

## *Appendix 3*

### *Local Society and capability of POs, NGOs and Supporting Agencies*

## APPENDIX 3

### LOCAL SOCIETY AND CAPABILITY OF POs, NGOs AND SUPPORTING AGENCIES

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## **APPENDIX 3**

### **LOCAL SOCIETY AND CAPABILITY OF POs, NGOs AND SUPPORTING AGENCIES**

#### **CHAPTER 1 INTRODUCTION**

##### **1.1 Participatory Development and Approach**

The State shall respect the role of independent people's organizations to enable the people to pursue and protect, within the democratic framework, their legitimate and collective interests and aspirations through peaceful and lawful means.

Article XIII, Constitution of the Republic of the Philippines

Community participation and mobilization are the process of bringing together all individual who will both directly and indirectly affected in one way or the other by a particular phenomena or undertaking. Community participation is also a social process whereby specific groups with shared interest actively pursue to identify their needs, make decision and establish mechanisms to meet these needs. By doing so, each individual and stakeholder should be able to raise their awareness of, and demand for, a particular development program, and to be the key actors in the delivery of resources.

The best advantage of community participation is that community groups/people shall have senses of belonging and ownership by committing themselves into the process of community activities so that the projects/programs shall strengthen the self-reliance and be carried out in a sustainable way. For the watershed management particularly, local people shall raise their consciousness about the environmental change of their realm though a participatory projects/programs and become wise managers of natural resources at a village level.

##### **1.2 Purpose**

With above conviction, the JICA Study Team emphasizes the participatory approach to the formulation of this Master Plan. The JICA Study Team applied various methods to mobilizing local people at the villages to assist them to explore their conditions, raise awareness and identify their needs. During the master plan formulation phase, the participatory approach has been employed in data/information gathering, socialization of our planning and the social preparation for the implementation of the Plan. Participatory approach shall continue to be emphasized for the action planning and implementation of the Plan during the future phases, including the pilot study phase and full implementation phase. The summary of methodologies, results, findings, analysis and the Master Plan will be discussed in the following sections.

## **CHAPTER 2 SURVEYING**

### **2.1 Workshop (PRA or Participatory Rural Appraisal)**

#### **2.1.1 Purpose**

The purpose of the Workshop was to elaborate the findings of “PO/NGO Inventory” through case studying of sample communities. Thereby the dynamics of Peoples’ Organizations (POs) in the Study Area were planned to research in conjunction with the cultural, political and socioeconomic contexts of rural communities. The results of survey will be used in the formulation of watershed management plan.

#### **2.1.2 Target**

The total of 8 to 10 communities with a PO within the Study Area were to be selected as targets, 5 of which should have POs with CBFMA.

#### **2.1.3 Research Items**

The followings were the research items for the Workshop.

- Decision-making mechanisms and the distribution of authority, responsibilities and resources within the community pertaining to natural resource utilization and maintenance (soil, water resources, forest products, fauna and flora), and their effects over the PO’s policies and operation
- Wealth distribution within the community and its impact on natural resource management and PO activities
- Gender/kinship dynamics within the community, and their impact on PO’s activities
- External interventions on the community and PO, and their influences over the PO’ institutional capability
- Institutional relationships of local groups and organizations in respect to natural resource management
- Conflict within the community and its effect on the PO

#### **2.1.4 Methodology**

##### **(1) Preliminary Survey**

In order to test the basic framework of the Workshop and to identify the survey items, a preliminary survey<sup>1</sup> was conducted at the villages of Dalligan and Lingay, Kiangan, Ifugao. A focus group meeting was held with coordination between LGU, DENR and the village governments. Literature review was also conducted to gain information on the socio-cultural characteristics and features of the area, although existing research and literature on the topic were greatly limited.

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<sup>1</sup> The scenes of preliminary survey were video taped and available at the Study Team.

## (2) Focus Group Discussion (FGD)

The Focus Group Discussion (FGD) method was employed as a survey method. FGD was executed with a discussion guideline, which covers research items identified. The moderators were to choose/use the Participatory Appraisal (PRA or RRA) tools, when appropriate, such as Venn Diagramming, Trend Analysis, Community Resource Mapping, Wealth Ranking, Resource Flow Diagramming, SWOT (strengths, weaknesses, opportunities and threats) Analysis, Access and Control Analysis, Gender Profiling in order to facilitate the discussion and acquire necessary information effectively and efficiently.

