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# Development Pathways in the Philippine Uplands: Impacts and Influences on Forest Resource Management and Human Well-Being

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## ABSTRACT

*The poor performance of various people-oriented forestry projects has prompted the government to adopt the Community-based Forest Management (CBFM) program as the development pathway for addressing upland poverty and deforestation. The Program is based on the premise that if local communities were given access to, control of, and benefits from forest resources, they will be transformed into responsible stewards and partners in the promotion of sustainable forest management.*

*This paper documents and evaluates the impacts and influences of the CBFM strategy on upland development pathways, forest resource management, and the well-being of upland communities. Findings were derived from household and key informant interviews of 20 People's Organizations that were awarded CBFM projects in various areas.*

*The well-being of CBFM participants improved, as evidenced by the marked increase in income over the benchmark income before they were awarded a CBFM project; acquisition of several household and farm assets, which were before uncommon to forest-dependent communities; and generation of employment in the community. The CBFM program has achieved an increase in forest cover compared with past reforestation projects. Policy implications on development pathways in the uplands were also drawn.*

## INTRODUCTION

The Philippines covers a total land area of 30 million hectares (ha). A significant portion (49%) of the country's land area is generally above 18 percent in slope, thus classified as forestlands. About 14.14 million ha or 47 percent of the total area is classified as alienable and disposable. The remaining 1.09 million ha (4%) of the total land area has remained unclassified (Philippine Forestry Statistics 2007). Under Philippine Law, forestlands are part of the public domain. At present, the Philippine uplands are occupied and cultivated by roughly 24 million people—one-third of the country's population—with their lives and general well-being intimately linked with the forest and its resources. On these lands, a large percentage of the population suffers from extreme poverty (World Bank 2002). Thus, the greatest challenge is how to address the interlinked problem of the increasing rate of deforestation and poverty among the forest-dependent communities.

The government has pursued several development pathways to address such problems in the uplands. A development pathway represents a common pattern of change in resource management, associated with a common set of causal and conditioning factors (Morris and Adelman 1988; Pender 2004). The current trend towards a community-based, collaborative and participatory form of forest management gradually evolved alongside the development of forest policies. There is now awareness that forging partnerships between communities and relevant stakeholders is necessary for sustainable development. The recognition of the link among forest, sustainability, and poverty has likewise propelled the development of the Community-based Forest Management (CBFM) strategy and its supporting policies.

This paper documented and evaluated the more important findings regarding the impacts and influences of upland development

programs and projects on forest resource management and the human well-being of the upland communities, following the concept of development pathways. Specifically, the objectives of this paper were: (1) to discuss the development pathways pursued by the government to address the twin problems of forest degradation and poverty, (2) to evaluate how government policies shaped these development pathways, and (3) to determine the impacts and influences of CBFM projects as the development pathways for sustainable forest resource management and improvement of the human well-being of forest-dependent communities.

## METHODOLOGY

The study was conducted from March 2006 to May 2007 in eight selected regions of the country, which included Regions 2 (Cagayan Valley), 3 (Central Luzon), 4-B (MIMAROPA), 7 (Central Visayas), 9 (Zamboanga Peninsula), 10 (Northern Mindanao), 11 (Davao Region), and 13 (Caraga). One to five sample CBFM sites were selected from each of these regions and a total of 20 CBFM sites were selected. The study sites were selected based on pre-defined criteria set by the researchers, which included the following: the study sites (1) had the most number of CBFM Agreements (CBFMA) issued; (2) had organized and active People's Organizations (POs); (3) had utilizable timber and non-timber forest products, and with harvesting and utilization permits issued; (4) had started with local or foreign funding support; (5) had available baseline information about the project; and (6) have favorable peace and order situations. The final selection of study sites was done in collaboration with the Central, Provincial, and Community Environment and Natural Resources Offices of the Department of Environment and Natural Resources (DENR).

Primary data were gathered through key informant interviews and focus group discussions. The target respondents were the current project staff and other personnel coming from the local government units (LGUs) and the DENR who are assisting the POs. Whenever possible, the study also included former project personnel and other individuals who had been part of the CBFM project being studied. Historical and other secondary data such as comprehensive site development (CSD) reports and project completion reports were gathered from the POs, the DENR Central Office, and the different DENR Community and Provincial Environment and Natural Resources Offices. An in-depth household study was also done, for which four of the total 20 CBFM study sites were selected. The project analysis provided valuable information on the impacts and influences of the CBFM at the micro level: the household.

The following POs were selected for the in-depth household study:

- Villa Imelda Batong Labang, Nanaguan, Rang-ayan Multi-Purpose Cooperative, Inc. (VIBANARA) in Rang-ayan, Ilagan, Isabela
- Eastern Sta. Cruz Community Management Center, Inc. (ESCMCI) in Brgy. Guisguis, Sta. Cruz, Zambales
- San Rafael, Tabanag and Concepcion Multi-Purpose Cooperative (STORPC) in Brgy. San Rafael, Puerto Princesa
- Mapaga, Sta. Maria, and Aurora Forestland Occupants Multi-Purpose Cooperative, Inc. (MASAUFLOMPC) in Brgy. Mapaga, Sta. Maria, Aurora, Prosperidad, Agusan del Sur

Using the Millennium Assessment (MA) framework to gauge the improvement in the quality of life brought about by the implementation of the CBFM project, the study documented and evaluated the impacts and

influences of the CBFM project on the human well-being of forest-dependent communities.

### **Review and Analysis of CBFM Accomplishments on the Ground**

This paper thoroughly examined the impacts and influences of CBFM as a strategy for effective forest resource management, by synthesizing the results of several published reports on national multi-sectoral assessments of the CBFM done in collaboration with the DENR, reports of research projects, scientific papers, student theses, and many other published literature found in print and online. Based on the review and analysis of these published reports and literature, the impacts of CBFM on forest resource management was evaluated in terms of the increase in forest cover through tree planting, natural regeneration, and protection from natural and anthropogenic factors.

