complete ban on collection of endangered orchid species	See below
Wildlife and flora	In sanctuaries: no harvesting of trees, orchids, rattan, bamboo, birds or other animals Outside sanctuaries: hunting of animals permitted from July to	First offense: 1000 pesos fine plus confiscation Second offence: 2000 pesos fine plus confiscation Third offense: 3000 pesos fine

Resource Use	Nature of Restriction	Sanction (Fine or Penalty)
	August; birds from September to October	plus confiscation (3000 pesos fine also applies to hunting wild pig and other big animals in sanctuary areas on the first offense)

Source: KEF, 1995 (as cited by Encarnacion, n.d.)

At present, KEF is governed by a Board of Trustees (BOT), consisting of 11 elected members representing the different communities within the reserve. The BOT performs a dual function, namely, to manage KEF and to manage the Kalahan Reserve (Encarnacion, n.d.). As BOT members, these representatives are mandated to hold regular consultations with their respective town members, and to make monitoring rounds on how the KEF management policies are observed on the ground. Project activities are implemented by designated staff members, organized into project teams. An administrative team, headed by an executive director, oversees the implementation of project activities.

There is a clear benefit-sharing agreement among the KEF, barangay officials and BOT regarding the fines and penalties. For example, if the barangay officials are the apprehending party, the barangay retains 75% and KEF the remaining 25% of the fines and penalties. The BOT conducts regular monitoring of the implementation of these policies and supplies the necessary funding to any barangay that implements the policies and regulations well.

b. Sample restoration activities and outputs

In order to deeply instill the need for forest protection and conservation among the Ikalahan, KEF established a forest-based enterprise named Mountain Fresh, which became the main label of KEF's line of jams and jellies made from the native fruit-bearing trees and wild berries growing within the Kalahan Reserve. Thanks to the prowess of the late Rev. Pastor Rice, the Ikalahan learned the business side of its forest protection and conservation initiative. The Mountain Fresh enterprise has supplied KEF's products to the major supermarkets in Metro Manila since 1980s. On average, KEF's annual sale of fruit is about 15,000 kilograms, worth about Php 60,000 (USD 1,155) (Encarnacion, n.d.). This enterprise has become one of the major sources of livelihoods among the Ikalahan in Imugan, Santa Fe in the province of Nueva Vizcaya.

Through the support of the Biodiversity Conservation Network (BCN)[22], the Forest Farms Development Project was initiated to achieve an effective resource management framework and stable and diverse forest ecosystem within the Kalahan Reserve. The project ran from 1994 to 1998. It also aimed to develop income-generating opportunities based on forest products that would satisfy the needs of the community and thereby encourage the Ikalahans to conserve the biodiversity of the reserve. The project supplied raw materials to

[22] A network that supports an enterprise-oriented approach to biodiversity conservation in Asia-Pacific region (Encarnacion, n.d.) http://www.fao.org/3/x6898e/x6898e05.htm

KEF's Mountain Fresh jam and jelly production and assisted with research activities in support of the conservation efforts within the Kalahan Reserve.

The restoration initiative also incorporated monitoring of the resources that support community livelihoods. As such, the Ikalahan devised a land-use mechanism by which they could determine the extent and nature of the forest protection and biodiversity conservation therein. This classification system included the following: (1) a reserve, which covered about 3,000 hectares of land composed mostly of mossy and dipterocarp forests; (2) a sanctuary area, where resource extraction, hunting and any agricultural activities were prohibited; (3) a protection forest, which was the steep part of the reserve; (4) a production forest, which could be used for extraction on a regulated basis; (5) upland agriculture, housing the Ikalahan plant annuals and perennials for household consumption and/or selling; (6) pastureland, where the Ikalahan livestock was being fed; and (7) titled lands, which were legally owned by households, not the communities.

c. Timeline of activities/events

[Based on the KII of a community member conducted on 12-15-18)]

In 1956, when Pastor Rice came to Imugan and established his church among the Ikalahans, they asked the Pastor if he could help them process a request for a formal title for their ancestral lands. Pastor Rice consulted the barangay officials, and subsequently the Bureau of Forest Management (BFM), however, the Ikalahans' request was not approved because of the lengthy time that would be needed to process it. Moreover, they also discovered that about 200 hectares of their claimed domains were issued with the titled lands. In response to these challenges, a Memorandum of Agreement (MOA) No.1 in 1974 was signed between Kalahan and BFM for a period of 25 years and renewable for another 25 years. This MOA was the first of its kind, giving the Ikalahan stewardship over a total of 14,730 hectares of land.

The elders consulted with the community to ascertain if they wanted a secondary school built in their area. After consulting with the Department of Education (DepEd), the Kalahan Academy was built. The elders chose this project because they thought that if the younger generations of Ikalahan studied outside of the village they would forget their own culture. The three core values of the KEF revolved around the protection of the environment, promotion of education, and maintenance of sustainable forest-based livelihoods. Table 13 presents the timeline of activities and events surrounding KEF's restoration initiative.

TABLE 13. *TIMELINE OF ACTIVITIES/EVENTS SURROUNDING THE RESTORATION INITIATIVE OF KEF*

Year	Event
1968	Ikalahan discovered about 200 hectares within their forest reserve were already titled
1970	A government plan tried to convert about 6,300 hectares of land within the reserve for the project named "Marcos City"

Year	Event
1970	Ikalahan attempted to organize a producers' cooperative to address the uncontrolled economic exploitation of natural resources (Encarnacion, n.d.)
1972	Legal victory over land disputes with external claimants whose fake titles were revoked by the court; the lands reverted back to the reserve
1973	KEF was organized to "promote the education and development of the Ikalahan people" and to give the community legal representation (KEF, 1995)
1974	KEF was registered under the SEC Signing of the MOA No.1 that gave the Ikalahan full and legal stewardship, management and utilization rights for 25 years in exchange for the protection and rehabilitation of the Kalahan Reserve Claims in three (3) adjacent provinces which expanded the organization's rights and management activities to 45,000 hectares
1980	Establishment of the KEF's Mountain Fresh enterprise and the official label of the jams and jellies being produced by KEF from native fruit trees growing in the reserve
1994-1998	Establishment of the Forest Farms Development Project through the Biodiversity Conservation Network (BCN)

5. Restoration Initiative for Site 5

Samahan ng Balian para sa Pagpapauwi ng Tubig, Inc. (SBPTI)

The restoration initiative in Site 5 was conducted by the Samahan ng Balian para sa Pagpapauwi ng Tubig, Inc. (SBPTI), which is roughly translated as "Balian's Water Consumers' Organization". This restoration initiative dates back to 1925 when the community elders decided to take responsibility for control and protecting of the water resources in their area.

a. Organizational set-up

The SBPTI was a barangay-based PO formed in 1925 to manage the water system sourced from a spring within a small watershed in the Sierra Madre Range, making it the oldest institution in Filipino history to have managed a watershed for its water resources. Ironically, the main livelihood sources of the community were off-farm activities with only a very small portion of the community highly dependent on the watershed for their livelihoods. Later, in the 1980s, SBPTI was assisted by an NGO, the Southern Tagalog Regional Action Program (STRAP), and government agencies in carrying out their tasks and dealing with the challenges faced as a PO. They officially secured the authority to manage the water system from the municipal council of Pangil.

Around the 1960s and 1970s, the entry of commercial logging operations in the jurisdiction of the SBPTI threatened its more than three decades of experience in managing the watershed (Francisco and Rola, 2004). With commercial logging devouring the forest resources in the area, the forest cover was altered and a reduction in water supply was evident by the 1980s. These changes triggered the intensification of the protection efforts among community

members over their forests and watershed. With the assistance of STRAP in the 1980s, the community formed the Lingap Kalikasan, a multi-sectoral group that was tasked with conducting the information, education and communication efforts linked to watershed management among water consumers and community members. Members of the Lingap Kalikasan were trained by STRAP, DENR and the Department of Agriculture in conducting these activities.

Lingap Kalikasan was supported mainly by voluntary contributions from members of SBPTI and contributions from the water consumers themselves, who were mainly from lower-income brackets. Their commitment to protecting their watershed was the force driving their strong voluntary financial support to the said organization.

b. Sample restoration activities and outputs

Barangay Balian is the second largest barangay in the municipality of Pangil, Laguna Province. Its geographical features include three agroecological zones, namely, coastal, lowland and upland areas (Contreras, 2004). The coastal and lowland areas are used for housing and agriculture, mainly for rice cultivation. The upland areas are designated to agriculture and watershed protection. In some parts, community members have planted coconut, banana, citrus, coffee, mangoes, rambutan, bamboos, and root crops. Some portions of the uplands were covered by cogon grass (*Imperata cylindrica*) while other parts of the upland area were covered with secondary growth forests, which contain native forest species such as rattan, giant fern, edible fern, dita, usiw, and tibig. Other species of trees such as narra, acacia, and mahogany can be found thriving in the forests, mainly because of the reforestation activities conducted by the community in the watershed areas through the years. While agriculture is still practiced in Balian, it is not the community's major source of income as the majority of residents are employed in the public and private sectors and in small-scale handicraft industries.

When the area was threatened by the commercial logging operations, the community made a series of efforts to restore the vegetation. First, it declared the 50-meter radius of all water sources a buffer zone for water protection. This was later expanded to 100 meters through a municipal ordinance (Francisco & Rola, 2004). Second, with the passage of the Local Government Code (1991), the Local Barangay Council (LBC) took over the control of the water system in Balian. The LBC, however, depended largely on external funding, causing its efforts to be unsustainable and unsuccessful. The SBPTI, on the other hand, capitalized on the volunteerism among its members and rectified what LBC had failed to achieve, making the relationship between these two community institutions very problematic (Contreras, 2004).

c. Timeline of activities/events surrounding the restoration initiative of SBPTI

[KII with a community member (12-6-2018)]

The SBPTI initiative was originally established in 1925 by the elders living in Balian (Table 14). Its main objective was to provide a free water supply to all the households in the barangay. It was started with the *bayanihan* (i.e. roughly translated as "community self-help") in the community and the contribution of its members to purchase the necessary materials, such as water pipes, to improve the water distribution from the sources to the houses and other establishments and to build irrigation for the lowland farms. The Balian community members gave their contributions both in monetary form or through in-kind contributions to support this project.

Over the years, with the turnover of SBPTI officers, there was also turn-over in membership; some families or households became active and inactive members of the initiative and, and by the 1980s, the SBPTI became quite neglected. Even the SBPTI officers lacked knowledge of how the initiative had initially worked. While a steady flow of funding was coming in to support the initiative, the implementation commitment did not parallel the community volunteerism of the past. Some assisting organizations never set foot in the community; they just sent the materials needed for the initiative. Soon, there were broken pipes that needed to be fixed, and some pipes had rusted because of age.

TABLE 14. *TIMELINE OF ACTIVITIES/EVENTS SURROUNDING THE RESTORATION INITIATIVE OF SBPTI*

Year	Event
1925	Creation of the SBPTI by the community
1960-1970	Entry of commercial logging in the area
1980	Reduction of water supply in the area due to the ongoing commercial logging in the watershed
Mid-1980	Entry of the NGO, Southern Tagalog Regional Action Program (STRAP), to assist the SBPTI in its tasks and responsibilities
1990	Formation of the Lingap Kalikasan, a multisectoral group towards the protection of the watershed area
1991	With the passage of the Local Government Code of the Philippines (RA 7160), the Local Barangay Council took over the watershed management in Balian

C. Key Activities of the Restoration Initiatives Across Study Sites

Table 15 summarizes the key activities of the restoration initiative per site. Similar activities across the sites are discussed. Key restoration initiatives activities of the communities are mostly based on the government-imposed procedures for reforestation, assisted natural regeneration, enrichment planting, and the like. Since Sites 1 (Labo, Camarines Norte) and 3 (Maasin City, Southern Leyte) are currently engaged in the government National Greening Program (NGP), their respective restoration initiatives are aligned with government procedures such as community organizing, nursery operations, strip brushing (a practice used for weed removal), staking, planting, sapling maintenance, and other activities required in plantations and/or agroforestry. Both sites were also granted utilization permits to harvest their planted trees. The operations and management of these government-sanctioned activities are required by law for both assisting government agencies and nongovernment organizations.