### 2.1.5 Procedure

#### (1) Development of Terms of Reference

Based on the preliminary survey described above, the terms of reference for the workshop, which was drafted during the preparation of proposal and Inception Report, was revised to accommodate the suggestions made by the Advisory Committee during the first Advisory Committee Meeting held in Tokyo in March 2001.

#### (2) Selection of Local Contractor

In accordance with the JICA tendering procedure, the Philippine Rural Reconstruction Movement Nueva Vizcaya Branch (PRRM-NVB) was selected out of eight (8) companies and organizations on the shortlist for tender. The duration of contract with PRRM-NVB was 40 days from July 25, 2001 to September 11, 2001.

#### (3) Selection of Target Communities

Five CBFM POs and three non-CBFM POs were randomly selected from the POs targeted during the NGO/PO Inventory, with the consideration on the geographical distribution of sample communities.

#### (4) Elaboration of Research Items and Identification of Research Tools

Initial survey items and methods identified in the Terms of References were elaborated and modified by the local contractor. During the elaboration of research items and methods, members of the contractor and the Study Team worked collectively, shared the ideas and mutually agreed. The research items and methods were reviewed and adjusted during the field activities, and the Study Team supervised the adjustment and provided technical support to the contractor<sup>2</sup>.

#### (5) Coordination with Local Government Units

Since the Local Government Units (LGUs) play a key role for the assistance of target communities, it was essential to coordinate with LGUs for the Workshop. Thus the local

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<sup>2</sup> For the finalized research tools and Checklist, see **Data Book**.

contractor arranged the field activities in cooperation with the Mayors office concerned and various sections at LGUs, including MAO, Provincial Office of National Commission for Indigenous People (NCIP), MSWO, MPDO and ENRO. The local contractor also coordinated with PENROs and CENROs.

#### (6) Training for Members of Contractor

The members of the Workshop Team must have an extensive experience in grassroots development, and the moderators of the FGD should possess good facilitation skill as to create an environment where all participants are able to contribute to the discussion. The moderators should also possess a profound understanding of the research items and tools and be gender sensitive as to be able to encourage socially disadvantaged participants such as women and uneducated villagers to meaningfully participate in the discussion. Thus, all researchers of the Workshop Team underwent a two-day training session with regards to the Workshop<sup>3</sup>.

#### (7) Information Collection (Workshop)

All workshops were to be conducted at each community and last at least two and half-day sessions with more than 20 participants, according to TOR. However, the contractor and JICA Study Team agreed to shorten the Workshop sessions to be one whole day only<sup>4</sup>. The participants consisted of village-level political leaders, traditional/religious leaders, PO leaders, farmers and women. Moderators were asked to make sure that the conclusions during the Workshop should be agreed upon by the majority of participants in order for the outcomes to have validity. The consensus building during the Workshop was strongly emphasized. Officials from LGU and DENR were encouraged to participate. A member of the Workshop Team, the coordinator, was in charge of preparation and arranging the workshop beforehand.

#### (8) Data Compilation and Report Preparation

The detailed result of the FGD from each workshop session are delineated and analyzed in the form of report. For the analysis, an analytical framework was established, and the outline of the report follows the analytical framework. The final report was submitted to the Study Team in accordance with TOR and the contract.

### 2.1.6 Survey Results

During the Workshop, 5 communities with a CBFM PO, 3 communities with a non-CBFM PO were surveyed. The total of 331 participants joined to the Workshop. The participants consisted of 35 PO leaders, 98 PO members, 46 local political leaders (Barangay captains and councils), 23 religious/traditional leaders, 72 non-member farmers and 57 non-member women. 29 to 54 participants (average 41.4 participants) were counted at each workshop session, and a session lasted eight (8) to ten (10) hours.

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<sup>3</sup> See **Data Book** for the results of Training.

<sup>4</sup> A part of Workshop was videotaped and available at the Study Team.

## **2.2 PO/NGO Inventory**

### **2.2.1 Purpose**

The purpose of Inventory of Peoples' Organizations (POs) and Non-Governmental Organizations (NGOs) is to understand the status of existing POs and NGOs in the Study Area and assess their management capabilities. Gathered information and the result of assessment were used for the selection of Pilot Study sites as well as for the formulation of the watershed management plan.