### **Household Welfare Analysis Using the Human Well-being Dimension of the Millennium Ecosystem Assessment (MA)**

The MA was a four-year, international effort to document the contribution of ecosystems to human well-being, assay the current state of ecosystem health, and offer a prognosis for how the capacity of ecosystems to support human needs may change under different management scenarios. It intended to provide decision-makers scientifically credible information to help them manage ecosystems more sustainably while meeting human development goals (MA 2005).

The conceptual framework for the MA posits that people are integral parts of ecosystems and that a dynamic interaction exists between them and other parts of ecosystems, with the changing human condition driving, both directly and indirectly, the changes in ecosystems, thereby causing the changes in

human well-being. The MA sought to add value to existing information by collating, evaluating, summarizing, interpreting, and communicating these in a useful form.

Human well-being is assumed to have multiple components, including (1) basic material for a good life, such as secure and adequate livelihoods, enough food at all times, shelter, clothing, and access to goods; (2) health, including feeling well and having a healthy physical environment, such as clean air and access to clean water; (3) good social relations, including social cohesion, mutual respect, and the ability to help others and provide for children; (4) security, including secure access to natural and other resources, personal safety, and security from natural and human-made disasters; and (5) freedom of choice and action, including the opportunity to achieve what an individual values doing and being. Freedom of choice and action is influenced by other constituents' well-being and is also a precondition for achieving other components of well-being, particularly with respect to equity and fairness.

#### PATHWAYS OF DEVELOPMENT IN THE PHILIPPINE UPLANDS

The inability of the government to halt the continuing forest degradation has contributed to the major shift in the direction of forest management towards the people-oriented approach. The evolution to socially oriented strategies of forest management has been regarded as a new forestry paradigm. Termed as "community forestry" by the Food and Agriculture Organization (FAO) of the United Nations, it was described as any situation which intimately involves local people in forestry activities (FAO 1978). As implemented by forestry agencies in many developing countries, community forestry has been shaped in international development fashion and by specific political and historical contexts in these

areas. It has incorporated many of the ideas from mainstream development thinking such as sustainable development, social justice, and equity, among others (Pulhin 2000).

The government has adopted CBFM as the national strategy for addressing upland poverty and forestland management. The strategy is carried out by providing (1) security of long-term tenure to forest communities; (2) government assistance to forest plantations, livelihood activities, and infrastructure and other support services; and (3) involvement of the government and non-government organizations (NGOs) in strengthening and empowering communities to implement such projects. The concept of CBFM departs radically from the traditional notion, which considers forest occupants as the culprits of forest degradation. CBFM directly involves upland communities in developing, rehabilitating, and protecting the forests. The noble mission of the CBFM program is to uplift the living conditions of forest-dependent communities. "Putting people first so that sustainable forestry will follow" has become the guiding slogan of the CBFM program. Adopting the study made by Rebugio and Javier in 1995, the historical development of CBFM as a policy and strategy may be viewed using three loosely defined stages: (1) pioneering period from 1971 to 1980, (2) integration and consolidation from 1981 to 1989, and (3) institutionalization and expansion from 1990 to present.

The pioneering period from 1971 to 1980 saw the adoption of three major people-oriented forestry programs, namely, the Forest Occupancy Management (FOM), Family Approach to Reforestation (FAR), and the Communal Tree Farming (CTF). In general, these programs centered on the involvement of the local people in the reforestation activities. People were seen more as labor providers than partners in forest conservation and development. It was also during this period that the forestry sector started to realize that the

problem of deforestation is not only technical but also socio-political in nature.

The second period was the integration and consolidation from 1981 to 1989. This period marked the adoption of two main people-oriented forestry programs: the Integrated Social Forestry Program (ISFP) and the Community Forestry Program (CFP). The ISFP consolidated the FOM, CTF, and FAR to promote a more holistic approach in the development of open and occupied areas within forestlands. It was an attempt by the government to democratize the use of forestlands and promote more equitable access to forest resources. Organized members of the community were issued a renewable 25-year Certificate of Community Forest Stewardship (CCFS); individual participants were given a Certificate of Stewardship (CS), also with a tenure of 25 years. On the other hand, CFP extended the coverage of community forestry to natural forests, allowing participating upland communities to commercially utilize forest resources subject to appropriate social and technical preparation. In this period, upland communities were recognized as the *de facto* resource managers. Thus, they were increasingly tapped as partners in forest resource management and development.

The third period from 1990 to the present is the expansion and institutionalization period. Degraded watershed areas and all types of forests where there are indigenous cultural communities were included in the community forestry programs. Foreign funding support from various donors started coming in. Various forms of institutional arrangements continue to evolve in the present period. From a purely government-implemented project in the 1970s, development pathways in the uplands have taken the route of increasingly tapping upland communities in forest management. POs were formed with assistance from NGOs, LGUs, the academe, and other research organizations (Pulhin 2000; Pulhin et al. 2007).

All efforts are now geared towards the integration and unification of all people-oriented forestry programs into one umbrella program -- the CBFM. Through Executive Order (EO) No. 263 issued in July 1995, the DENR adopted CBFM as its banner program to achieve social justice and sustainable forestry. Operational guidelines were promulgated with the issuance of DENR Administrative Order (DAO) No. 1996-29 (Rules and Regulations for the Implementation of EO 263) and further enhanced with the issuance of the Revised Rules and Regulations for the Implementation of CBFM under DAO No. 2004-24. The institutionalization of CBFM is seen as the main government strategy towards the restructuring of the once corporate-controlled timber industry. Timber License Agreements (TLAs) used to control one-third of the country's total land area from 1971 to 1977. With the adoption of CBFM as the strategy to achieve sustainable forestry and social justice in the uplands, TLA areas gradually declined to the present 1.4 million ha through the cancellation of erring licensees and non-renewal of the expired ones (Lasco and Pulhin 2006).