In contrast, Sites 2 (Calapan City, Oriental Mindoro), 4 (Santa Fe, Nueva Vizcaya) and 5 (Santa Fe, Nueva Vizcaya) conduct unique activities in their areas, namely: (1) extraction of non-timber forest products such as fruits, fuelwood, and water; and (2) ecotourism, given their special tenurial arrangements and/or protection agreements, memorandum of agreement, and municipal ordinance in order to ensure sustainability of the natural resources in these areas.

The key activities of the restoration initiatives are more or less equal in nature and extent, in terms of gender and age, except where gender- and age-specific activities are identified due to the danger or complexity involved. In theory, Site 1 shows the greatest equality in terms of participation, as everyone is supposed to be included in the activities regardless of gender and age.

In Site 2, the key activities in restoration initiatives among the members of the Sama-samang Nagkakaisang Pamayanan ng Silonay (SNPS) were mentioned only in reference to the reforestation of the area, namely brushing, hauling and harvesting of the species that they planted. These forest-based activities were said to be male-dominated as the female members of the SNPS were occupied in the SNPS off-farm enterprises such as running the ecotourism venue and annexed catering services. Both of these businesses were offshoots of the ecotourism services offered by SNPS in response to requests from the visitors who conduct seminars, trainings and other events at the ecotourism facility. Other visitors also requested the provision of catering, tour guides, and planting experiences, among the services offered by SNPS. In an interview, the community members expressed how they have started appreciating these off-farm and non-forest-based livelihood projects (catering and rental of venue) through the SNPS, and thus no longer harvest or cut-down the mangrove trees in their area. Moreover, the youth are engaged in all aspects of the maintenance and protection of the mangrove ecotourism facilities, including the guided tours and catering services.

In Site 3, men and women actively participated in the restoration initiative, except in the cooperative, which was created by and exclusively for the women members for their own income generation. Both men and women were equally involved in seedling production,

nursery operation, reforestation, agroforestry, and *bayanihan*, with the exception of forest patrolling, which was an activity conducted solely by men as it was considered too dangerous for women and young members of the YISEDA. Some of the cooperative's projects included fishponds, backyard livestock raising, and vegetable planting. The members also maintained and managed the bunkhouse that was owned by the organization to house community members and visitors.

In Site 4, the restoration initiatives were started by both men and women working in nursery operations, organic farming, assisted natural regeneration, and reforestation activities such as enrichment planting in secondary growth forests. Gender-specific task allocation was prevalent in this community, where the men and young men were assigned to carefully harvest wild fruits by hand within the forests, while the women and girls were trained by parents and elders in food processing for their product label Mountain Maid. Although a few men were involved in the processing and delivering of the products to outlets in nearby provinces and as far as the Metro Manila (National Capital Region), it was the women who were in charge of this off-farm production. Younger generations, according to a key-informant, were not particularly interested in participating in this activity as they thought the job was for their parents, who were trained by the late Pastor and Mrs. Rice; and those who were interested only helped their parents for extra daily allowance for school activities. However, all community members are required to participate in planting, especially the younger generations who attend school at the Kalahan Academy, the elementary and high schools managed by the KEF, where planting seedlings in the nearby forests is a requirement of their ecology classes.

In Site 5, the restoration initiative was mainly concerned with reforestation activities that involved planting trees in the area, especially when the initiative started in 1925. Throughout the years, all community members, regardless of gender, age and ability, carried out enrichment planting to replace dead or rotten trees. The rest of the key activities mentioned during the interviews and discussions involved the maintenance and repair of the community's water system. These activities were considered "hard work" according to the men, and were therefore male-dominated, usually excluding the women, young people, and senior citizens.

TABLE 15. *KEY ACTIVITIES OF THE RESTORATION INITIATIVES PER STUDY SITE*

Study Site	Activity	Women participating?	Men participating?	Women and men participating equally?	If not, why not?	Young men and young women participating?	If not, why?	Any excluded groups?	If so, why?
1 Tigbinan, Labo, Camarines Norte	Community organization	Yes	Yes	Yes		Yes		None	
	Mapping forest boundaries to locate reforestation area	Yes	Yes	Yes		Yes		None	
	Information, education, and communication	Yes	Yes	Yes		Yes		None	
	Strip brushing	Yes	Yes	Yes		Yes		None	
	Staking	Yes	Yes	Yes		Yes		None	
	Planting	Yes	Yes	Yes		Yes		None	
	Sapling maintenance (ring weeding, fertilizer application), and other activities required in plantations and/or agroforestry	Yes	Yes	Yes		Yes		None	

Study Site	Activity	Women participating?	Men participating?	Women and men participating equally?	If not, why not?	Young men and young women participating?	If not, why?	Any excluded groups?	If so, why?
2 Silonay, Calapan City, Oriental Mindoro	Brushing Hauling Harvesting	Yes, but very few women	Yes, mostly men	No, mostly men, especially in harvesting, as women occupied in SNPS off-farm enterprises (venue management and catering)	Nature of the work	Yes, around 2-6 persons involved		Persons with disabilities, senior citizens, sick people	Not physically fit to work
3 Lunas, Maasin City, Southern Leyte	Seedling production	Yes, women do the planting	Yes, men do most of the work in seedling production	No, mostly men	Yes	Yes, more than 20 persons		Persons with disabilities, senior citizens, sick people; but there are seniors who still plant.	Not physically fit to work
	Reforestation	Yes, women actively participating	Yes	No	Some activities (e.g., hauling) were considered	20-30 persons	Busy in school; but can be hired during the weekends	Persons with disabilities, senior citizens, sick people; but there are senior citizens who still plant	Not physically fit to work

Study Site	Activity	Women participating?	Men participating?	Women and men participating equally?	If not, why not?	Young men and young women participating?	If not, why?	Any excluded groups?	If so, why?
					only fit for men				
	Agroforestry	Yes, actively participating	Yes	Yes		More or less 10 persons		None	
	Cooperative	Yes	No	No	Cooperative was created by and for women only	No	Busy in schooling	None	
	Bayanihan (planting, forest patrol, and maintenance)	Yes, actively participating	Yes, mostly men do the forest patrolling	No, more men in patrolling	Patrolling is dangerous for women	1-2 persons	Patrolling is also dangerous for younger men and women	Sick people	Not physically fit to work
4 Imugan, Santa Fe, Nueva Vizcaya	Food processing current products (jams, jellies) Previous products (ginger jelly, ginger teas, turmeric tea)	Yes, mostly women	Yes, but only a few	No	Women are involved in processing ; men in harvesting wild fruits	Some participate	Not particularly interested; some help parents for extra school allowance	None	No restrictions

Study Site	Activity	Women participating?	Men participating?	Women and men participating equally?	If not, why not?	Young men and young women participating?	If not, why?	Any excluded groups?	If so, why?
	Planting/propagation of wild fruits	Yes, seedling production in the nursery and in annual planting activities	Yes	Yes		Yes; participation is a school requirement (e.g. Ecology class)		None	Required activities for Ikalahan community, especially the school children and youth
	Selling of jams and jellies; market linkages	Yes	No	No	Men were only involved in harvesting	No	Adult work	None	
	Organic farming (sayote, squash)	Yes	Yes	Yes		Yes, but not as many as adult men and women	Younger members are busy in school	None	
	Tungtungan system: a system for reconciliation and solutions by the *lupon* (council of elders)	Yes	Yes	Yes		None	*Lupon* is composed of male and female elders who resolved conflicts	None	

Study Site	Activity	Women participating?	Men participating?	Women and men participating equally?	If not, why not?	Young men and young women participating?	If not, why?	Any excluded groups?	If so, why?
	Nursery	Yes; in seedling production	Yes	Yes	Yes			None	
5 Balian, Pangil, Laguna	Cleaning of the water tank (for water distribution to households)	No	Yes	No	Hard work for women	No	Complicated work (skill and labor-intensive)	None	
	Grass cutting	No	Yes	No	Hard work for women	Young men, about 5 persons		None	
	Repairing the pipes for water distribution to households	No	Yes	No	Hard work for women	No	Complicated work	None	
	Reforestation	Yes	Yes	Yes		Yes		None	

1. Quality, management and use of resources, and relevant changes in the study sites

FGD participants were asked about the management and use of resources, and changes in the natural resources available for their use over time and as a result of restoration initiatives. Tables 16 and 17 summarize the FDG responses of women and men, respectively.

TABLE 16. *QUALITY, MANAGEMENT, AND USE OF RESOURCES AND RELEVANT CHANGES ACCORDING TO WOMEN*

ASPECTS	STUDY SITES				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Sta. Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
Resource Use	Community not allowed to cut timber	Cutting of mangrove is prohibited	Firewood; Furniture	Food processing Fuelwood Timber	Charcoal-making
Resource Management and Quality	Reforestation and ANR activities	Reforestation; planting of nursery-raised seedlings	Reforestation; ANR, planting of wildlings	Reforestation and rehabilitation of second-growth forests	Reforestation; Increased forest protection
Relevant Changes	Soil quality has improved; More trees than before	Trees became abundant; Trees bear fruit again	More lauan species and other hardwoods	More trees; Sustainable harvesting; Improved water quality in rivers and streams	Fewer involved in charcoal-making; Less access for women in the SBPTI

TABLE 17. *QUALITY, MANAGEMENT, AND USE OF RESOURCES AND RELEVANT CHANGES ACCORDING TO MEN*

ASPECTS	STUDY SITES				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Sta. Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
Resource Use	Household consumption only	Not allowed to cut timber; Household consumption, esp. cooking	Basket-making; Furniture; Hammock-making; Firewood;	Fruit-bearing trees; Firewood	Fruit-bearing trees; Lumber collected previously by the logging company

ASPECTS	STUDY SITES				
	1 Tigbinan, Labo, Camarines Norte	2 Silonay, Calapan City, Oriental Mindoro	3 Lunas, Maasin City, Southern Leyte	4 Sta. Fe, Imugan, Nueva Vizcaya	5 Balian, Pangil, Laguna
			Food		
Resource Management and Quality	Reforestation ANR	Reforestation	Reforestation; Re-planting within CBFM area	Reforestation; ANR; NGP	Reforestation;
Relevant Changes	Fewer violators; More trees	Few used firewood from the mangrove area	Few violators; More trees; Native species increased	Restrictions on collecting orchids and wood; More native species	SBPTI membership switch from a mix of men and women to overwhelmingly male; Broken water system; Increase in water fees; Women assisted in collecting fees

a. Site 1: Tigbinan, Labo, Camarines Norte

According to the women of Tigbinan, most women participated in planting trees in their reforestation areas, planting species such as narra (*Pterocarpus indicus*), mahogany (*Swietenia macrophylla*), mangium (*Acacia mangium*), gmelina (*Gmelina arborea*), lauan species, kakauate (*Gliricidia sepium*) and anahaw (*Livistona rotundifolia*). They did not use most of the trees planted, except the mahogany which they (women) would harvest from the coconut sites. These trees were planted by the government. In their areas, they were not allowed to cut timber. However, in special cases, permits could be secured from the barangay prior to cutting. This management practice was crucial for instilling the understanding of the importance of trees in their livelihoods, thus inculcating the need to rehabilitate their forest lands. The women noted that the communities that participated in the restoration initiatives had refrained from practicing swidden agriculture methods in clearing their lands, as the practice had been prohibited.

Similarly, the men of Tigbinan identified rattan, mahogany, pandan, and anahaw as their main crops in the reforestation areas. Except for mahogany, these are all non-timber species chosen because the reforestation areas were already planted with woody perennials. These trees were used for household consumption, especially as firewood and for house construction. They would usually harvest these raw materials from the forests. However, following the strict implementation imposed by TKFPI prohibiting the collection and use of forest resources in

their areas, they could no longer easily obtain wood. Deputized Bantay-Gubat ("Forest Guards") apprehended any violators. Because of this, the Tigbinan men noticed that only very few now engaged in swidden "kaingin" practices, which involved burning, and more trees thrived in the forests. People learned the value of forests on which they depend for food, fodder, fuelwood, and other basic needs. The change came about when the community became more observant of the rules and regulations in their locality.

b. Site 2: Silonay, Calapan City, Oriental Mindoro

In Silonay, cutting of mangrove trees was prohibited by the SNPS based on the rules imposed by Conservation International (CI) in 2007. Prior to this, trees harvested in the mangrove area were used as foundations for building houses and as firewood for cooking. After the prohibition, the mangroves were no longer allowed to be cut and were solely used for ecotourism. With permission, people collect only fallen branches and dead wood. Inhabitants noticed that the vegetation became abundant and the trees numerous. The fruit trees began to bear fruit again. Upon the entry of CI in their community, they were explained the importance of planting mangrove seedlings in the reforestation area. Soon they saw how the trees grew, and observed changes in the mangroves and ecosystem, including more birds and fewer storm surges.