### **2.2.2 Target**

A total of at least 100 POs that are located within the Study Area were targeted for the Inventory. Those 100 POs include 39 POs<sup>5</sup> with a CBFMA. Specific criteria for the selection of non-CBFM POs were developed (**Section 2.2.5 (3)**). Aside from POs, selected NGOs, which are involved in an environment-related activity in the Study Area, were targeted for the Inventory. All environmental research institutions were considered as a part of NGOs although they are state organizations.

### **2.2.3 Items of Inventory**

The inventory covered a range of items in respect to an organization. The major items included: 1) Information on Respondents, 2) General Information on Organization, 3) Operating Procedures, 4) Activities, 5) Relationship with Other Organizations /Agencies, and 6) General Comments and Other Observations. For each major inventory item, there are various detailed items as indicated in the questionnaire. The Study Team used the same inventory items for POs, NGOs and research institutions, and when needed, some adjustments were made during the execution of inventory.

### **2.2.4 Methodology**

#### **(1) Preliminary Collection of Data and Information**

A list of NGOs and POs within the Study Area was created based on the data gathered from related agencies including PENROs, CENROs, National Irrigation Administration (NIA), Department of Agrarian Reform (DAR), Provincial Cooperative Affairs Office (PCAO), Office of Provincial Agriculture (OPA), Municipal Agriculture Office (MAO), Provincial Irrigation Office (PIO), Provincial Social Welfare and Development Office (PSWDO), and foreign funded governmental offices including RP-German (funded by GTZ and KfW), CASCADE (funded by European Union), and CECAP (funded by European Union)<sup>6</sup>. Information on the POs and NGOs, such as their status and expertise, was gathered through a series of unstructured interviews with the representatives from the organizations above.

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<sup>5</sup> The number of POs with CBFMA within the Study Area was thought to be 39 at the beginning of the Inventory. But it was found out that the number was 38 in total.

<sup>6</sup> See **Data Book** for the list of NGO and POs within the Study Area.



## (2) Public Sector Management Capacity Assessment (PSMCA)

For the Inventory, an organizational management capacity assessment method known as “Public Sector Management Capacity Assessment (PSMCA)” was employed. The method was developed by the United Nations Development Programme (UNDP) with the technical assistance from Harvard Institute for International Development (HIID)<sup>7</sup> PSMCA was originally designed to analytically assess the institutional capacity and competency of public organizations in developing countries, then expanded to both for- and non-profit organizations and groups. The need to create such method arose from various international development agencies and NGOs who had experienced the ineffectiveness of their undertakings due to the disadvantaged aid recipients. They strived to develop the public sectors in such countries through the good governance strategy, i.e., the strengthening of government agencies and their apparatus. For this, the donors must have a framework to assess the existing capability and competence of those public entities so as to be able to efficiently allocate resources to appropriate areas and activities and be able to design proper organizational development programs.

In the concept, the management capacity is defined as “the ability of individuals and organisations or organisational units to perform functions effectively, efficiently and sustainably as an organization.”<sup>8</sup> The dimensions or levels of analysis include human resource development, organizational structure/processes/resources/management styles, network of organizational interactions, institutional environment and action environment. The comprehensive survey is supposed to be conducted at three levels: individual, entity and system. For the individual level, both technical and generic competencies of workers in the organizations are to be included in the survey items. In respect of the entity level, the dimensions of mission and strategy, organizational culture and structure, processes, human/financial/information resources, and infrastructure are to be assessed. The dimensions of system assessment and analysis include the aspects of policy, legal/regulatory, management and accountability, resource, and process.

The Study Team focused on the entity level with a few research items at the system level. The individual level was disregarded due to the time constraints placed on the Inventory. The Study Team used the document review and group interview with structure as the survey methods in consideration of given time frame and resources.

### **2.2.5 Procedure of the Interview**

#### (1) Development of Terms of References

Based on the terms of references made by JICA, the terms of references for the workshop was drafted during the preparation of proposal and Inception Report. This was revised after the collection of fundamental information during the first stage of the Study.

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<sup>7</sup> Mary Hilderbrand and Merilee Grindle, *Building Sustainable Capacity: Challenges for the Public Sector*, HIID Harvard University, November 1994., UNDP, *Capacity Assessment Guidelines, The Programme Approach: Assessment Levels and Methods (Draft)*, UNDP, January 1996., UNDP, *Capacity Assessment and Development: In a Systems and Strategic Management Context*, Technical Advisory Paper No.3, UNDP, January 1998., UNDP, *Public Sector Management Capacity Assessment (PSMCA): The Methodology*, UNDP (extracted from the Internet), 1999.