CBFM is implemented by a duly organized group, known as the PO, whose members are either (1) actual tillers of portions of the area to be awarded, (2) traditionally utilizing the resource for all or a substantial portion of their livelihood, or (3) actually residing within or adjacent to the areas to be awarded. The POs are issued a land tenure instrument—the CBFMA—that entitles them to occupy, develop, protect, manage, and utilize the forestlands and resources in a designated CBFMA area and claim ownership of introduced improvements. The implementation of CBFM assures the generation of additional income opportunities for upland communities.

Figure 1 shows the components of a CBFM project and its chain of activities. As can be gleaned from the figure, forests and forestland

management activities implemented in a CBFM site include enrichment planting, timber stand improvement, assisted natural regeneration, reforestation, agroforestry, and rattan or bamboo plantation development as may be indicated in the development plan prepared during the site appraisal by the DENR. During this phase—the comprehensive site development (CSD)—income was generated by participating in different activities, such as nursery establishment and development, plantation establishment and development, harvesting and processing of forest trees, transporting and marketing of cut trees and other CBFM products, protection of the CBFM sites from timber poachers, illegal occupants and forest fires, and maintenance of the planted forest trees and agricultural crops. PO officers and members also receive some form of remuneration as part of project management. Employment in these various activities either as team leaders, contract laborers, or hired laborers generated income for the members. To a certain extent, some non-members living adjacent or within the project site were also hired. POs were also given entrepreneurship training so that they could start a livelihood project that would augment their sources of income and employment while waiting for the planted trees and non-timber forest products to mature.

The enhanced economic activities along the CBFM activity chain were indeed very promising. Thus, CBFM was envisioned as a strategy to alleviate poverty in the uplands, as well as restoring the degraded forestlands.

#### CBFM IMPACTS AND INFLUENCES ON FOREST RESOURCE MANAGEMENT

An empirical analysis of eight CBFM sites using a set of operational and measurable criteria and indicators for sustainable forest management showed that there are laudable physical accomplishments in the CBFM sites (Peralta et al. 2002; Espiritu et al. 2006). In

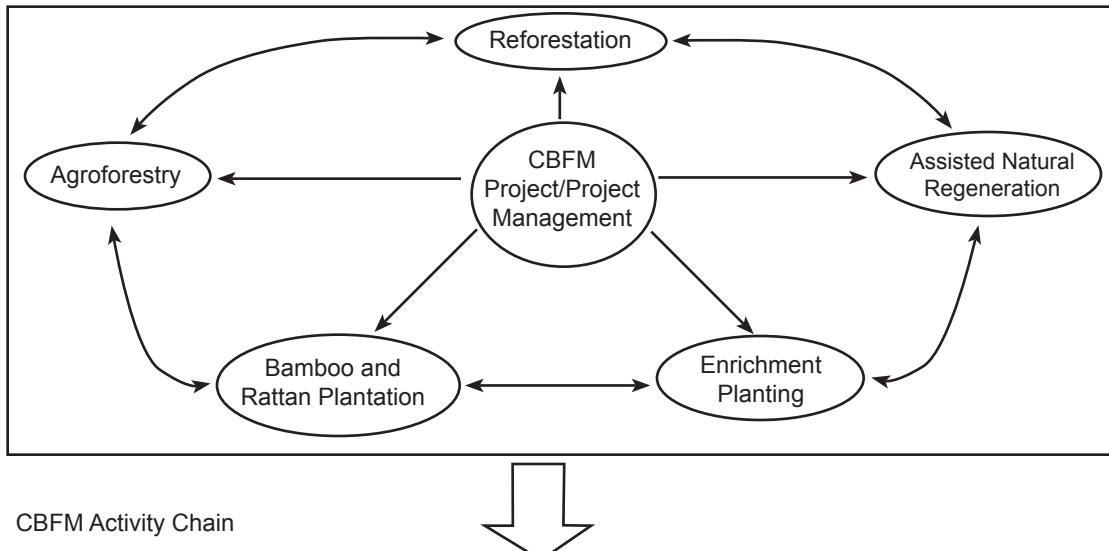
spite of the harsh and unfavorable biophysical characteristics, they were able to muster modest accomplishments. At the time of the survey, the POs adopted soil and water conservation measures, water and soil fertility have improved, open and degraded lands in the CBFM areas have been reduced, protection of areas have intensified, and biodiversity has increased. Reports showed that survival rates of planted trees ranged from a low of 25 percent to as high as 85 percent. Low survival rates were attributed to forest fires, pests and diseases, stray animals, and poor maintenance of planting sites.

It was also reported in a study by Lasco and Pulhin (2006) that the environmental effects of CBFM and its technologies are largely positive. CBFM has led to the conservation of natural forests and the associated biodiversity. The planting of trees in farms and landscapes has led to soil and water conservation, carbon sequestration, and biomass production. Similarly, the development of forest production areas within forestlands was successful in 70 percent of the 155 sites assessed by the Eco-Governance project (Castillo et al. 2007). Miyakawa et al. (2005; 2006) concluded that CBFM is very effective in controlling forest fires, illegal logging, and other violations, such as shifting cultivation committed within CBFM areas, based on their field review of 70 CBFM sites. They also noted that 90 percent of the POs in the 47 sites visited conduct foot patrol on voluntary basis without any form of compensation, since the POs are living inside or within the forested areas.