The men of Silonay also noted that prior to the entry of CI and the strict implementation of the rules and regulations of the SNPS, there were many community members engaged in charcoal making, using mangrove species. However, after the restoration initiative, they made use of the rotten wood and fallen branches for fuelwood instead, upon permission from the barangay for the collection of these raw materials. Over time, people learned to appreciate the value of the green lush of mangrove in the area. Only very few people continued to use firewood for cooking and most of the households now use LPG and other alternative means of cooking fuels, advertised nationwide through television commercials as a clean source of fuel. Others who relied on firewood from the mangrove would collect the branches washed away by the river. There are now employment opportunities in ecotourism and tour guiding to compensate for lost income from charcoal production.

c. Site 3: Lunas, Maasin City, Southern Leyte

In Lunas, cutting of timber was allowed through the cutting permit granted by DENR. The species used were mahogany, ipil-ipil, gmelina, banganga, and lauan. They used mahogany especially for furniture-making for home use and the rotten branches for firewood. They also noted that harvesting was not allowed without the permit from YISEDA to protect the trees in the area. Charcoal making ceased. Only fallen branches were collected for fuelwood. Ten years after the ban on cutting trees, they noticed that the forests were greener. No one dared to conduct illegal logging because DENR and YISEDA worked hand in hand in reprimanding violators. With more native species thriving in the restored forests, the local population became

more aware of their responsibility to take care of the forests. They collected wildlings for re-planting in other areas where needed.

Men used the forest tree species for basket-making (rattan), furniture (bamboo and mahogany), fuelwood (mahogany and gmelina), and food (honey, banana, and bamboo shoots). They gathered these resources from their CBFM area. After DENR and YISEDA prohibited the cutting of native species, a decision also supported by the NGOs and international organizations assisting them, it was impossible to collect these materials indiscriminately anymore. Forest guards were assigned to monitor activities in the area. These measures resulted in an increase in the number of native species in the area. Prior to the ordinance from the local government unit (barangay), cutting was unregulated. This change in the vegetation as well as the attitude among the community members, especially the members of YISEDA, came about primarily because of the reforestation activities conducted in the area. With the introduction of reforestation projects in their locality, people became more educated on the importance of the forests.

The group estimated that about 50% of the indigenous species found in their forests increased. These species included red lauan (*Shorea negrosensis*), bitangol (*Calophyllum blancoi*), bayok (*Pterospermum acerifolium*), hindang (*Ficula callosa*), kalingag (*Cinnamomum mercadoi*), and narra, among others. Fruit-bearing trees also increased, including lanzones (*Lansium domesticum*), rambutan (*Nephelium lappaceum*), guyabano (*Annona muricata*), mangosteen (*Garcinia mangostana*), langka (*Artocarpus heterophyllus*), coffee (*Coffea arabica*), and cacao (*Theobroma cacao*), among others. These were used mainly for household consumption, but the excess was often sold in *talipapa* or small markets.

d. Site 4: Santa Fe, Imugan, Nueva Vizcaya

In Imugan, the men, women, and youth collected fruits from the forest trees and other vegetation grown in the second-growth forests within the Kalahan Forest Reserve. They directly brought the harvested fruits to the food processing site or to the market downtown. The women of Imugan also collected dried twigs and dead wood from the forest as an alternative to the LPG (preferred due to lower costs). They now enjoyed a more sustainable supply of raw materials (fruits and fuelwood) for their food processing enterprise, as well as for household consumption. Many years back, most villages would practice traditional swidden farming where they would convert the heavily forested areas of the Kalahan Forest Reserve into burned areas. However, with continuous education and awareness instilled by the Kalahan Educational Foundation (KEF) and its high school, Kalahan Academy, they became more active in the rehabilitation of their remaining forests by converting dominant grasslands to greener forests. The women noted that with these efforts, the forests included more tree species. The three keys to these changes included: (1) the community's initiative to stop harmful forest activities; (2) KEF took charge of the rehabilitation activities; and (3) local government financial support to their National Greening Program (NGP) to pay for the seedlings.

More limitations were imposed on the local population in terms of restrictions on: (1) collection of wild orchids for sale; (2) cutting of trees; (3) volume of fruit to be removed from the forests; and (4) designating specific collection areas. According to the men of Imugan, more trees were planted in their secondary forests because of the NGP's own initiative. They planted gmelina, alnos, narra, and mahogany. They also made sure that the growth of native species was enhanced through ANR. These efforts changed the perspective of the local communities, who even learned about climate change and how it affects them.

e. Site 5: Balian, Pangil, Laguna

The women of Balian had a different experience when it came to the restoration of the watershed protecting their main source of water. Prior to the restrictions imposed by SBPTI, the women acknowledged that their main source of livelihood was from charcoal-making, for which they used mango, kakauate, and ipil-ipil. However, in the 2000s, restrictions were imposed regarding charcoal-making, and the women's products were usually confiscated by the police. Sale of charcoal was done covertly, and the number of community members involved in charcoal-making decreased dramatically. There were also changes in the vegetation due to the entry of a logging concession in their area, namely: (1) big trees and coconut palms were removed; and (2) illegal activities within forests increased.

Women considered that the breakdown in SBPTI had a tremendous impact. With the lack of leadership (no president-elect), the organization was dissolved. The Barangay council (i.e. politician-elect) later reconstituted the SBPTI exclusively for male members. Broken pipes that were not fixed for a long time were repaired; thus, increasing the collection fee from Php 3.00 to Php 5.00 per month. This fee has not increased since 2005, but the population has grown.

Male FGD members made the same observations. They recalled that previously, they cut trees for timber and lumber. They did not need to market the raw materials as the corporate logging company collected them. They were not choosy about the tree species – everything was collected. Broken pipes in the water system established by the SBPTI affected the collection of water as well as the collection of water fees. The SBPTI was dropped by community members, who abandoned the organization due to lack of leadership. After it was transformed it into an all-male member organization as it remains to the present day, women helped collect fees for the SBPTI but they were not allowed to help with heavy tasks such as cleaning the water pipes or hiking to the headwaters.

2. Livelihoods of women and relevant changes in the villages

The main livelihood activities of women are presented in Table 18.

TABLE 18. *LIVELIHOOD ACTIVITIES FOR WOMEN IN THE STUDY SITES*

Main Livelihood Activities	LIVELIHOOD OPTIONS PER STUDY SITE				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Santa Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
Agriculture	Planting citronella, coconut, abaca and other crops (5)*	(6)*	Vegetable planting (5); cut-flower planting (3)*; fishpond (5)	Swidden farming or vegetable planting (5)	(6)
Livestock raising	Pigs and chickens (3)	(6)	(6)	(6)	(6)
Forest product collection	Collecting fruit (5)	Collecting fallen branches and dead wood (4)*	(6)	Collecting wild fruit (5)	(6)
Wage labor	Employees and daily wage earners of TKFPI and its reforestation projects		(6)	(6)	Sewing (2)*
Business	Soap, lotion and massage oil making (5); handicrafts (5); Seedling production (2)	Selling fish (4); Catering (3); Making *shing-a-ling* (delicacy) (3)	Knitting (1)*; rope- and bag-making (3); Selling (3)	Food processing (4)	Paper mache-making (4)
Others		(6)	Shares from YISEDA COMSCA (5)	Government employees (3)	(6)

Legend: Proportion of women:

1=none or very few
2=approximately ¼
3=about half
4=approximately ¾
5=nearly all
6=don't know

a. Site 1: Tigbinan, Labo, Camarines Norte

The women of Tigbinan claimed to have a wide variety of livelihood activities. Respondents from Canapawan village said that they planted citronella and coconut for income, particularly to make massage oil. Female respondents from Guisikan village also claimed to have planted abaca and coconut for their handicraft enterprises making baskets and slippers. Other women were engaged in swine-raising. Most of them conducted their respective livelihood activities at their homes or in the TKFPI offices, which was near their homes. They considered their involvement in these livelihood activities as earning them extra income and at the same time, a recreational job for them. They claimed that women in Tigbinan and other nearby villages earned more easily than men because they were more resourceful and multitasking. They also claimed that women could do blacksmithing, which was rare but more profitable for women. For single parents, having such a variety of jobs nearby was helpful. Before the establishment of various cooperatives under the umbrella of TKFPI, the women of Tigbinan were only engaged in farming. However, with the establishment of the cooperative, they learned to build networks, perform other duties and responsibilities within TKFPI, and earn more income for their families.

The reforestation projects gave women other sources of income. Women could be employed in all areas like men. They could raise seedlings, plant trees, and even maintain the reforested areas. They planted fruit-bearing trees for their household consumption and for sale at markets. For them, the positive changes that were brought by the reforestation of the once-cogonal area included: (1) less frequency of strong typhoons; (2) protection from heavy rains and landslides; (3) improved vegetation and soil quality; (4) widespread awareness of the positive impacts of forest protection; and (5) use of organic fertilizers from their piggery and poultry. Very few were still practicing charcoal-making and swidden farming. Others were encouraged to do intercropping within their upland farms.

b. Site 2: Silonay, Calapan City, Oriental Mindoro

According to the women of Silonay, the most important source of income for women was selling fish, although they were also engaged in other income generating activities such as planting mangrove species for which they were paid by their PO, making delicacies and running catering services. With the development of the Silonay Mangrove Ecotourism, the women provide catering services to those who use the ecotourism office as a venue for seminars and training. Some women were in charge of cooking food, preparing the venue, and even tour-guiding.

When asked about how they saw the changes in the climate and weather in their area, they said that the establishment of the mangrove forest in their area prevented further damage from strong typhoons and storm surges against their community. The environment within the mangrove area became cozy. But overall, the weather was so humid that women could not

work inside the mangrove area that they preferred to work in the catering and other related activities.

c. Site 3: Lunas, Maasin City, Southern Leyte

Although the women's basic livelihood activity in Lunas was farming, they identified having the women's group, named YISEDA COMSCA (i.e. Community Management Savings and Credit Association), as giving them extra income in terms of shares of all the income from the livelihood investments of their cooperative. COMSCA managed the fish pond, bunkhouse, catering services, and other enterprises that the women ventured into. The women were also involved in buying shares (at Php 50 (USD 1) per share) in their cooperative to lend to other members.[23]

They continued planting root crops, vegetables, and cut flowers for sale in local markets. They also planted a filler crop, abaca, for their handicraft making, and sold handicrafts locally. As one of the FGD respondents commented, "Everyone has a source of income here." Because of the entrepreneurship of COMSCA, the women were able to save money for their families.

When asked whether they noticed any changes in the weather and climate over the past 25 years, the women of Lunas noted that they experienced very hot days and very heavy rains. Some explained that the sun's rays were too painful on the skin while the heavy rains were much colder than normal. To cope with these changes, they would plant immediately (before March) so that their crops would not be affected by the summer heat. In the summer, the plants would turn yellow and wilt. However, because they had planted more trees in their forests, they had not experienced strong typhoons, mudslides, and flooding in their area.

d. Site 4: Santa Fe, Imugan, Nueva Vizcaya

Women of Imugan were very much involved in the income-generating activities of their households. They were members of various organizations that offered livelihood opportunities from different sources. They were members of the Development Indigenous Women's Association (DIWA) and obtained investments from the Rural Improvement Club (RIC). The women were also active in the Abot-Palad Association. These organizations gave them allowances and other benefits. Other women were employed in the government agencies, whereas their husbands drove tricycles and managed small-scale businesses.

For the women of Imugan, the most significant sources of income came from vegetable planting, food processing and their membership in RIC and DIWA. The women were allocated specific tasks, especially in the KEF food processing enterprise, particularly since swidden farming had long since been prohibited in the community under the KEF's policies.

[23] It is mandatory in Philippines to have members of cooperative buy shares in their cooperative to boost the cooperative's capital.

When asked about the changes in the weather and climate over the past 25 years, the women noted the following observations: (1) the month of December which used to be the coldest month in their area got warmer and felt like summer; (2) the months of October to November which were supposed to be dry were now colder and wetter; and (3) farmers were not able to plant in two cropping periods because of unpredictable heat.