<sup>8</sup> UNDP, *Capacity Assessment and Development: In a Systems and Strategic Management Context*, Technical Advisory Paper No.3, UNDP, January 1998

## (2) Selection of Contractor

In accordance with the JICA tendering procedure, Phil Koei International Inc. (PKII) was selected out of three companies and organizations on the shortlist for tender. The duration of contract with PKII was two months from June 18, 2001 to August 17, 2001.

## (3) Selection of Target NGOs and POs

The Study Team decided to include all the 39 CBFM POs within the Study Area. For POs without CBFMA, the following criteria were used in the selection:

- a. The activity areas of PO should be within the Study Area
- b. The PO should be formally established and recognized by the government as a form of community group
- c. The PO should be currently active
- d. The office/station of PO should be located within 5 km distance from a sizable non-A&D forestland with over 25 % slope gradient or a sizable critical land area
- e. The PO should be willing to cooperate in the survey
- f. The PO with a record of receiving fund from foreign donors either at present or in the past should have a priority to be selected
- g. The PO involved in environment-related activities should have a priority to be selected
- h. The PO with a gender consideration should have a priority to be selected

In addition to the above criteria, the equal geographical distribution of target communities was given high consideration in the selection. To avoid the selection of POs from a few concentrated categories (e.g., cooperatives or foreign-funded organizations), sample POs were selected from diverse classifications. Using the selection criteria, the target POs were selected from the list of POs created through the preliminary collection of data and information.

For NGOs, the Team selected NGOs on the list created through the preliminary collection of data and information.

## (4) Development of Questionnaire, Evaluation Grid and the Guide for Evaluation

Using the PSMCA concept and method, the Study Team developed the questionnaire for group interview and the evaluation grid for assessment. Thus the questionnaire and evaluation grid are original to the Study Team. The questionnaire and evaluation grid were then revised during the training for researchers. During the training for researchers, the parameters and criteria for evaluation were discussed intensively. Based on the result of the discussion, the guide for evaluation was created and distributed to all researchers. The guide was revised and updated continuously during the Inventory.

#### (5) Training for Researchers

One-day training for researchers was conducted at Saber Inn, Bayombong, Nueva Vizcaya. The objectives of training were: 1) to understand the Inventory method, 2) to be familiar with the instruments and revise them if needed, 3) to share the common standard for evaluation. The training program was initially designed by the Study Team and revised by the local contractor. The training began with the introduction of the Study, followed by literature review on PSMCA, explanation of instruments, role of voluntary PO leaders, and revision of the instruments. Eleven researchers, team leaders, PO leaders and members of Study Team participated the training.

#### (6) Coordination with Local Government Units

Since many target POs were initiated and supervised by the Local Government Units (LGUs), it was essential to coordinate with LGUs for the Inventory. Thus the local contractor arranged the inventory activities in cooperation with the Office of Mayors and various sections at LGUs, including MAO, PIO, Municipal Social Welfare Office (MSWO), Municipal Planning and Development Office (MPDO) and ENRO. The local contractor also coordinated with DENR local offices.

#### (7) Structured Interview

A group interview using a questionnaire was conducted for each PO<sup>9</sup>, and several respondents were interviewed simultaneously. The respondents were usually the Chairperson of the Board of Directors (BOD), members of the BOD, manager, treasurer, secretary, bookkeeper, consultants for PO, and PO members. In a few instances, the interview was executed with only one respondent.

Two researchers who are fluent in the local dialect (*Ilocano*) attended an interview, and one of them was in charge of recording. The reason to have two interviewers was to have different perspectives for evaluation. An interview lasted one and a half to 3 hours, depending on the reaction of respondents. In the Province of Ifugao, the translator for their local dialect (*Ifugao*) was utilized though many respondents were able to communicate in *Ilocano*.

Interviews took place at the village of PO location or at a municipal government building. The interviewers were asked to use appropriate communication skills in order to acquire reliable information and honest comment. The Study Team closely supervised the interview, and continuous guidance and suggestions were given to researchers.