Hence, assessment of the impacts and influences of CBFM on forest management indicates that it has achieved significant accomplishments.

**Figure 1. Components of an ideal CBFM project, the chain of employment and specific activities along the activity chain**

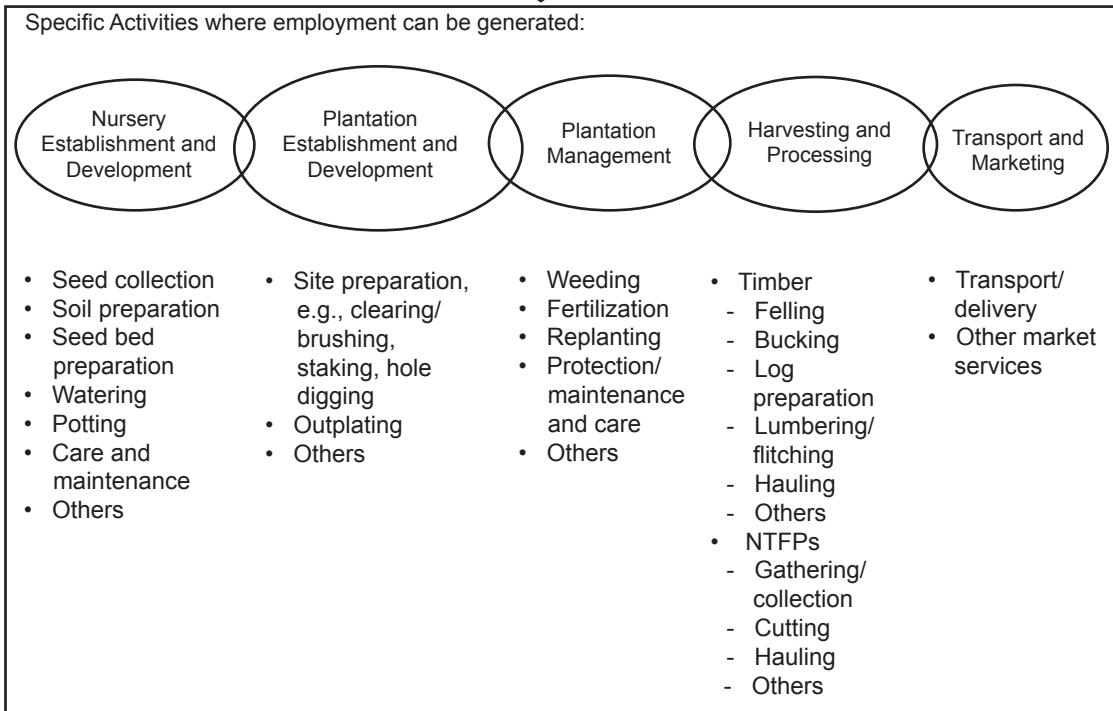
CBFM Component Activities



CBFM Activity Chain



Specific Activities where employment can be generated:



## HOUSEHOLD WELFARE ANALYSIS

A socio-demographic analysis of the respondents and their households was conducted. It is only by looking at the demographic characteristics of the farmer and his household that a judicious evaluation of how he fares in achieving a decent life can be made.

### Basic Material for a Good Life

The educational attainment of the respondent and his household had a great bearing on the household's ability to acquire basic materials for a good life, which is related to having a stable job and a good source of income. Respondents and their spouses attended 1 to 14 years of formal schooling. Educational attainment was generally low, with an average of 9 years of schooling for the respondents and 6 for their spouses. However, it is interesting to note that some 25 percent of the respondents and their spouses were undergraduates and/or held a college degree. Their children, on the average, finished high school (Table 1).

The study also looked closely into the income derived from the CBFM activities. Having a stable source of income is a basic requirement for a good life. Household incomes of the interviewed households came from various sources, including farm-related activities. Non-farm income or income derived from activities not related to farming were business, employment in the government or private sector, off-farm income or income derived from work undertaken in another's farm, and income from other sources such as support from children and remittances of a household member working overseas, among others.

Table 2 shows the distribution of income derived from the different CBFM activities. The major employment activities were nursery establishment and outplanting or plantation establishment, as reported by 52 percent and 45 percent of the respondents, respectively. The average CBFM income received by the households represented some 28 percent of the aggregate income. The largest percentage of the aggregate income came from project management. These were in the form of salaries

**Table 1. Educational attainment (years of schooling) of the respondents and their families, four CBFM sites, 2007**

Variable	Number	Percent
<b>Respondent</b>		
Primary (1-4)	7	11
Intermediate (5-6)	18	27
Secondary (7-10)	25	37
College/Vocational (11-14)	17	25
<b>Range</b>	1-14	
<b>Mean</b>	9	
<b>Spouse</b>		
Primary (1-4)	4	7
Intermediate (5-6)	21	38
Secondary (7-10)	17	30
College/Vocational (11-14)	14	25
<b>Range</b>	1-14	
<b>Mean</b>	6	
Average years of schooling of children	10	

and honoraria received by PO officers and team leaders as part of the project management activity. Household income derived from the CBFM project was on the average PHP 50,379 for the duration of the CSD phase, which normally commenced within 2 to 3 years from project inception.

The income analysis of the data revealed that 60 percent of the aggregate income was received by those in the highest income range of PHP 180,000 and above (Table 3). The average income for this bracket was PHP 348,979. About 27 percent of the interviewed households reported that the income they derived from the CBFM project fell within PHP 20,000 to PHP 59,999. Average income derived for this income bracket range was PHP 37,975. This shows that the officers and team leaders of the POs received the biggest share of the benefits. This suggests inequitable access and enjoyment of resources, opportunities, and eventually material benefits generated by the CBFM project. In this regard, the majority of the POs have fallen short of their responsibility to develop and implement equitable benefit-sharing arrangements among members.