Site 5: Balian, Pangil, Laguna

According to the women of Balian, the most important source of income for women in their area was making paper mache. Although there was no women's group in the community, the women were able to generate income from sewing and paper mache-making, which is a

specialty product in the area. These opportunities were not possible in the past and few women were engaged in these activities, as previously they provided laundry services from which they generated a menial income. While paper mache products were sold at a cheap price and seasonally, the women, especially the mothers, gained access to more stable income from such a livelihood activity because the paper mache is home-based.

When asked whether they noticed any changes in the weather and climate over the past 25 years, the women noted the sudden changes in dry and wet seasons. Their paper mache business was largely affected by prolonged the wet season, as they needed the sun to dry their *taka* or paper mache products. Instead of the natural drying method, they used a dryer and consumed more firewood in drying.

3. Livelihoods of men and relevant changes in the villages

Men's main livelihood activities in the study sites are presented in Table 19. Men perform various income-generating activities, which might also be performed by women, especially in Sites 1 to 4 where livelihood sources are mainly resource-based. However, men also have off-farm activities such as regular and/or daily employment in public and private agencies, business ventures and other enterprises, and reforestation projects.

TABLE 19. *LIVELIHOOD OPTIONS FOR MEN IN THE STUDY SITES*

Main Livelihood Activities	LIVELIHOOD OPTIONS PER STUDY SITE **1 Tigbinan, Labo, Camarines Norte**	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Santa Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
Agriculture	Planting rice, abaca, coconut, citronella, fruit-bearing trees, and vegetables (5); Fishing (2)	Fishing (4)	Farming (5)	Farming (5); Gardening (5)	Farming (4); Fishing (2)
Livestock raising	Chicken (4)	(6)	(6)	Small animals (4)	(6)
Forest product collection	Collecting fruit (5)	(6)	Gmelina, mahogany, and ipil-ipil for sale	(6)	(6)
Wage labor	NGP (4); Reforestation projects (5)	(6)	(6)	Construction (3)	Driving (1); Construction (1)
Business	Soap, lotion and massage oil making (4); Handicrafts (5); Seedling production (4)	Driving tricycle (3); Car repairs (1); Blacksmith (1); Boat-making (1)	(6)	(6)	(6)
Others	Employment in Manila and other provinces	Tour guide (2)	(6)	Working in LGUs (2)	(6)

Legend: Proportion of men:

1=none or very few	4=approximately ¾
2=approximately ¼	5=nearly all
3=about half	6=don't know

a. Site 1: Tigbinan, Labo, Camarines Norte

The main source of income for men in Tigbinan was the planting of various crops in their upland farms. Most of them were also engaged in the NGP and other reforestation projects in various capacities as wage-earners and employees in TKFPI. Some of them also ventured into enterprises such as making soap, lotion, massage oils, and basket making, although these enterprises were largely dominated by women. Indigenous people were also involved in Agrot handicraft, making slippers out of abaca fibers. TKFPI made sure that 30% of the workers were

indigenous people who are employed in the reforestation and abaca projects. Recently, they were able to plant and harvest in their reforestation projects. Some men in the area were employed in TKFPI or in Manila and other nearby provinces. Because of their livelihood projects, they were able to send their children to school.

When asked about changes in the climate and weather in their area, they said that prior to the 1990s, they experienced more and stronger typhoons. As the reforested areas grew to maturity, they felt that their area was less affected by strong typhoons, just typical rains. The biggest impact of these changes was on rice production, as it is a climate-sensitive crop. Rice fields were already affected by extreme weather. According to the men of Tigbinan, farmers already experienced droughts during months that were supposed to be wet. Even fruit-bearing trees like rambutan developed clusters of tiny black dots on the fruit. The ripening/fruiting season was also delayed due to the changing weather patterns.

b. Site 2: Silonay, Calapan City, Oriental Mindoro

While the men of Silonay derived their income from a variety of livelihood sources, they still claimed that fishing was their primary source. The fisherfolk earned the most income in Silonay. They formed their own organization and named it "Mga Nagkakaisang Mangingisda ng Silonay" or MANAMSI (roughly translated as the United Fisherfolk of Silonay), so that the city government could extend some assistance to them in 2003. Other important sources of income for the men of Silonay included venturing into businesses such as driving tricycles, car repairs, blacksmithing, boat-making, and guided tours. Although they earned more than before, the men also complained about the high prices of daily goods and services, which they could barely afford them.

Men claimed that was when typhoons and storms hit their locality they felt climatic changes. They had experienced landslides and heavy soil erosion. However, with the restoration of the mangroves, they felt a huge difference in the protection mangroves had provided in terms of shelter from storm surges, barriers to siltation, and heavy mud flow (*banlik* or *burak*), among others.

c. Site 3: Lunas, Maasin City, Southern Leyte

According to men in Lunas, the most significant source of livelihood income for them was planting (or *pag-uma*) of banana, coconut, coffee, and cacao. No specific group of people was identified as better-off in terms of livelihood opportunities. Moreover, they noted that the prices of the goods and services provided by the community to the market had increased; and thus, income increased among the community members. However, the dwindling number of trees in the forests had forced the community to look for alternative sources of livelihood. Despite the increase in income, there was an increase in the number of people to be fed within a household; thus, and a need to be more creative in making money.

Men claimed that the temperature in their area was hotter than before. Some crops like rambutan and lanzones would not yield anything because of the increase in temperature. If fertilizer was not be applied to crops, they would not grow fully. Because of this they had to use organic fertilizer (chicken manure) so as not to harm their farms, compared to their previous use of inorganic fertilizer. However, when the planted trees started growing to maturity, they felt the difference in their surroundings. The men of Lunas claimed that it no longer felt hot in the area. Two main factors contributed to these changes, namely: (1) the shift from inorganic to organic fertilizers; and (2) ending the practice of swidden agriculture.

d. Site 4: Santa Fe, Imugan, Nueva Vizcaya

Among the men of Imugan, the most significant sources of livelihood were farming and gardening of vegetables and crops such as chayote, rice, tomatoes, and tiger grass. Others were involved in raising chickens, swine, cows, and horses, or earned their living by working in LGUs in their area. Recently, more men were able to find jobs in road construction projects of the Department of Public Works and Highways (DPWH).

Respondents noticed how a changing temperature heated up the cement on the road. The summer season was longer than before, and the water was not sufficient during the summer. Seasonal patterns were changing, as: (1) farmers could no longer do two croppings in a year; (2) crops dried out under the intense sun; (3) there was a shortage in income because of the lower yields from crops; (4) people were more prone to illness because of the heat; and (5) viruses attacked crops, especially the chayote. Thus, some residents had shifted to paid labor as a source of livelihood, rather than farming.

e. Site 5: Balian, Pangil, Laguna

For the Tigbinan men, the most important source of livelihood was farming, in which most of them were engaged. They were also engaged in off-farm paid labor activities such as driving and construction work. They believed the youth had greater chances of finding better jobs once they graduated as most of them sent their children to schools. They said that life was harder for them, as it was hard to find jobs if you did not have a diploma.

Since their livelihood sources were climate-dependent, they noticed that the increased temperature was affecting their farming and fishing activities. The Pangil lake had already been affected by mercury coming from trash and garbage dumped into the bodies of water in their localities. The forests became thinner with the entry of the logging company, thus further affecting their livelihood activities. The considered the top three reasons causing these changes as: (1) illegal logging activities within the nearby forests; (2) *kaingin* (swidden farming); and, (3) neighbors covering up their neighbors' illegal activities, especially when they could benefit from them.

4. Other most significant changes in villages

Other significant changes perceived in the villages related to the restoration initiatives are presented in Table 20. In general, women became more active in livelihood activities as they were given the opportunities to participate in organizations that were offshoots of the restoration initiatives within their communities.

TABLE 20. *SIGNIFICANT CHANGES FOR WOMEN AS PERCEIVED BY MEN AND WOMEN PARTICIPANTS*

From the Perspective of	MOST SIGNIFICANT CHANGES FOR WOMEN				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Sta. Fe, Imugan, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
Men	Women's participation in reforestation and enterprises; Recognition of women's equal capacity to do "men's work"	Women having a stable source of income; Women moving away from vices	Women able to send their children to school; Women realized their equal rights and started improving themselves	Women's role in all aspects of livelihoods, especially in the food processing plant; Women trained within the organization	Women helped the SBPTI to collect water fees; Women increased their knowledge on watersheds
Women	Women's participation in jobs in the community	Women's diverse off-farm income sources from the SNPS; Well-distributed tasking of work within the SNPS; Training from various government agencies	Additional income sources for women brought by reforestation projects of DENR	Establishment of KEF's fruit-processing venture; Provision of safe water from an NGO.	Women engaged in dressmaking for income

a. Site 1: Tigbinan, Labo, Camarines Norte

The men of Tigbinan agreed that the two most significant changes for women were: (1) increased women's participation in reforestation activities and in TKFPI enterprises; and (2)

realization and recognition of women's capacity to work. Some even preferred women as office co-workers because they were recognized as being capable of doing the same work as men.

The women of Tigbanan identified various products produced by the members of TKFPI, which established different products per zone in the community. Alternative income-generating activities offered by TKFPI to the women of Tigbinan gave households more stable sources of revenue. The women of Tigbinan, in turn, noticed that there was no more practicing of swidden farming in the area because TKFPI had prohibited this practice for its members. They viewed this change positively. Villagers also played an active role in prohibiting other people from carrying out illegal activities in the area. These significant changes were brought about by the programs of DENR in partnership with TKFPI.

b. Site 2: Silonay, Calapan City, Oriental Mindoro

In Silonay, men saw women as providing more stable sources of income and doing away with their vices (e.g. gossiping, playing mahjong). The men of Silonay expressed that because of the entry of various support organizations in their area, the local members of SNPS, especially women, were able to work in the organization in various ways and in turn, helped their spouses by contributing extra income for the family.

From women's perspective, one of the most significant changes in their lives was their active involvement in off-farm income-generating activities provided by the SNPS. In particular, the SNPS ecotourism activities allowed the women to actively participate in remunerative activities such as planting/reforestation, tour guiding, and catering services. Moreover, the SNPS was able to devise mechanisms to ensure the fair and equitable distribution of income-generating activities from ecotourism. These changes in the SNPS were also due to the improvement of the infrastructure within the community, especially the building of the bridge, roads and other facilities, to allow more tourists to access the area.

c. Site 3: Lunas, Maasin City, Southern Leyte

In Lunas, men agreed that the women in their locality had improved themselves because of their increasing involvement in income-generating activities brought by YISEDA and its sponsoring partners. Women were also able to realize their worth as human beings as a result of training, visitors and the input of supporting institutions that brought in ideas from outside of the community and allowed them to understand the equal rights of women in all aspects of life. As a result, men noticed that the women of YISEDA became more self-aware. They even joked that women started having their hair treated and were becoming technologically savvy. The increase in income also brought numerous benefits to the women.

The women of Lunas noted that with the reforestation projects introduced in their area, they were able to work in seedling production, nursery operations, and maintenance of the reforestation and plantation areas. The livelihood projects also introduced by YISEDA gave

them additional stable income sources. Trainings and seminars on various topics ranging from technical to practical knowledge in forestry and other related areas were provided by the assisting organizations and government agencies to the men and women of YISEDA. Furthermore, with its successful projects, YISEDA was able to provide for women's other basic needs, such as a daycare center for the children of the YISEDA members.

d. Site 4: Santa Fe, Imugan, Nueva Vizcaya

The men of Imugan perceived that the establishment of a food processing plant in their community had provided an important source of improvement for the women. The women were mostly employed in the food processing plant, which gave them additional income and further financial independence. Women were also the ones who collected the wild fruits from the forests and processed them into jellies, jams, and prunes. They were given the necessary training by numerous institutions through the years to help them improve their skills. As a result, the community recognized women's role and capacity to create income for themselves and thus, they were involved in other projects implemented by KEF. These were new addition to the tasks given to women in Imugan.

According to the women of Imugan, an NGO which was the Philippine Association for Inter-cultural Development, Inc. (PAFID) provided safe water for domestic and agricultural uses. Later on, women were trained on carbon sequestration conducted by PAFID, and they contributed to the *Pantawid Pamilyang Pilipino Program* (or 4Ps), which provided food vouchers and other financial assistance to poor people in Imugan. Finally, the women attributed changes to the establishment of the Kalahan Academy, which provided skills and knowledge on how to sustain and manage the forests within the reserve.