#### (8) Data Compilation and Analysis

Soon after the interview, the researchers encoded the result of interview. Also the researchers completed the evaluation grid. The two (2) researchers who attended the interview collectively completed the grid. In practice, the grid was sometimes completed several days after the interview since the researchers were forced to stay in the field for several days without an access to a computer, but the time gap between the interview and

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<sup>9</sup> See **Data Book** for “Instruments of PO/NGO Inventory”.

completion of grid did not affect to the quality of outcomes. The Study Team closely monitored the evaluation process. The evaluation results were adjusted, when necessary, based on the comments of the Study Team.

#### (9) Report Preparation

The final report was prepared in accordance with the Terms of Reference and submitted to the Study Team.

### **2.2.6 Survey Results**

During the Inventory, sixteen (16) NGOs, four (4) research institutions, thirty seven (37) POs with CBFMA, 80 POs without CBFMA were inventoried. Those POs were located at one hundred six (106) villages or thirty four (34) municipalities. The total number of respondents was three hundred sixty five (365).

For CBFM POs, one hundred fifteen (115) respondents were interviewed. They consists of: 20 Chairpersons, 7 Vice Chairpersons, 16 Board of Directors, 8 Presidents, 2 Vice Presidents, 6 Managers, 1 Assistant Manager, 8 Secretaries, 13 Treasurers, 1 Assistant Treasurer, 6 Bookkeepers, 3 Advisors, 2 Store Keepers, 1 Public Information Officer, 1 Chieftain (tribal leader), 1 Vice Chieftain, 1 Staff Member of ITTO, 1 Cashier and 17 PO members.

For non-CBFM POs, two hundred fifty (250) respondents were surveyed. They comprise of 34 Chairpersons, 8 Vice Chairpersons, 1 Founding Chairperson, 30 Board of Directors, 2 Coop Leaders, 11 Presidents, 5 Vice Presidents, 37 Managers, 2 Business Managers, 1 Sectoral Representative, 1 Project Coordinator, 1 Organizer, 1 Liaison Officer, 14 Secretaries, 30 Treasurers, 5 Cashiers, 4 Accounting Clerk, 17 Bookkeepers, 1 Sales Clerk, 1 Loan Officer, 3 Marketing Officers, 3 Auditors, 1 Assistant Union Chief, 1 Collector, 3 Members of Credit Committee, 1 Utility Officer, 1 Member of Election Committee, 1 Advisor, 1 Store Keeper, 1 Supervising Member and 28 PO members.

## **2.3 Training Needs Survey and Analysis**

### **2.3.1 Purpose**

The purpose of the Training Needs Survey and Analysis was to assess the existing performance capability of local offices of DENR and LGU as well as the competence of individual officers. The constraints and strengths of those offices and individual officials are to be identified. Retained information and data are necessary for the formulation of comprehensive capacity building program to be included in the M/P.

### **2.3.2 Target**

All CENROs and PENROs within the Study Area, as well as two regional offices (Region 2 and CAR) were targeted. Approximately 10 % of total DENR personnel at these offices were selected as samples. In addition, all devolved functions of DENR (2 ENROs, a PAENRO and PNREO) at LGU within the Study Area were targeted, and selected personnel at those offices were chosen as samples.

### **2.3.3 Items of Survey**

The major survey items included: 1) Information on Respondents, 2) Competency Gap, 3) Problems of Service Delivery, 4) Training Needs, 6) General Comments.

### **2.3.4 Methodology**

#### **(1) Preliminary Collection of Data and Information**

Before the execution of the survey, related data and information with regards to organizational capacity and personnel competency of local DENR and LGUs were gathered. The research items included: 1) the structure of DENR local offices and LGUs, 2) personnel complements, 3) previous training/orientations/workshop conducted<sup>10</sup>, 4) review of existing performance evaluation of DENR officers, 5) “Terminal Report on Training Needs Assessment for Forestry Positions in DENR-CAR, CY-2001”, 6) results of Training Needs Assessment in DENR Region 02, 2001 and 7) general status of offices and officers.

#### **(2) Training Needs Analysis (TNA)**

The concept and methodology of Training Needs Analysis (TNA)<sup>11</sup> have been developed by managers, trainers and consultants who are involved in the human resource development. As the name implies, Training Needs Analysis has been used for gathering necessary information for the design of training. However, TNA has been evolving to a general competency study<sup>12</sup>, which not only focuses on the training needs but also on the broader aspects of organizational structure, job assignment, trainees’ background, work environment, gap between roles and personal competency, and training conditions. TNA thus focuses on both organizational and individual capabilities of targets in order to understand the wide-ranging organizational context whereby individual proficiency works and grows.