The upland families' level of living can be appreciated further by looking into the material well-being or the material things they have acquired (Table 4). Television set, radio, and cellular phone were the most commonly owned household items reported by more than half of the respondents. It was also observed that respondents owned household items that were relatively expensive and used to be uncommon for upland households. Interviewed upland households were found to own a narra or gmelina sala set (52%), dining set (51%), gas stove (40%), VHS/VCD/DVD player (40%), refrigerator (36%), stereo set (33%), motorcycle (25%), karaoke (9%), and jeep/car/pick-up (7%).

## Health

As an element of human well-being, health includes feeling well and having a healthy physical environment, such as clean air and access to clean water. Focus group discussions with the POs showed that they have adopted soil and water conservation measures. They also agreed that water supply and soil fertility

**Table 2. Distribution of income derived from the CBFM project by activity, four CBFM sites, 2007**

CBFM Activities as Source of Income	Number Reporting	Percent of Households	Average Income Derived (P)	Percent of Aggregate CBFM Income
Nursery establishment and development	35	52	12,409	13
Plantation establishment and development	30	45	17,061	15
Harvesting and processing	9	13	12,514	3
Transporting and marketing	1	1	5,000	
Protection and maintenance	5	7	17,596	3
Project management	24	36	83,731	60
Income-generating project	8	12	11,928	3
Others	5	7	23,740	4
Average household income derived from the CBFM project			50,379	

Note: Average peso-dollar exchange rate in 2007: 1 USD = 47.16 PHP

**Table 3. Distribution of income derived from the CBFM project by income level, four CBFM sites, 2007**

Income Level (P)	Number Reporting	Percent of Households	Average Household Income (P)	Percent of Aggregate CBFM Income
<19,999	12	18	7,388	1
20,000-59,999	18	27	37,975	8
60,000-99,999	11	16	80,690	11
100,000-139,999	8	12	120,225	12
140,000-179,999	4	6	162,703	8
180,000 and above	14	21	348,979	60

Note: Average peso-dollar exchange rate in 2007: 1 USD = 47.16 PHP

**Table 4. CBFM participants' ownership of household assets, four CBFM sites, 2007**

Household asset	Number of Households Reporting	Percent of Total
TV set	42	63
Radio	37	59
Cellphone	36	54
Sala set	35	52
Dining set	34	51
Gas stove	27	40
VHS/DVD/CD player	27	40
Refrigerator	24	36
Stereo set	22	33
Motorcycle	17	25
Bicycle	17	25
Karaoke	6	9
Sewing machine	5	7
Jeep/Car/Pick-up	5	7
Tricycle	2	3
Narra cabinet	1	1
Electric fan	1	1
Computer	1	1

had improved with the implementation of the CBFM project. Upland communities also benefitted from other development projects of the government. Majority of the households (70%) are serviced by electric cooperatives. The major source of water supply for domestic uses is the water pump (63%). Other sources of water supply for domestic needs include barangay/public communal faucet and artesian

well (26%) and water distributed by the local water district (9%) (Table 5).

### Good Social Relations

This aspect of human well-being refers to social cohesiveness, mutual respect, and the ability to help others and provide for children. Literature on sustainable

**Table 5. CBFM participants' housing amenities, four CBFM sites, 2007**

Housing Amenities	Number of Households Reporting	Percent of Total
Sources of water supply for domestic use		
Water pump	42	63
Barangay/Communal faucet	17	25
Water distributed by local water district	6	9
Spring	2	3
Public artesian well	1	1
Lighting source		
Electric cooperative	47	70
Kerosene lamp	20	30

development emphasized the need for people's participation and empowerment. At the height of the implementation of the CBFM program in 2000-2002, most POs nationwide had sizeable active membership. With the growth of PO membership, many intra-organizational problems also emerged.

A research conducted by Peralta and co-workers in 2002 and 2003 covering eight CBFM sites revealed that the POs consisted of a good number of active members. However, the quality of active members' participation was poor, since it was limited to attendance in meetings and seminars. Only the officers of the POs were actively pushing for good performance. The interest and willingness to actively participate in the activities of the organization diminished when they could not collect their wages and when funds for PO operations were depleted. Promotion of equal access to and benefits from forest resources had also become a problem in some study sites (Bacalla 2006). The residents of barangays that were not included as members of POs complained that they were deprived of opportunities to utilize forest resources. There were also other members of the community who continued to carry a "wait-and-see" attitude. Unless they saw that there were substantial obtainable benefits, they remained hesitant to participate in the community project.

As of 2004, all foreign funding support for CBFM programs had terminated. Hence, the POs had been left on their own. Thus, it was important for the POs to have viable income generating projects (IGP) as alternative sources of income for members and to fund organizational activities. However, at the time of the study, none of the POs included in the study could show any viable IGP. Their morale was generally low because they could not harvest the trees they had planted as a result of the suspension of their harvesting and utilization permits by the DENR. Many of the POs that had acquired valuable capital and physical assets at the height of CBFM program implementation have found themselves slowly losing their investments.

Good social relations is a very dynamic concept. POs may have established good social relations among their members at one point, but this could readily change should certain factors threaten their interest. Much is to be desired in socially transforming the POs to become effective managers. They were more focused on the benefits to be gained from harvesting mature forest trees than on the long-term benefits and goals of the program. Majority of the PO members and non-PO members viewed the CBFM project as a mere source of alternative income. The interest and enthusiasm of the

members waned with the depletion of funds, and most especially when their harvesting and utilization permits were cancelled.