KEF also provided them with the opportunity to have a stable monthly income from working at the KEF food processing plant. Women largely benefitted from this food processing center where their skills in making jams and jellies from wild fruit were developed. With their improved financial status, the women learned to get involved in community affairs, especially in instilling cultural pride among the youth. These activities allowed them to build a closer relationship and maintain harmony with other women in their community.

e. Site 5: Balian, Pangil, Laguna

The men of Balian regarded the women as instrumental in helping SBPTI collect water fees from the community members, despite the fact that the women were no longer members of the organization. Since the women's main income-generating activity was paper mache-making, and they were also involved in dress-making, they did not mention their exclusion from the SBPTI as a problem or concern. The second significant change among the women of Balian, according to the men's FGD, was the increase in women's knowledge on the watershed, especially on planting trees around the watershed area, taking care of the water supply, and cleaning of the pipelines. Although women are not directly involved in implementing these

activities, they gained the basic knowledge of what entails the proper management of the watershed in their area.

The women of Balian, however, mention that it was the Japan International Cooperation Agency (JICA) project, which installed a water tank in the area, that brought about one of the most significant changes to their lives. With clean drinking water, the women no longer needed to walk far to fetch drinking water, saving them time and reducing physical drudgery. They were also made aware of the value of their surroundings, which they knew they needed to protect.

5. Community Engagement

Questions about the communities' engagement included the following aspects: (1) source of information regarding the restoration initiative; (2) frequency and duration of the consultations; (3) purpose and outcomes of the consultations; and (4) consent in participation. In terms of the sources of information regarding the restoration initiatives, the men and women relied mainly on the information, education and communication (IEC) campaigns conducted by the POs within their localities (Table 21). As noted earlier, POs are unique to the Philippines' participatory approach context, playing an important role in assisting community members from different social contexts in their agriculture/restoration-related projects.

In general, consultations were conducted by the POs prior to any activity to solicit support for upcoming projects and inquire about the status and conditions of their constituents. Consultations were also held for the planning and decision-making processes and conflict resolution, especially related to implementation of the project activities. These consultations were directed through the elected barangay officials for them to become more official and legitimate. Officers and Board of Directors of the respective POs were also consulted about the organization's plans and projects and community and PO members were consulted on matters that directly affected them. Interestingly, the POs also coordinated with private armies (goons) and revolutionary arms of the New People's Army (NPA) at various stages of the project preparation, in order to ensure that their projects followed the unofficial protocols and gained support at the local levels.

These community engagements and consultations were conducted for the following reasons: (1) Information dissemination on all aspects relevant to the well-being of the community and its environment; (2) Information on the upcoming projects and related restoration activities and benefits; (3) Take a course of action and decisions regarding participation, conflicts, and other matters; (4) Encourage active participation of PO members at all organizational levels; (5) Discussion of the status of current/ongoing projects; and, (6) Consensus-building on all aspects of restoration and other community-led projects. These multi-stakeholder consultations resulted in better outcomes such as more efficient and smoother implementation of projects and in engaging public officials and department representatives into the local projects. Such involvement would facilitate the networking and linkages of the local POs with bigger organizations, offices, and public sectors. If members were not satisfied with the performance of the leaders of their respective local POs, they readily

aired their concerns so that the officials could correct these impressions by taking on the suggestions seriously.

Finally, some specific groups were more influential during community engagements and consultations. In Site 1 for example, the community leader interviewed noted that there were "born leaders" who would be followed by their communities no matter what. Regardless of age and gender, these born leaders would readily command respect and deference from other members of the community. They could usually be found in far and secluded communities where they were looked up to by the rest of the community. They were also consulted by the New People's Armies in order to ensure safety and other provisions for its army. In other sites, like Site 2, the PO was multi-sectoral, and spread the decision-making regarding restoration initiatives to its multiple stakeholders/actors. Elders (women and men) and indigenous peoples (IPs) were also great influencers in the process as they would provide different perspectives on matters under discussion. In Site 5, men became more prominent in the PO when the organization collapsed and the members scattered. It was the men who then led the rebirth of the SBPTI.

TABLE 21. *LEVEL OF COMMUNITY ENGAGEMENT PER STUDY SITE*

CRITERIA	LEVEL of COMMUNITY ENGAGEMENT PER STUDY SITE				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Sta. Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
Community consultation	Courtesy call to barangay. captain and local residents for any upcoming IEC training. After IEC, members of the PO conduct a reconnaissance survey to identify claimants (for land occupation claims). If proven that they were *bona fide* claimants of the land they occupy, they would be prioritized by TKFPI.	Planning in consultation with SNPS on whatever decision needed. Barangay general assembly twice a year where officials present their plans.	Officers meeting with the members through house-to-house visits; Announcements made especially during or after church service; Regular monthly meeting.	Discussion of project details among elders, Board of Directors (KEF), and barangay officials before announcing to the community in a general assembly.	Assembly meetings; Town calls through megaphones; Information dissemination.
Who was consulted?	First, the barangay council consulted. Second, on-site visits with villagers were conducted. Third, PO looks for local influencers, and people who can participate in the project. Finally, engage with the New People's Army (NPA), politicians' goons, etc.	All residents in barangay informed in every general assembly. Many agenda items raised, including matters on the management of the eco-park.	Household members (children and adults) present during visits, which is an efficient way of relaying information through children/youth if adults are not around.	Elders and Kalahan community barangay officials.	Elder members were consulted because of their experience in the activities conducted previously.
Purpose of the consultation	Inform the community on upcoming projects; Take course of	Assure other members that meetings are not exclusively for SNPS	Introduce new projects to the community; Share information especially	Encourage everyone to get involved in the project; Prepare	Disseminate information on the safety of a water line used in the

CRITERIA	LEVEL of COMMUNITY ENGAGEMENT PER STUDY SITE				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Sta. Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
	action/decisions; increase knowledge on tree species to be planted and who will plant them.	members; inform members of intangible and tangible benefits; disseminate information and other processes required in the PO (e.g., process of membership application).	on the financial expenses before turning over the project to new officers; Disseminate information on upcoming training and seminars; Discuss status of current/ongoing projects; Discuss process of securing approval for Resource Utilization Permits (RUPs).	community members on how to avoid conflicts; Identify areas to be planted and instill cooperation among members, especially in the implementation of projects.	barangay; Remind residents of their obligations in the use, payment, and management of water sources; Discuss the maintenance of the pipes, payment collection, and improvement of new source of water.
Outcome of the consultations	Projects pushed through as planned; Engaging extension officers in public hearings resulting in a better partnership with DENR; Dealing with outlaws for passage of projects in secluded areas.	Involvement of the members of the SNPS in the meetings and projects.	Members' involvement in decision-making; Disclosure of inappropriate activities for legal action by the PO members.	Discussion about project objectives; Location of restoration activities and indigenous species to plant identified.	Decisions made by PO members (women and men) who participated actively in PO meetings and other activities.
Local people's influence on decision-making	If the residents did not like the species to be planted, they provided suggestions like planting timber instead of fruit-bearing trees. These suggestions were examined by the PO officers and approved for implementation.	Where there were community members who were not satisfied with the efforts of the PO members, the community leaders would provide more information to them and to all the people in barangay.	Recommendation of people to become part of a project.	Agreement among the members on policies and distribution of benefits from projects done by the PO.	Members occasionally attend meetings; but PO officers are required to attend meetings.

CRITERIA	LEVEL of COMMUNITY ENGAGEMENT PER STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	**2** **Silonay, Calapan City, Oriental Mindoro**	**3** **Lunas, Maasin City, Southern Leyte**	**4** **Sta. Fe, Imugan, Nueva Vizcaya**	**5** **Balian, Pangil, Laguna**
Specific groups with influence in decision-making	"Born leaders", who could be an elder, woman or youth. They are not officials but can influence people especially in secluded areas. It was important to identify them in community organizing. Even NPA identified them to provide better communication.	SPNS was multisectoral, deciding on everything within different sectors, and stakeholders airing their own voices.	Men and women adults.	Elders were involved in every discussion; IPs were also involved; the majority were included in the MOA based on the outcome of the meetings/ consultations.	No particular group holds influence. However, other PO members did not have time to participate in the decision-making; Recently, male members became leaders of the SBPTI making this organization male-dominated if not male-exclusive; the general public automatically remained members of the initiative.

D. Impacts

The impacts of the studied restoration initiatives are analyzed in terms of: (a) tenure and land use; (b) environmental effects in relation to resource management practices; and (c) livelihood effects in relation to well-being, economic and social impacts.

1. Tenure and land use

Table 22 summarizes the information on tenure and land use per study site, as well as: (1) changes in land use; (2) population most affected by changes in land use; (3) safeguards applied by the organization; and (4) effects of safeguards on certain groups.

TABLE 22. *TENURE AND LAND USE IN THE STUDY SITES*

CRITERIA	COMMUNITY ENGAGEMENT PER STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Sta. Fe, Imugan, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
Tenure	CBFMA*	CBFMA; LGU resolution that the land area was owned by the SNPS	CBFMA	CADT with no individual titles through MOA1	Titled lands owned by individual households of PO members; other PO members were renting
Land use	Multiple uses of forest lands based on the CBFMA policies	Ecotourism park; Marine Protected Area	Plantation forests	Plantation forests	Forestlands (uplands), agricultural lands (lowland)
Changes in land use	Change in vegetation cover from cogonal grasslands to forests and wildlife	More mangrove forest cover	In the 1960s-1970s soil was more fertile and forest cover thick; Rapid degradation afterwards	More forest cover as a result of the interventions ; More wildlife in the forests; Removal of swidden farms	More trees, as planted previously by the community

CRITERIA	COMMUNITY ENGAGEMENT PER STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Sta. Fe, Imugan, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
Safeguards applied	Issuance of certification from TKFPI of being *bona fide* members when conflict arises	Land was not allowed to be privatized	Policies and mechanisms recognizing the right to manage the forest lands by CBFM holders	Free, Prior and Informed Consent (FPIC) from the community	None
Effects of safeguards on certain groups	Ensure that CBFMA claimants would still have the land even after the end of contract	Non-members envious of the earnings of SNPS members from the ecotourism park	Promoted equality among CBFM holders	Community members mindful of their rights to the land	None

Source: KII-Project Staff

* CBFMA = Community-based Forest Management Agreement

In Site 1, the land tenure instrument covering a portion of the community was the Community-based Forest Management Agreement (CBFMA), a government-issued (25-year) tenurial agreement between the Department of Environment and Natural Resources (DENR) and the communities. The CBFMA ensures DENR protection of the forest lands against further encroachment and guarantees the reforestation and restoration of the forestlands awarded to the community, who follow all the guidelines and policies of the CBFMA. One of the issues arising from the CBFMA in Site 1 was the presence of CBFMA non-member claimants (who are not members of the PO). The members of TKFPI were concerned about whether these non-member claimants would still maintain their pieces of land within the forests covered by the CBFMA even after the CBFMA duration of 25 years, renewable for a further 25 years. As a safeguard, TKFPI issued certification of bona fide membership, which the members used as proof of their legitimate claim over respective land within the CBFMA area. This certification proved helpful in settling conflicts over lands in the community.

In Site 2, the land tenure instrument was two-pronged, namely: (1) a national tenure instrument (CBFMA) that declared the community's position (occupation, not rights per se) in the area; and, (2) a barangay-level resolution declaring the land to be communally owned and managed by SNPS. These instruments provided SNPS with a mandate to fully manage the area on behalf of the community, which was greatly affected by changes in land cover, vegetation and other biophysical aspects of the ecotourism park. Other members of the community who were not members of SNPS became envious of the earnings of the SNPS members; nonetheless, they did not do anything to jeopardize SNPS operations. As safeguards, the SNPS

declared that the area could never be privatized and would remain public land for use by the common interest. As part of this, the SNPS deputized several community members to become part of the Bantay-Bakauan (guards of the Bakauan, a mangrove tree); voluntary positions, which may be given small allowances.

In Site 3, the land tenure instrument was also CBFMA as managed by YISEDA with technical support from Maasin City government and DENR. The restoration initiatives to be carried out under the CBFMA were discussed with the "owners" (i.e. people occupying the land, although official ownership of the land lays with the government). The community as a whole would be affected by any changes in land use and tenure as their livelihoods were largely anchored on the land. To safeguard their position within the area, YISEDA promoted policies and mechanisms to recognize the land management rights of its members to use, protect, and conserve the lands, but not to own or sell them. A list of all land rights holders in the community was made.