To execute the TNA, there are different survey methods, including questionnaire, interview, group discussion, observation, and document review. Given time, resources for the survey and the appropriateness of the survey method, the Study Team decided to employ it.

### **2.3.5 Procedure**

#### **(1) Development of Questionnaire**

The Study Team developed an original questionnaire<sup>13</sup> based on the methodology of TNA. The questions were thoroughly selected to meet the requirement for the analysis, and the number of questions was kept to a minimal level so that the respondents would be able to easily complete the form and increase the rate of collection of complete questionnaires.

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<sup>10</sup> See **Data Book** for the list of training conducted by DENR in Region 02 and CAR.

<sup>11</sup> Friesen Kaya and Associates, “Training Needs Analysis and Evaluation”, a handout at a workshop, 1997.

<sup>12</sup> The levels of competency are: 1) Strategic, 2) Technical, 3) Personal, and 4) Behavioral (Friesen, 1997).

<sup>13</sup> See **Data Book** for “Questionnaire for Training Needs Analysis”.

After the completion of a draft questionnaire, the Study Team tested the questionnaire with test samples and made a revision. During the survey, the Study Team made minor adjustments on the questionnaire in order to give clearer instruction for filling up the form.

(2) Identification of Samples

Based on the initial data on personnel complements, approximately 10 % of officers at various divisions and sections were identified as targets. According to the number of identified samples at each division or section, the officers in charge selected the individuals who would fill up the questionnaire form. The Study Team asked the officers in charge to select from the variety of age groups within their offices in order to obtain the data from both younger and senior officers. Separate from those samples, all personnel at CBFM units at PENROs, CENROs and ENROs were targeted. The results of survey were analyzed separately.

(3) Distribution and Collection of Questionnaire

Before the distribution of questionnaire, the Study Team coordinated with the Human Resource Development Division of the two regional offices. Then, the questionnaire forms were distributed to target offices with a copy of communication letter, instruction, and a table of target samples. The forms were collected a few days or weeks after the distribution. The Study Team checked the questionnaire at the time of collection whether the forms were completed properly.

(4) Data Compilation, Analysis and Report Preparation

After the collection of questionnaire, the data were compiled as a computer file<sup>14</sup>. The format for data compilation was completed by the Study Team. The compiled data were then analyzed, and the result of analysis was put in the report. During the report preparation, the Study Team consulted with the Human Resource Development Division of the two regional offices.

### 2.3.6 Survey Results

During the survey, 18 offices (2 regional offices, 4 PENROs, 8 CENROs and 4 devolved offices of DENR at LGU) were targeted, and 184 officials have received the questionnaire form. 173 questionnaire forms were collected (94 % collection rate) from 18 offices, and 167 questionnaires were eligible for analysis (6 questionnaires had technical errors). In addition, 8 questionnaires were distributed to and collected from the officials who are in charge of CBFM Program at PENROs, CENROs and ENROs.

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<sup>14</sup> See also **Data Book** for “Result of Training Ned Analysis”.

## CHAPTER 3 FINDINGS

### 3.1 Local Society (Findings and Analysis of PRA Workshop)<sup>15</sup>

In accordance with the research method and procedure previously described in **Section 2.1**, the Study Team conducted a series of “Workshop” sessions that were highlighted by Focus Group Discussion at the village level with local population, both members and non-members of POs. The sessions were held in eight sample communities within the Study Area in order to understand the natural, social, political and cultural conditions of the area at present and in the past. The sample communities were selected from various geographical and ethnic groups within the Study Area so as to represent the local diversity of the area. They are:

- Upper and Lower Bimpal, Lamut, Ifugao (*Ayangan* tribe)
- Bannao, Banaue, Ifugao (*Ayangan* tribe)
- Buyasyas, Santa Fe & Kayapa, Nueva Vizcaya (*Iwak* tribe)
- Yaway, Aritao, Nueva Vizcaya (Migrated *Igorot*<sup>16</sup> and *Ifugao*<sup>17</sup>)
- Belance, Dupax del Sur, Nueva Vizcaya (*Bugkalot*, migrated *Igorot* and *Ifugao* and various tribes migrated from Visaya regions)
- Debibi, Cabarruguis, Quirino (Migrated lowlanders, *Igorot*, *Ifugao* and various tribes migrated from Visaya regions)
- *Sitio* Kadikitan, Landingan, Nagtipunan, Quirino (*Bugkalot* tribe, migrated *Igorot* and *Ibanag* tribes from Cagayan)

The Workshop was designed to deliberately grasp the general socio-cultural context and natural environment of the area at a community level whereby POs evolve and operate. In addition to the findings of PO/NGO Inventory through which the *internal* information of POs themselves were collected, the Workshop was considered to be important to understand the *external* framework of action environment of these POs. The surveyed eight sample communities should represent the general environment of communities within the Study Area. The summary of findings and analysis are discussed in the following sections.