## Security

Secure access to natural and other resources, personal safety, and security from natural and human-made disasters are some of the parameters of security defined under the MA framework. The DENR had issued CBFMAs to the 20 CBFM areas included in the study. Hence, the POs have security of tenure over the CBFM area. The Agreement is more than a tenurial instrument as it binds the upland community and the government in ensuring that the sustainability of the resources in the CBFM areas is attained. The CBFMA contains the formal assurance of government to the upland community over the latter's usufruct rights and to a certain extent, custodial rights, over the project area and the resources found therein. On the other hand, this instrument serves as the basis of accountability on the part of the upland community with respect to its obligation to develop, protect, and sustainably manage the project site and its responsibility to members on matters of benefits, participation, and equitable access over the resources. Therefore, the CBFMA is a form of security gained by the POs over the CBFM areas awarded to them.

The feeling of security can also be gained by having secure employment. Majority of the interviewed households were engaged in farming that was either lowland- or upland-based cropping systems. Most female respondents were not engaged in any income-generating activity. Other household members were also engaged in various occupations to supplement the household income. Majority of the respondents reported that their main income sources were farming in the lowland and their wages as government or private employees.

The respondents were found to own

several equipment and machinery important for the cultivation of crops and forest trees and in transporting farm produce. Some CBFM participants were found to own farm equipment, such as small trucks (40%), hand tractor (30%), circular saw (20%), and motorized banca (20%) (Table 6).

Farm animals such as carabao, cow, and horse are also essential for upland households. These animals are used to transport cut trees from the stumping site to the nearest roadside and for bringing harvested farm products to the market or nearest roadside. Of the households, 37 percent owned a carabao, 21 percent owned cows, and 3 percent owned horses. Pigs, chicken, duck, goat, and turkey were also raised for supplementary income and for food.

Almost all of the interviewed households (97%) owned their houses. Majority (58%) had semi-concrete houses made of wooden or cemented walls, roofs made of galvanized iron sheets, or cogon and cemented floorings. Ownership of a farm lot was also common among the CBFM participants. Sixty-nine percent reported that they owned a private farm lot, while 4 percent of the respondents claimed ownership of *kaingin* (swidden) areas. The size of the farm lots ranged from less than 1 ha to more than 4 ha. The more common size reported by 40 percent of the interviewed households was one to two ha. Twenty-five percent of them reported owning more than 4 ha (Tables 7 and 8).

## Freedom of Choice and Action

As an element of human well-being, freedom of choice and action includes the opportunity to achieve what an individual values doing and being. It is influenced notably by education and by other elements of well-being. Freedom of choice and action is also a precondition for achieving other components of well-being, particularly with respect to equity and fairness.

**Table 6. CBFM participants' ownership of farm equipment and machinery and farm animals, four CBFM sites, 2007**

Item	Number Reporting	Percent
Farm equipment and machinery		
Small truck	4	40
Hand tractor	3	30
Circular saw	2	20
Motorized banca	2	20
10-wheeler truck	1	10
Harvester	1	10
Thresher	1	10
Power sprayer	1	10
Farm animals		
Chicken	48	72
Carabao	25	37
Pig	16	24
Cow	14	21
Horse	2	3
Duck	1	1
Goat	1	1
Turkey	1	1

The respondents were also asked how or where they spent the money they earned from the CBFM project (Table 9). The most common responses were for food and daily subsistence (77%) and the education of children (62%). Other reasons given were house construction/improvement (18%); purchase of clothing, appliances, and other personal effects (18%); medicine/hospitalization (12%); start-up capital for new business (10%); reinvested in other livelihood project for the family (7%); savings (3%), purchase of home lot/farm lot (3%), and payment of debts (3%).

#### IMPACTS AND INFLUENCES ON HUMAN WELL-BEING

Human welfare analysis using the MA framework showed that the CBFM participants had attained a certain degree of freedom from poverty. However, it must be noted that despite the improvement in income observed while the CBFM project was operating, the

people were still living below the poverty threshold. According to the official poverty statistics released by the National Statistical Coordination Board for the year 2007, Filipino families consisting of five members should have been earning a combined monthly income of PHP 6,195 to meet their most basic food and non-food needs. But the present income was an improvement over the benchmark average annual income of PHP 20,000 to PHP 30,000 before they were awarded a CBFM project. They have also acquired several assets which were before uncommon to forest-dependent communities. Their communities were also beneficiaries of other community development projects such as electrification, water service facility, barangay roads and barangay offices.

The improvement in the human well-being dimension can thus be attributed to the CBFM projects and to other spillover impacts of introducing people-oriented upland development projects.

**Table 7. CBFM participants' housing details, four CBFM sites, 2007**

Item	Number Reporting	Percent
Type of house ownership		
Owned	65	97
Rented	1	1
Living with relatives	1	1
Type of house		
Concrete	19	28
Semi-concrete	39	58
Temporary	9	13

**Table 8. CBFM participants' farm lot ownership, four CBFM sites, 2007**

Item	Number Reporting	Percent
Type of ownership		
Owned a private land	46	69
Owned a kaingin area	3	4
Tenant	3	4
None	15	22
Size of farm lots (ha)		
<1.0	7	13
1-2.0	21	40
2.1-3.0	7	13
3.1-4.0	4	8
>4.0	13	25

**Table 9. Responses on how or where project participants spend money earned from the CBFM project, four CBFM sites, 2007**

Response	Number Reporting	Percent
Food and daily subsistence	46	77
Education of children	37	62
House construction/improvement	11	18
Purchase of clothing, appliances and other personal effects	11	18
Medicine/hospitalization	7	12
Purchase of farm supplies, tools and equipment/machinery	7	12
Start-up capital for new business	6	10
Reinvested in other livelihood project for the family	4	7
Savings	2	3
Purchase of home lot/farm lot	2	5
Payment of debts	2	3
No response	7	10

## OVERALL COMMUNITY ASSESSMENT OF THE CONTRIBUTION OF THE CBFM PROJECT

Data gathered were analyzed for qualitative dimensions, such as attitudes, perceptions, and motivations. The communities' commitment to the sustainable management and rehabilitation of the remaining forestlands can be assured if these variables were properly understood.