In Site 4, the land tenure instrument was the Certificate of Ancestral Domain Title (CADT), created through the originally signed MOA 1 between DENR and the KEF. The CADT legitimized the PO members' positions within the farm lots and forest plantations that were government owned. However, community members could not obtain an individual title for their plots under the CADT. They therefore operated a family approach wherein each family had its own management plan for their family's parcels of land, as long as the plans did not conflict with KEF policies. The families tended to consult KEF and secure the permits before doing their planned activities. These practices prevented swidden farming that involved burning. Because of such restrictions, some people looked for —and found— more labor opportunities outside the farms. Furthermore, to prevent land being given away to outsiders, KEF ordered that no activities could be done within the forest reserve without the free, prior and informed consent of the Kalahan community authorities. The strict implementation of this policy prevented further encroachment by outsiders into the Kalahan forest reserve.

In Site 5, land was privately titled with some land rentals. There were no safeguards to ensure equal access as all residents were beneficiaries of the water lines established by the SBPTI. Conflicts only arose when the water line conduits crossed or interfered with other land uses. However, successful negotiations between the SBPTI and landowners took place to obtain the right of way for these water lines for the continuous supply of water to the community.

2. Access and Control over Land

Table 23 summarizes access and control rights over the lands in the 5 study sites. "Access" was understood as the ability of men and women to use the land and the resources therein; while "control" was taken to be the ability of men and women to decide who, when, where, how and for what purpose the land and the resources therein should be used. Forestlands in the Philippines are owned by the state. Buying land may refer to either buying the right to occupy

(but not own) land, when lands are owned by the state, or buying the actual title and ownership of the lands.

TABLE 23. *ACCESS AND CONTROL OVER LAND, DISAGGREGATED BY GENDER*

CRITERIA	GENDERED DIFFERENCES				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Sta. Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
Mechanisms to gain access	Men: Pay rights over land; Prices vary from Php 50,000 to 100,000 per hectare	Men: Access exclusive to the community as property is owned by the barangay	Men: Through inheritance	Men: Lands exclusive to Kalahan; but they cannot sell lands	Men: [No data]
	Women: Need to talk with the barangay council for land allocation	Women: Passed down properties/titles from ancestors; Some families sold their lands	Women: Through inheritance; selling and buying lands was not allowed	Women: Lands exclusive to indigenous peoples; can be inherited but not bought	Women: Lands can be bought or inherited from parents/ ancestors
Access and Control of resources and land	Men: Women can sell rights inherited from their parents	Men: Men have access through inheritance	Men: Women have access but preferably the first-born is prioritized regardless of gender	Men: Both men and women have access to land regardless of gender	Men: [No data available]
	Women: Women have the right to land through inheritance	Women: As long as they have money to buy properties; some got theirs through inheritance	Women: If given inheritance and rights to the land	Women: Both men and women have access	Women: If they have money; usually work abroad to earn money
Restrictions on women's land ownership	Men: No restrictions	Men: No restrictions	Men: No restrictions	Men: No restrictions	Men: [No data available]
	Women: No restrictions, but some conflicts arise especially during harvest	Women: No restrictions	Women: No restrictions	Women: No restrictions	Women: No restrictions unless they do not have enough money to purchase
Young men's access to land	Learn about farming	Yes, through inheritance	Not yet given access to own	Not yet given access to own, but help	Not yet

CRITERIA	GENDERED DIFFERENCES				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Sta. Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
	practices from their parents			their parents in cultivating the land	
Restrictions to young men's land ownership	None	None	Due to lack of knowledge/ training on land use and management; Dependent on parents	None; but not yet capable of managing the land on their own	None; but not yet capable of managing lands
Young women's access to land	Same as young men's	Same as young men's	Same as young men's	Mostly help their parents until married and settled with spouses	Same as young men's

Source: KII-Community Leaders

In Site 1, both men and women agreed that women have the right to sell their lands. Some parents already divided their lands according to the number of children, who were given the documents declaring that they were the ones managing the area because the women have rights to transfer the land to children. There were some parents who divided their land equally among their children whether they were male or female. As far as restrictions were concerned, women, young male, and young female children did not have any limitations in access and control of their respective lands. Women, however, emphasized that during harvests, they would experience some conflicts with men (though not necessarily husbands) over decisions regarding future land use and produce, especially on where, when and what to plant after harvest.

In Site 2, men and women responded similarly that women had access to lands in their locality. They could inherit lands from their ancestors or other family members. Women did not have limitations to owning lands, nor did young men and women in the community, as long as they had money to purchase lands, or when their families owned lands.

In Site 3, women gained access to land through inheritance or if they were granted land rights they were occupying by authorities. Sale and purchase of lands was not allowed in the community. Both young men and women were not given access to lands for two reasons: (1) they still lacked the knowledge or training to use or manage the lands; and (2) they were still dependent on their parents especially in making decisions.

In Site 4, both men and women had equal access to the use and management of the land. Traditionally, it was the men who had more rights over the land, but the women used the land more than the men as the women were more knowledgeable about swidden farming than the men. Women's access to land was without restriction. Young men and women still helped their parents on the farms. They were not given autonomous access to the farms as they were

regarded as still lacking knowledge. Young women helped on their parents' farms until they got married and settled in their spouses' locality.

In Site 5, women claimed that both men and women had equal access to land. Women even worked abroad to save up money to buy lands. Young men and women were not yet given access to land as they were not yet knowledgeable in using and managing the lands. However, they could acquire lands either through inheritance or purchase.

3. Ecological, economic and social impacts: livelihood, resource management practices and well-being support

Table 24 summarizes the ecological, economic and social effects of the restoration initiatives in the study sites. Respondents focused mainly on livelihood generation, resource management practices, and support provided by the initiatives to improve their well-being.

TABLE 24. *ECOLOGICAL, ECONOMIC, AND SOCIAL EFFECTS OF RESTORATION INITIATIVES*

CRITERIA	COMMUNITY ENGAGEMENT PER STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Sta. Fe, Imugan, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
Ecological impacts	Knowledge on climate change and disaster management	Different species of birds, mud crabs, bees, shrimps; Fully grown mangroves; No casualties during typhoons	Fresh air; More bird species; Monkeys and snakes; Pitcher plants and other species	More trees and restored forests	No longer prone to flooding
Economic effects	Daily wages from TKFPI's enterprises (e.g. handicrafts)	Earnings from ecotourism	Daily wages; Accessible roads; Other government projects	Daily wages; Profits from selling wildlings to food processing plant	Savings from water consumption
Social effects	Social security benefits, Medicare, paternity/maternity leave; capacity-building	Unity among community members	Educational benefits; Personality development; Infrastructure facilities	Awards recognizing all their achievements	*Bayanihan* spirit

Source: KII-Project Staff

In Site 1, the members of the restoration initiatives received training on climate change and disaster management, which allowed them to be more concerned about their environment and about managing their natural resources. The socio-economic benefits were anchored on the activities conducted in the restoration initiative, as well as its offshoot enterprises. Both the staff and officers of TKFPI were given technical training. The attendance at these trainings was more or less gender balanced where 4 out of 10 staff were women-attendees, and 6 women were involved in community organizing and supervising. TKFPI staff also received training on capacity-building especially in handling the PO and its members. These employees received salaries and other benefits given to government employees, such as social security, Medicare, paternity or maternity leave, although TKFPI was only an NGO. Those who worked in the restoration initiative received the daily wage at the provincial rate.

In Site 2, the most notable benefit/impact of the restoration initiative was the renewed presence of different species of birds. This facilitated birdwatching within the ecotourism park. There was also an increase in the population of mangrove species such as mud crabs, bees and shrimps. Participants claimed that because of the project, which resulted in their reforestation of the mangrove area, many local and international tourists visited the mangrove area, generating income not only for SNPS but, more importantly, for the households. They also attributed improvements in their organization (a "more beautiful" i.e. efficient, organized, collegial, and unified organization) to the project.

In Site 3, aside from providing fresh air to the community, restored forests provided a good habitat to new species of birds sighted flying over the area. The community also claimed that there were now monkeys and snakes previously not seen in the forests. Moreover, rare native species such as pitcher plant and agoho (*Casuarina equisitifolia*) were seen thriving in the restoration site. In terms of the economic benefits, they gained additional income through YISEDA's projects, which paid people working within its projects the provincial daily wage rate. The work was age-based; physically-demanding work would be assigned to younger male and female workers rather than to the senior workers. Before the restoration initiative, women found it hard to voice their ideas and suggestions during meetings because they lacked self-confidence. However, because of their active participation in YISEDA, both male and female members were able to receive training on public speaking skills and establish networks with other co-beneficiaries and institutions, organizations and individuals. Infrastructure facilities such as a daycare center, primary school, and water reservoir were sponsored by the local city government, NGOs, and international agencies and coordinated by YISEDA.

In Site 4, KEF's restoration initiative brought about ecological benefits such as more robust forests and an increased number of trees. It has become its core value to protect trees by restricting the practice of the traditional swidden agriculture that could cause forest fires. As a policy, KEF required everyone to participate in community service (i.e. reforestation and/or planting of trees in the forests). In the event of a fire, everyone was required to assist in putting it out. In terms of economic benefits, the community, particularly the women, benefitted from

the establishment of the food processing center where the rest of the youth, men, and elders could bring their collection of wild fruits for extra income. The women received daily wages for working in the plant and, at the same time, gained profits from selling wild fruits and other non-timber forest products. Local government units publically recognized these milestones and achievements.

In Site 5, ecological benefits from the restoration initiative were felt by the way flooding was controlled due to improved forest cover. Moreover, the SBPTI put great efforts into cleaning up the lines that supplied water to the households and farms. The members cleared up the obstructions along the gutters and thereby provided irrigation to rice fields and other highly-elevated farms. This reaped the spirit of *bayanihan* (communal self-help) as part of the restoration initiative. This self-help mindset also helped the SBPTI members to make savings on their family expenses as they only paid a menial amount of Php 30 (roughly USD 0.59 cents) for their monthly water supply.

E. Impact Pathways

Respondents were asked how they perceived the impacts of key activities and measures leading to desired or undesired changes in the community brought about by the restoration initiatives per study site.

1. Resource management practices

Table 25 presents the changes in resource management practices of the men and women in their respective restoration initiatives. Respondents emphasized the changes in terms of the kind and coverage of species they planting, the depth and extent of their awareness and understanding of the technical knowledge they gained, and the various restrictions and policies imposed on them by and because of the restoration initiatives.

TABLE 25. CHANGES IN RESOURCE MANAGEMENT PRACTICES IN THE RESTORATION INITIATIVES BY STUDY SITE

GENDER	STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Sta. Fe, Imugan, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
Women	Planting of citronella and other non-timber forest products for enterprises	Appreciation of the importance of mangroves; Beautification of the ecotourism park	Not many changes in resource management	Keeping in mind the sustainable harvesting of forest resources	Stopping the cutting within protected areas; Looked for alternative sources of income

GENDER	STUDY SITE				
	1 **Tigbinan, Labo, Camarines Norte**	2 **Silonay, Calapan City, Oriental Mindoro**	3 **Lunas, Maasin City, Southern Leyte**	4 **Sta. Fe, Imugan, Nueva Vizcaya**	5 **Balian, Pangil, Laguna**
Men	Nursery operation; Maintenance of planted trees	Studied and learned about the enterprises born from the restoration initiatives	Gained knowledge on planting and learned the value of the forests	Learned the processing of fruits into jams and jellies	No changes; still the same procedures

Source: FGD with women and men

In Site 1, the women planted non-timber forest products, like citronella, to supply the TKFPI enterprises with raw materials for processing. The establishment, operation, and management of the nursery owned by TKFPI helped enterprises, especially the National Greening Program. Members were tasked with maintaining, and not just planting, seedlings in forest areas.

In Site 2, women emphasized that the restoration initiative, and specifically the awareness campaigns of SNPS and CI, taught them to appreciate the importance of the mangrove forests for their community. The women helped in planting mangrove trees in the area, especially in the beautification of the eco-park to attract more tourists, both local and international. Women were the ones managing and operating the venue, as well as cooking and serving food to customers who provided the services of the ecotourism park operated by SNPS. The men of Silonay added that the women also helped in planting and maintaining the mangrove trees and learned the nitty-gritty of the operations of the various enterprises resulting from the restoration initiatives, especially in the catering services and tour guiding.