#### 3.1.1 History of Natural Resource Management

##### (1) General Environmental Conditions by Decades

Participants of the Workshop in the eight sample communities within the Study Area assessed the trend of natural resource conditions and management during the span of four decades between the 60s and to date. They described the conditions of forest areas to be lush and thick with vegetation during the 60s in all sample communities. In the 60s, the size of trees in their forest areas usually took two to three people to “embrace”. The heights of trees reached 70 feet, and one fallen tree easily filled three trucks.

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<sup>15</sup> For the complete outputs of Workshop, see **Data Book**.

<sup>16</sup> “Igorot” is the term to refer to an ethnic group composed of a number of tribal groups in Benguet, Mountain Province and Kalinga-Apayao who speak a dialect of Kankanaey language groups.

<sup>17</sup> The term “Ifugao” refer to an ethnic group consisted of a number of tribal groups in the province of Ifugao.

The areas were rich in wildlife such as lizards, wild cats, wild chicken, deer, monkeys, birds and wild pigs. Minor forest products such as orchids, rattan and bamboos were plentiful. Rivers, creeks and springs teemed with various kinds of fish, crabs, and shrimps. Hunted wild animals and fish were traded for cash or bartered in some cases, but mainly for household consumption. The forest and its environment provided the food sources needed for the communities.

In all sample communities, the soil was very fertile during the 60s. Local people could plant two or three times a year on the same slash and burn farming plot before transferring to another plot. Also, the volume of water from springs was abundant, and the number of springs was higher than to date.

During the following three decades, the general picture of environment changed. Participants expressed that the remaining natural forests became scarce and replaced by slash and burn areas, farmland, grassland, residential areas or residual forest. The forest fires usually inflamed by slash and burn actions at pasturelands and shifting cultivation plots became visible. The remaining wildlife to date is limited in number and kinds, and it can be found only in the interior of forest areas. In some communities, people must hike three to four hours to get forest products such as rattan.

With reduced forest cover, the incidence of soil erosion and landslides increased in number and size, and some rivers and creeks became intermittent creeks or dry washes that have water only during the rainy season. Water pollution, mainly from the domestic wastes and fishing using poisons and dynamites is common. Water borne diseases became prevalent in some sample communities. The ecosystem seems to have lost its balance, according to the participants of the Workshop.

However, there is a slight sign of increase in forest areas in some communities recently, according to the workshop results. During the 90s, the residual forest in certain areas slowly expanded due to the reforestation initiatives by the government, NGOs and foreign donors in addition to the state control over slash and burn farming.

## (2) Causes of Environmental Change

Participants of Workshop identified the following factors for the environmental change in their communities:

### 1) Increasing population and migration

In all sample communities, participants pointed out that population increase is one of the major causes for environmental degradation. In many upland communities, there were only handful households residing in the area during the 60s, and some of the communities accommodate thousands of households to date. The increasing population both within and outside of their communities puts pressure on natural resources, i.e., woods and wildlife. Timber consumption for house constructions increased, and firewood demand became high. Food consumption naturally increased as the population increased within and outside their villages, and demand for wildlife became high. The rate of increased demand and consumption exceeds the capability of natural regeneration, which resulted in the reduction in forest areas and wildlife endowment.



The population increased at the sample communities especially during the 70s and 80s, which was derived from both intensive and extensive migration to the communities. The migrants were from other regions represented by loggers from Visaya and Bicol regions and Region IV, other provinces represented by upland dwellers from Ifugao, Benguet, Mountain Province and Kalinga-Apayao, other municipalities represented by upland dwellers from Kayapa and Santa Fe and *Ilocano* speaking lowlands. Road development made migration easier and more pervasive. Some migrants are displaced from their original communities due to mining operations, construction of dams<sup>18</sup> or other public infrastructures.