Recognizing the incentives and privileges enjoyed by the POs as well as their responsibilities, the respondents were asked about the perceived benefits of the CBFM project to himself/herself and to the family (Table 10). Almost all of them (96%) believed that their family became better-off when they became members of the PO. Majority of them (95%) revealed that the greatest benefit they got from joining the PO is employment from which they derived their income. Others articulated that they gained new knowledge and skills, such as planting forest trees (11%); they now had money to meet the school needs

of their children (6%); they made new friends, interacted with other people, and had gone to several places (6%); they were able to buy farm equipment (5%); and they acquired money for house construction and improvement (5%), as well as capital for new business (5%).

The respondents were also asked whether the CBFM project had made a difference in their community. Majority (96%) said that the CBFM project greatly affected their barangay in a positive way, while 4 percent of the respondents perceived that the project did not bring about any effect on the community (Table 11).

For those who had an optimistic perception of the project, 86 percent indicated that the greatest benefit derived by the community was employment, especially during the CSD phase; enhanced economic activity (28%); improvement of level of living for PO members (27%); implementation of community development projects (23%); and provision of livelihood projects for the community (16%). The following were other noteworthy benefits

**Table 10. Perceived benefits of the CBFM project, four CBFM sites, 2007**

Item	Number of Households Reporting	Percent Reporting
Do you think you and your family are better off now since you joined the CBFM Project?		
Yes	64	96
No	3	4
If yes, what benefits did you and your family get as a member of the PO?		
Employment/source of income	61	95
Gained new knowledge and skills like planting forest tree species, seedling production, etc	7	11
Have money to meet school needs of children	4	6
Made new friends, interact with other people and have gone to several places	4	6
Able to buy farm equipment	3	5
Constructed/Improved our house	3	5
Capital for new business	3	5
Establish good camaraderie with people in the barangay	1	2

derived by the community from the project: area became reforested (11%); community members gained technical knowledge on planting forest trees, forest protection, and controlling forest fires (6%); the value of forest was appreciated (3%); and the relationship among community members and barangay officials improved (3%).

Thus, the interview among CBFM households revealed a general perception that the CBFM project had really given their families and their communities tangible benefits.

The respondents were asked to assess the overall impact or contribution of the CBFM project to the improvement of the barangay. Most (85%) of them rated the CBFM project with a passing mark, i.e., highly beneficial (40%) and beneficial (45%). Hence, majority of them felt that the project offered many benefits to their community. Only a small portion of the interviewed households (13%) said that the project had little or no tangible effect on the community (Table 12).

## IMPEDIMENTS TO DEVELOPMENT PATHWAYS

Using the CBFM strategy as a pathway in upland development, policymakers, implementers, donors, and researchers have become increasingly concerned with the extent of CBFM impacts and influences in improving the forests and forest-dependent communities. Statistics released by the DENR showed that a total of 5,503 CBFM projects had been established. These represent an aggregate area of 5.97 million ha involving 690,691 households. Of this area, a total of 1.62 million ha were awarded to organized communities through the issuance of 1,783 CBFMAs. As far as beneficiaries were concerned, there were around 322,000 households covered by CBFMAs.

While it was important to highlight major project results, such as increase in total number of beneficiaries, total area reforested, total CBFMAs issued, among others, these

**Table 11. Perception on whether the CBFM Project made any difference in the community, four CBFM sites, 2007**

Item	Number of Households Reporting	Percent
Did the project make any difference in your community?		
Yes	64	96
No	3	4
Benefits derived by the community from the CBFM Project		
Employment for community members especially during CSD	55	86
Enhanced economic activity	18	28
Improvement of level of living for PO members	17	27
Community development projects were implemented	15	23
Provided livelihood project for the community	10	16
Area became reforested	7	11
Community members gained technical knowledge on planting forest trees, forest protection, and controlling forest fires	5	8
Appreciation of the value of forest	4	6
Improved relationship among community members and barangay officials	2	3

information, unfortunately, were of little help in understanding the dynamics of poverty in the uplands to which CBFM addresses itself. The causality of the development pathways is complex and highly contingent on many socioeconomic conditions. This section presents several impediments towards the achievement of the goals and mission of the CBFM. Clearing these impediments may lead to the sustainability of the achievements so far achieved by the CBFM.

### **Changing CBFM Policies on Tenure and Property Rights**

The DENR had issued many policies, rules, and guidelines to support the implementation of the CBFM program. However, many of these policies were unstable, conflicting, and changeable with the change of the DENR Secretary. This was evidenced by the series of nationwide suspension or cancellation of the resource utilization permits (RUP) from the period 1998-2006. This suspension adversely affected the financial capabilities of the POs as they rely on income from timber harvesting.

### **Lack of Viable Income Generating Project (IGP) to Support PO Activities After the Termination of Foreign Funding Support**

At the time of the study, majority of the POs had no ongoing livelihood projects. A few years back, they reported that they had initiated

IGPs such as backyard livestock-raising, tilapia culture, and handicrafts. However, many of these projects were short-lived because of various financial, technical, marketing, and managerial problems. Hence, many of the members opted to become inactive as no income or benefit was being expected from the organization. Some members even opined that income from livelihood projects were inequitably distributed with the greater benefits being received by PO leaders.