In Site 3, the women of Lunas agreed that there were not many changes in YISEDA's resource management practices, as they had been properly defined and consistently implemented from the outset. The men saw that women gained technical knowledge on planting and learned the value of forests through their acquired technical knowledge. They refrained from collecting anything from the forests without permission because it was prohibited by YISEDA.

In Site 4, the women adopted KEF's principles and policies towards sustainable harvesting of forest resources. This was mainly what guided them in conducting their activities in the Kalahan forest reserve. The men of Imugan saw the women learning to process raw materials from the forests into jams and jellies, which gave them stable and sustainable incomes. This enterprise was an offshoot of the restoration initiative implemented in the Kalahan forest reserve.

In Site 5, women noted that since tree cutting within the protected area had been stopped, they needed to look for an alternative source of income that was not forest-based.

They found such an alternative in the paper mache-making business. The men of Balian did not see any changes in resource management practices.

2. Key activities and measures leading to desired or undesirable changes

Women and men shared their perceived impacts of the restoration initiatives. In general, there were very few concerns, particularly from women. In Site 1, while women did not recognize any undesired impacts on them from the TKFPI restoration initiative, the men expressed their concerns over the unequal distribution of benefits resulting from the interventions. According to the men, not all PO female or male members received the benefits from the enterprises of TKFPI, as the women's wages depended on their skills and type of work carried out. Senior citizens did not receive any retirement fund from working in these enterprises despite the length of their service to TKFPI.

In Site 2, the women again saw no undesirable or negative impacts of the SNPS restoration initiative on the women in their community. Some men, however, complained that women's involvement in the restoration initiative had given them less time for the family. In Site 3, both men and women noted that there were no negative impacts on them resulting from YISEDA's restoration initiative. In Site 4, women of Imugan claimed that the restoration initiative had had no negative impact on them, whereas men pointed out that, although not part of the restoration project per se, the construction of the main road caused landslides to occur, thereby obstructing the irrigation system in the area. In Site 5, the women of Balian did not report any negative impacts but men considered that the women's payments for the water services could have a negative impact on them.

IV. DISCUSSION

A. Key differences and similarities between men's and women's experiences

Table 26 presents the summary of the key differences and similarities on the experiences of women per study site.

TABLE 26. *KEY DIFFERENCES AND SIMILARITIES IN WOMEN'S EXPERIENCES*

CRITERIA	GENDERED DIFFERENCES				
	1 Tigbinan, Labo, Camarines Norte	**2 Silonay, Calapan City, Oriental Mindoro**	**3 Lunas, Maasin City, Southern Leyte**	**4 Sta. Fe, Imugan, Nueva Vizcaya**	**5 Balian, Pangil, Laguna**
Types of support	Gender sensitivity/ GAD; Entrepreneurs hip; Strategic planning	Meat processing; Honey bee culture	Fees for the tasks assigned by YISEDA	Training on food processing, teaching handicrafts and welding	Training on livelihoods like handicrafts, beauty salon, food processing
Income	Increase in income	Increase in income	Savings and shares from YISEDA COMSCA	Stable additional income	Stable additional income
Food security	More food on the table now	Enough food for those working hard	Enough food	Enough food	Food was still not enough
Overall rating and experience	5* Both LGUs and TKFPI were helpful in providing support to women	5 They found comfort in the enterprises that SNPS provided them with	4 YISEDA provided more work and benefits	5 Sustainable harvesting changed the entire community.	4 The community benefitted from the SBPTI and its projects.

(Source: FGD, women's groups)

*Legend:
1= very negative
2= negative
3= no effect
4= positive
5= very positive
6= both negative and positive
99=don't know

In Site 1, women shared positive experiences. They were given training to further improve their status and wellbeing. These trainings included, but were not limited to, gender sensitivity/gender and development training, entrepreneurship, and strategic planning.

Personality development seminars were also given to TKFPI members. Moreover, participation in the various enterprises of TKFPI allowed them to increase their household income. They emphasized that in their community, no one went hungry; only the lazy could not find food in their midst. Since they were farmers, they could secure food for their households to avoid famine in difficult times. They remembered that they needed to line up for rice in the 1970s when there was hoarding of rice, in the 1990s after El Nino, and in 2013 when there was an unexpected increase in the price of rice. However, they were already wiser in saving money and other resources for their family so that they would never experience these events in their community.

In Site 2, women claimed that previously (around 2005 and earlier) they frequently experienced food shortages especially if the households were highly dependent on the sea. Food shortages could occur during monsoon season when it would be harder to fish in the oceans. Now, they no longer experienced food shortages. Trainings on income-generation occupations such as meat processing and honeybee raising were provided by the SNPS through the assistance of LGUs and CI. Income was easier and more stable now than before.

In Site 3, the women were able to generate savings and shared from the enterprises of YISEDA COMSCA (the women's arm of YISEDA). They also received payments for whatever they did for YISEDA; for example, planting and brushing. They established additional enterprises that fit well with their interests and schedules. The increase in income allowed them to buy or bring enough food to the table. Seldom did they hear of households going hungry in their area. Only those who were highly dependent on crops could be affected by food shortages, especially during pest outbreaks and typhoons. Since 2005, they could experience food shortages during outbreaks of illness in the family or when they borrowed money that needed to be repaid. They secured extra income for their respective households from the YISEDA restoration initiative.

In Site 4, women said they had not experienced food shortages in their entire lives as their households maintained small backyard gardens where they could get whatever they wanted when they needed it. The women received numerous trainings to improve their knowledge and skills on food processing, teaching, handcrafting, and welding. These acquired skills allowed them to generate additional income. According to them, the sustainable harvesting that resulted from the KEF restoration initiative changed the whole community for the better, without losing the Kalahan culture. The education provided by Kalahan Academy, which the KEF opened in the community, served as the main conduit for achieving their hopes and aspirations. According to the women, these milestones became a role model for nearby towns in implementing community-based forest management.

In Site 5, the women received trainings to generate or improve their livelihood options such as handicraft-making, beauty salons, and food processing. Although these livelihood activities generated additional and stable incomes for most of them, some families experienced food shortages, especially during the rainy season. Food shortages usually occurred in outlying locations that become inaccessible during the rainy season due to muddy roads, which make it

hard for men and women to sell their produce to the market. Women considered that the SBPTI restoration initiative gave them more livelihood opportunities.

B. Relationship between gendered decision-making and restoration outcomes

Table 27 shows women's and men's perceptions of women's position in their society, expressed in response to statements about decision-making at the household and community levels. Participants were asked to respond individually about whether they agreed (A) or disagreed (D) with each of the statements.

In Site 1, women generally found women's role and participation in decision-making processes adequate, as did most men. Reasons provided included that women could influence decisions if they provided good suggestions and that they were active participants of the TKFPI because they had their own TKFPI-related livelihood activities. Men claimed that in every household, it was women who took charge of budgeting and that it was necessary for them and their spouses to discuss the most important concerns and needs of the community. Women were normally involved in the decision-making in some ways.

In Site 2, some women and men disagreed that: "Women are sufficiently represented on influential village decision-making bodies." Both men and women believed that women were not sufficiently influential when it came to making crucial village-level decisions; and that they should be more involved in decision-making bodies. However, men expressed that when their spouses did not like the decision, they would make it hard on them. The rest of the statements were unanimously agreed upon. Men described the women as "di *pahuhuli* ng *buhay*", meaning that it was but natural for women to be competitive in life. They were the first to find ways to solve their problems. They were active in microfinancing since they were not afraid to borrow for their families, whereas men were too proud to take out loans.

In Site 3, women agreed with most statements and considered that: (1) Women were entitled to their own feelings and would advocate for what they thought to be best for everyone; (2) Women were most helpful in the implementation of projects; and (3) The active involvement of women in the YISEDA was a big leap from their previous place at home to the public space in the meetings. Disagreements among men over some statements were explained by the fact that some were single or widowers, so they made their own decision without women. Some also believed that having equal rights was difficult to achieve. Nonetheless, responses largely pointed to women's important role and participation in decision-making at the village and household levels.

In Site 4, 4 out of 6 women (66%) did not agree with statement 1 "Women are sufficiently represented on influential village decision-making bodies" because men in Imugan made most of the big decisions. Only very few women served in the barangay (village-level) decision-making body. Yet, women were actively attending meetings and proposing policies to the village-level decision-making body, be it in KEF or the barangay council. Previously,

women depended on their spouses to decide regarding public affairs; but now, they learned to voice their views without hesitation. Men considered that: (1) Men and women have equal rights; (2) Some women could be leaders and make their own decisions; (3) Young people need to see that they are empowering women as well; (4) It makes things easier when women were involved; (5) Women are very active and at the forefront in meetings; and (6) It is easier to ask favors (requests for tasks/activities) from women if they were involved. The women even advocated for, and won, the prohibition of gambling and alcohol in their community from the barangay council because their husbands were always drunk.

In Site 5, the statements did not generate unanimous responses from the women except on statements 4 "Women participate in making rules for resource use" and 5 "In most households, women are able to participate in decisions about how household income is spent". The main reasons provided by the women for these responses were as follows: (1) Their priority was their children; (2) If women were not called to meetings, they usually would not attend; (3) Women did not have ownership over the land, which limited their decision-making; and, (4) Women did not have access to information so when men did not tell them the details of the decision-making processes, they would never know. In cases where the women unanimously agreed to the statements, they gave the following justification to their responses: (1) Women could do what men could; (2) Combined ideas from both men and women would be better for the community; and, (3) Women did the household budgeting. Men basically agreed on statements 1-6, but mostly disagreed with statement 7: "In most households, women play an active role in decisions about land use (e.g. what to grow, collect, from where, how much etc.)". The reasons for their agreement to statements 1-6 included: (1) Women held official positions in the barangay; (2) Women actively attended community meetings especially the Parent-Teacher Assembly because men were at work; (3) Women were easier to convince to attend the meetings; (4) Women also 'helped out' in the livelihoods; and (5) Women did the household budgeting. In fact, the men considered women as important in financial and farm management. Some even responded that it was the women who managed the lands, not the men.

TABLE 27. *PERCEPTION OF WOMEN'S STATUS IN THE COMMUNITY*

STATEMENTS	**Tigbinan, Labo, Camarines Norte**				**Silonay, Calapan City, Oriental Mindoro**				**Lunas, Maasin City, Southern Leyte**				**Sta. Fe, Imugan, Nueva Vizcaya**				**alian, Pangil, Laguna**			
	Women		Men		Women		Men		Women		Men		Women		Men		Women		Men	
	A*	D*	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D	A	D
Women are sufficiently represented on influential village decision-making bodies	8	0	6	1	4	5	4	4	8	0	4	3	2	4	6	1	4	4	8	1
Women are usually able to influence village decisions when they want	8	0	6	2	7	2	7	2	7	1	5	2	5	1	6	1	5	3	9	0
Women participate actively in meetings	8	0	8	0	9	0	8	0	8	0	6	1	5	1	7	0	5	3	8	1
Women participate in making rules for resource use	8	0	8	0	8	1	8	0	8	0	7	0	5	1	7	0	8	0	9	0
In most households, women are able to participate in decisions about how household income is spent	8	0	8	0	9	0	8	0	8	0	7	0	5	1	7	0	8	0	9	0

In most households, men consult women before making important decisions	8	0	8	0	9	0	8	0	8	0	6	1	5	1	7	0	7	1	9	0
In most households, women play an active role in decisions about land use (e.g. what to grow, collect, from where, how much etc.)	8	0	8	0	3	0	0	0	8	0	6	1	4	2	6	1	7	1	1	8

Source: FGDs with men and women; *A= Agree; *D= Disagree with the statement presented.

C. Youth trajectories

In Site 1, there were more female (70%) than male (30%) students in both primary and secondary education. There were very few out-of-school youths as children were diligent in finishing their studies. A new school had been built in this community because of the increasing number of students. Some students even came from other barangays. Young girls, upon finishing their secondary education, pursued college education in other towns. Those who completed their schooling and had earned a Bachelor's degree immediately looked for jobs and started working, usually in big cities such as Manila. Young girls wanted to go abroad or work in other provinces, while others chose to be housekeepers and spouses. Respondents thought that some of the younger men, especially when able to finish college, were not willing to stay in the community to have the same occupation as their parents.