### **Lack of Financial Assistance in Livelihood and/or Development Projects**

In accordance with EO 263, the DENR is mandated to establish a CBFM special account. However, this account was never created. The framers of CBFM policy overlooked the provision under the General Appropriations Act and the State Auditing Code of the Philippines, which require that all revenues collected by the government be deposited with the National Treasury or a National Government Repository. Therefore, although CBFM was adopted as the country's national strategy for sustainable development of forest resources and social justice, no funds were really earmarked for the CBFM program. Only a measly average of 5.12 percent out of the total forestry sector budget was allotted to the CBFM during 2000-2004.

**Table 12. Overall assessment of the contribution of the CBFM project to the improvement of the barangay, four CBFM sites, 2007**

Level of Contribution	Number Reporting	Percent
Highly beneficial	27	40
Beneficial	30	45
Little or No effect	9	13
No comment	1	2
Total	67	100

## **Inadequate Technical Assistance and Institutional Support**

Considering that the POs are grassroots organizations, they still need continuing technical assistance and institutional support following the termination of external funding. The preparation of CRMF, RUP, feasibility studies, and other related documents are too technical for them to comprehend, much less undertake on their own. Some of the POs mentioned that they also needed people from the DENR to explain to them the contents of the CBFMAs as well as the other legal documents. Likewise, they also need continuing institutional support. The DENR and the LGUs, the primary institutions mandated to provide institutional support, lacked sufficient resources to extend such services. A CBFM coordinator at the regional, provincial, and community levels handles 5 to 30 CBFM sites. Also, logistic support is not enough for the CBFM coordinators to visit and provide technical assistance to their CBFM sites.

At the time of the study, many of the PO members were inactive because there were no activities being implemented. With no viable income-generating project and no financial resources to use, largely due to the cancellation of harvesting and utilization permits, many members are losing interest in the project.

## **CONCLUSIONS AND KEY CHALLENGES IN ADDRESSING THE DEVELOPMENT PATHWAYS IN THE UPLANDS**

The analysis of the impacts and influences of the CBFM projects on forest resource management and on the human well-being of the upland communities reveal several important aspects.

The CBFM program, in general, was able to provide additional income and employment opportunities in the community especially

during the CSD phase. Many PO members were employed. Thus, their incomes clearly improved from their benchmark income of PHP 20,000 to PHP 30,000 before they were awarded a CBFM project. However, it should be noted that their incomes are still far below the poverty threshold. They also acquired several assets which were uncommon to forest-dependent communities before. Their communities became beneficiaries of other community development projects, such as electrification, water service facility, barangay roads, and barangay offices.

Social equity and benefit sharing is a major concern in all of the CBFM sites visited. Analysis of the income derived from the CBFM project revealed that the officers and team leaders of the POs received the biggest share of the benefits. There appeared to be inequitable access and enjoyment of resources, opportunities, and eventually material benefits generated by the CBFM project. This could be seen as a failure on the part of the POs to develop and implement an equitable benefit-sharing arrangement among its members. Most of the POs were focused on short-term benefits such as shares in the income derived from timber harvesting. Their enthusiasm and interest waned due to perceived lack of transparency in fund management and in other aspects of PO operations, unsettled internal conflicts, lack of benefit-sharing scheme, the termination of funding support, and the suspension of harvesting and utilization permits.

Comparison of the different CBFM areas showed that although they have diverse cultural settings, different socio-political-institutional and economic backgrounds, and varying biophysical endowments, these CBFM sites shared common characteristics. These included the following: (1) the importance of the site for watershed protection function in their respective areas; (2) the existence of residual forests, plantation forests, and grassland/cogon areas; (3) the large portions of the CSD areas located at

high elevations, making plantation maintenance and protection activities extremely difficult; and (4) the potential areas for ecotourism in the sites, which can be tapped as alternative income opportunities for the host communities if given proper cultural, physical, economic, and ecological attention. These diversities also contributed to the unequal attainment of the positive impacts from one site to another. The analysis shows that positive impacts are more observed in areas where external funding support is present and the CBFM area is managed by a financially-viable PO.

Part of the PO's privileges under the CBFM program are the harvesting rights to timber and non-timber forest products (NTFP). The NTFP, if given proper attention by the POs instead of the latter focusing on timber resources, are potential income sources. The POs can come up with value-added processing activities for various products which could generate employment, such as handicraft making, furniture making, and food processing, to name a few.

The CBFMA, a long-term tenurial instrument entered into by and between the government and the PO, and has a term of 25 years renewable for another 25 years, is a necessary instrument towards a successful CBFM program. However, its mere issuance is not sufficient to guarantee a successful program. A stable policy on forest resources utilization that secures the communities' right to harvest the trees they have planted and protected is of paramount importance that will ultimately facilitate or constrain the CBFM in attaining its objectives. In this regard, a new piece of legislation for CBFM should be enacted. No less than a Republic Act is needed to provide the statutory basis for CBFM and to assure regular budgetary allocation.

The current monitoring and evaluation procedure followed by the DENR placed much emphasis on the biophysical achievements to

the neglect of the social transformation of the POs to become effective forest managers. The POs are more focused on short-term benefits rather than internalizing the long-term goals and mission of the CBFM project. Achievements in the physical aspects of the project could not be sustainable if the host community is not an enlightened organization. It should be part of the capacity building to transform the POs into unified and strong grassroots organizations and capable stewards of forest resources.

As a multi-stakeholder strategy, collaboration with the LGUs should be strengthened. Aside from the LGUs, the DENR should also establish partnerships with other stakeholders on the ground to achieve CBFM objectives. These partnerships should provide creative space upon which each stakeholder can seek harmonious relationship and refine the collaborative rules on CBFM through consensus and consultation processes. Good forest governance should be focused not only at government organizational levels; civil society, forest users, and the private sector should also be recognized as equal partners.

Overall, the study concludes that CBFM is a viable strategy to ensure sustainable forests and forestlands management.

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