In Site 2, community leaders considered that about 60%-70% of the young boys, and about 80% of the young girls were attending elementary schools. About 60% of the young boys and 70% of the young girls continued their education to secondary school. The difference in the numbers was due to the dropouts caused mainly by financial constraints. Most of the children who did not complete their studies helped out their households in the farms and other livelihood activities. However, respondents considered that those who pursued their secondary education were able to finish high school. Parents were determined to have their children finish their studies and children witnessed the struggles of their parents in sending them to school. Some younger girls wanted to work outside of their communities hoping that there would be better opportunities for them rather than just staying in their areas and getting married at a very young age.

In Site 3, respondents explained that almost all of the young boys and girls in the community went to school. The ratio of young males and young females who went to elementary school was estimated to be 2:8, respectively. Only about 50% of these elementary schoolers ended up in high school. However, most of those who pursued secondary education graduated successfully in high school. Those who did not persevere in their studies tended to look for jobs to help the family or got involved in their families' daily farming activities. Those who did pursue their studies would eventually complete their college education. There had been many changes in the schooling practices since 2005, namely: (1) extending the school day by changing class dismissal from 4pm to 5 pm; (2) more school activities than before; and, (3) more students. Moreover, those who chose to stay in the community found it easier because of the familiar ambiance.

In Site 4, respondents noticed that while there might be many young boys going to elementary and secondary schools, young girls still outnumbered them in terms of school attendance. More young women also finished their studies compared to young men who could not finish their studies because of the following reasons: (1) not persistent in their studies; (2) constrained financial resources of the family; and (3) need to provide labor to family farms. Young women either finished school or entered the call centers in Metro Manila. This pattern of migration was also observed among young men who went to Manila to work or become policemen, soldiers or seamen. These employments would guarantee the family financial

capacity once their children, particularly when they would go abroad and send home remittances.

In Site 5, there were more young girls than young boys attending school. It was estimated that the proportion of young girls to young boys in school was 60% to 40%, respectively. Nonetheless, young boys and girls both persisted in their studies and a number of students were able to finish their secondary education due to the free-tuition program of the national government. Those who chose to stay in the community needed to find jobs, work on the farm, or tend the household. Others wanted to leave and find good job opportunities in nearby cities.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The five restoration initiatives studied provide good examples of successful development efforts in the Philippines. The spirit of *bayanihan* (communal self-help)—a typical Filipino cultural value –prevailed in each of the study sites and persisted over time, despite the challenges of environmental degradation, climate change, and socio-political problems.

Findings from this study reinforce and corroborate the existing literature on the role of grassroots organizations (in this case, the POs) in organizing themselves and their interventions to bring about lasting restoration initiatives. The POs' strength in achieving successful restoration initiatives lay in their long history of involvement and engagement in the restoration and protection of the forest resources, allowing them to accumulate rich and diverse experiences in this regard. Moreover, it was due to their embeddedness in the communities and the legitimacy they held for local people, which ultimately made restoration efforts community-led. Replicating the restoration initiatives model used in the Philippines would require ensuring the engagement of similar organizations in the given context.

The presence of external actors, including the persistent and consistent technical and financial assistance of the LGUs, NGA, NGOs, and international donors, must also be acknowledged for their role in supporting and pushing forward the advocacy of these organizations. A favorable legal environment as well as government services offered the POs a suitable operating space for their interventions.

Other key takeaways from the study relate to the way the initiatives were implemented. They were long lived, which allowed the benefits of restoration to be achieved and perceived over time, and thereby encouraged continued participation. Emphasis was placed on sensitization and awareness raising about the environment, and on strengthening capacities of local communities to pursue alternative livelihoods that did not degrade resources. These alternative livelihoods, and more general efforts to halt the degradation rather than simply focusing on planting trees, were critical success factors. Direct employment through the restoration initiatives was a strong motivating factor for participants; however, since such opportunities are fickle, supporting alternative sources of income was of central importance for the sustainability of restoration. Public consultations and efforts to widely disseminate information through various media and in various places contributed to maintaining everyone on board in the restoration initiatives. Other critical factors were clarifying rights and securing land ownership as well as attention to conflict management. Finally, the multi-pronged nature of the interventions showed understanding of how resource use and management is embedded in the lives of rural dwellers and interdigitated with other livelihood strategies. Restoration, then, requires alleviating pressure on resources and finding ecologically sustainable management strategies while addressing the multiple needs of local people.

B. Recommendations

While the five initiatives studied may not be representative of all restoration initiatives in the Philippines, they provide lessons for current and future initiatives with regard to improving well-being, socio-economic equity, and environmental integrity.

1. Well-being

Guaranteeing the well-being of community members was at the heart of the restoration initiatives. Bearing this in mind, the following observations and lessons were drawn from the initiatives in the five study sites:

(1) Training and seminars offered by NGOs and Pos were effective in educating the community members. These included or should include emphasis on:
   a. Gender awareness, sensitivity, balance and mainstreaming
   b. Technical know-how (e.g. nursery and plantation operations)
   c. Climate change and disaster risk management
   d. Skills in farm use and management

(2) Activities that develop community members' self-confidence can support restoration initiatives; and,

(3) Social services such as health, education and livelihood support should always be provided and improved by government agencies at all levels of governance.

2. Socio-Economic Equity

To ensure equity in the socio-economic benefits generated from the restoration initiative, the following will be needed:

(1) A benefit-sharing scheme between and among community beneficiaries and the sponsoring agencies;

(2) Stable policies governing the benefit-sharing scheme to be honored even by changing governments;

(3) An understanding of social, economic, and political equity by community beneficiaries so impacts in these areas can be easily measured;

(4) Alternative livelihood options of interest to the community, which encourage members to participate in study/project activities;

(5) The forests and other ecosystems being restored should be seen as providing indirect income generation options to community members, rather than as the main source of livelihoods.

3. Environmental integrity

In order to achieve sustainable environmental integrity through restoration initiatives:

(1) Strong and achievable program targets and individual farm plans should be set;
(2) Each household lot and farm should be mapped as part of the larger picture of the restoration initiative;
(3) Well-organized leadership structures are needed that are organic in the community and not a mere imposition by the sponsoring authorities;
(4) Strict implementation is needed of the rules and policies that result from negotiations between community recipients and the organizers/sponsors and awareness raising and technical training are needed (rather than strictly sanctions) to help participants understand the importance of implementing the agreed rules.

More generally:

(1) Follow-up studies should be conducted in 5 and more years' time to better understand the restoration initiatives' medium- and longer-term outcomes;
(2) The study should be replicated in other sites with similar characteristics but different ecological contexts;
(3) Knowledge products are needed to share and disseminate the results of this study with local and national stakeholders and in relevant international fora or communities of practice;
(4) Engagement should be sustained with the restoration initiative participants who participated in this study, as a way of giving back to these communities.

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ANNEXES

ANNEX A: Field Team Members and Dates and Locations of Field Work

No.	Date	Location	Focal Person	Purpose	No. of Days
1	November 21-25, 2018	Manila-based offices	Dr. Larissa Gata	To serve the letters to respective Manila-based offices; ask permission for field visits; gather secondary data (field assistant)	5
2	November 24-25, 2018	Daet and Labo municipalities in Camarines Norte	For. Ramil Gata & Ms. Abby Grace Bermejo	To coordinate and conduct KIIs and FGDs in the field (site coordinator)	2
3	November 25-27, 2018	Labo-Capalonga, Camarines Norte	For. Ramil Gata & Ms. Abby Grace Bermejo	To conduct KII and FGD in the area	3
4	November 28, 2018	Silonay, Calapan City	Mr. Eleazar Luma & Ms. Abby Grace Bermejo	To coordinate and conduct KIIs and FGDs in the field; gather secondary data (site coordinator)	1
5	November 29-30, 2018	Silonay, Calapan City, Oriental Mindoro	Mr. Eleazar Luma & Ms. Abby Grace Bermejo	To conduct KIIs and FGDs in the area	2
6	December 3-5, 2018	Balian, Pangil, Laguna	Mr. Eleazar Luma & Ms. Abby Grace Bermejo	To coordinate and conduct conducting the research at the field level; gather secondary data	3
7	December 6-7, 2018	Balian, Pangil, Laguna	Mr. Eleazar Luma & Ms. Abby Grace Bermejo	To conduct KIIs and FGDs in the area	2
8	December 10, 2018	Sta. Fe, Imugan, Nueva Vizcaya	Mr. Romel Arrobang and Ms. Abby Bermejo	To coordinate and conduct research in the field (field assistant)	1
9	December 10, 2018	Balian, Pangil, Laguna	Mr. Eleazar Luma & Ms. Abby Grace Bermejo	To interview community leader (female)	1
10	December 11-14, 2018	Maasin City, Southern Leyte	Mr. Romel Arrobang and Ms. Abby Bermejo	To conduct KIIs and FGDs in the area	4
11	December 15-18, 2018	Sta. Fe, Imugan, Nueva Vizcaya	Mr. Romel Arrobang and Ms. Abby Bermejo	To conduct KIIs and FGDs in the area	4
	TOTAL				30

Annex B. List of Common and Scientific Names used in the document

Common Name	Family	Scientific Name
Abaca	Musaceae	*Musa textilis*
Agoho	Casuarinaceae	*Casuarina equisetifolia*
Alnos	Betulaceae	*Alnus japonica*
Anislag	Euphorbiaceae	*Securinega flexuosa*
Antipolo	Moraceae	*Artocarpus blancoi*
Api-api	Avicenniaceae	*Avicennia obovata (Griff.)*
Apitong	Dipterocarpaceae	*Dipterocarpus grandifloras (Blanco)*
Bagalunga	Meliaceae	*Melia dubia (Cav.)*
Bakauang babae	Rhizophoraceae	*Rhizophora mucronate (Lam.)*
Bakauang lalaki	Rhizophoraceae	*Rhizophora apiculate (Blume)*
Banana	Musaceae	*Musa acuminate, Musa balbisiana*
Bignai	Euphorbiaceae	*Antidesma bunius*
Cacao	Malvaceae	*Theobroma cacao*
Camote	Convolvulaceae	*Ipomoea batatas*
Citronella	Poaceae	*Cymbopogon nardus*
Coconut	Arecaceae	*Cocos nucifera*
Coffee	Rubiaceae	*Coffea liberica, Coffea robusta*
Cogon	Poaceae	*Imperata cylindrica*
Dagwey	Actinidiaceae	*Saurauia subglabra (Merr.)*
Diluario	Acanthaceae	*Acanthus ilicifolius*
Eggplants	Solanaceae	*Solanum melongena*
Gabi (taro)	Araceae	*Colocasia esculenta*
Guava	Myrtaceae	*Psidium guajava*
Guyabano	Annonaceae	*Annona muricata*
Kalantas	Meliaceae	*Toona calantas*
Kamagong	Ebenaceae	*Diospyros blancoi*
Kangkong	Convulvulaceae	*Ipomoea aquatica*
Lanzones	Meliaceae	*Lansium parasiticum*
Red lauan	Dipterocarpaceae	*Shorea negrosensis*
White lauan	Dipterocarpaceae	*Shorea contorta*
Mahogany	Meliaceae	*Swietenia macrophylla*
Mango	Anacardiaceae	*Mangifera indica*
Manguim	Fabaceae	*Acacia mangium*
Molave	Verbenaceae	*Vitex parviflora*
Mustasa	Cruciferae	*Brassica juncea*
Narra	Fabaceae	*Pterocarpus indicus*
Onion	Amaryllidaceae	*Allium cepa*
Pagatpat	Lythraceae	*Sonneratia alba* (L.) Smith
Pechay	Brassicaceae	*Brassica rapa var. parachinensis*
Pisik-pisik	Asteraceae	*Artemisia orbicularis (Lour.) Roxb.*
Rambutan	Sapindaceae	*Nephelium lappaceum*
Rice	Poaceae	*Oryza sativa*
Sagimsiman	Myrtaceae	Syzygium brevistylum
Sayote	Cucurbitaceae	*Sechium edule*
Sili	Solanaceae	*Capsicum annuum*
Sitaw	Fabaceae	*Vigna unguiculata ssp. sesquipedalis* (L.)
Squash	Cucurbitaceae	*Cucurbita sp.*
Uyok	Annonaceae	*Saurauia elegans*