Some migrants were seeking fertile areas for slash and burn farming or vegetable gardening, and others were in search of logs. A number of migrants in certain communities came with the large logging companies as physical laborers and decided to stay in the area after the logging operations. Some migrants were forced to leave their original villages, mostly uplands due to the shortage of water resources. The migration continued throughout the 80s and 90s, but internal population increase also became significant during this period. Due to population increase, the fallow period of a plot became shorter, land became scarce and agricultural land became less fertile.

## 2) Slash and Burn Farming

According the results of the Workshop, some farmers who practice the slash and burn farming followed the logging activities and turn the logged-over areas into the slash and burn farming areas, whereas others migrated before the logging. Farmers who followed logging operations practiced the slash and burn farming at areas already opened. Farmers who came to the area before the logging operations brought about the slash and burn farming in the forest or in the nearly opened forest. Slash and burn farming has subsided because of the reduction of forest and the enforcement of forestry laws by DENR. However, slash and burn farming in the open land is still prevalent.

There are also people, as *Bugkalot* tribes in the southern Nueva Vizcaya and Quirino or *Ifugao* tribes in Ifugao, who are original to the area and traditionally practicing the slash and burn farming for generations. A part of slash and burn areas became a permanent farmland for corn, upland rice, estate crops and vegetables. Some migrants from Benguet and Mountain Province<sup>19</sup> during the late 80s and 90s introduced vegetable farming in certain communities. In some communities, local people developed terraces on the slopes and plant wetland paddy.

Participants pointed out that the area for the slash and burn has been expanding as the population increases. They recognized that the indiscriminate practice of slash and burn farming results in soil erosion and forest destruction which are major threats to the water supply, as well as the wildlife population. Fire set for the slash and burn farming destroys the variety of flora and fauna, which are valuable economically and socially in the area. Participants realize the declining productivity of land as a result of exceeding slash and

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<sup>18</sup> Due to the Amboklao Dam construction in Benguet, many Igorots were forced to migrate to the Study Area during the 70s.

<sup>19</sup> These provinces, because of their cold climate, are known for the upland vegetable production. Farmers there have been facing the shortage of farmland due to the recent expansion of vegetable gardens in their provinces. Some of the vegetable farmers migrated to the mountainous southern Nueva Vizcaya where the climate is similar to their provinces of origin. The town of Bambang became the center of vegetable trading in the area, and local people call the vegetables “green gold” because they brought the wealth to the area.

burn activities. In some sample communities, the slash and burn activities are controlled to a certain extent, but not controlled in other communities.

### 3) Logging

Large-scale logging started in the area during the 60s and 70s. The logging operations reached their peak during the 70s and slowly phased out by the mid 80s. Logging, according to the participants of the Workshop, brought temporary economic prosperity and employment to the communities but destroyed their natural environment.

After the large-scale commercial logging, some employees of logging companies stayed and settled in the area. Smaller trees left by the large-scale logging continued to be cut by local population using a two-man saw, which was slowly replaced by the chainsaw. Logging roads made it easier for small-scale loggers, both inside and outside their communities to reach the area and ship out the logs by *carabao*. The timber was used for house constructions within the villages or sold to local traders or furniture shops at nearby towns outside the community.

### 4) Road Construction

In addition to the construction of logging roads, the government has been developing access roads to communities in the area, which brought the commercialization of natural resource extraction. The commercialization of natural resources accelerated the destruction of the natural environment at the community level, according to the participants of the workshop.

### 5) Rattan Extraction

With the high demand for rattan between the late 70s and mid 80s, almost every household in the sample communities was engaged in rattan extraction. One particular community remembers that three truckloads of rattan were extracted from the community everyday. With the pace of extraction, rattan became scarce. People had to hike a few kilometers deep into the forest to gather rattan. It was only in the mid 90s that programs on rattan planting were introduced to the communities.

### 6) Modern Hunting Tools and Practices

Modern weapons for hunting such as an air gun and air rifle were introduced to local people and replaced the traditional bows, arrows and traps for hunting. Also for fishing in rivers and creeks, people started to use dynamites and poisons. The modernization of hunting tools and practices greatly reduced the wildlife populations in their respective forests and water bodies.

### 7) Modernization

Due to the improved access to information, market and resources, the thoughts and life patterns of people in the area changed. They tend to consume more and extract the natural resources on a commercial basis. At the same time, most locals are not yet modernized enough to possess a high level of environmental consciousness.

### (3) Natural Resource Management Employed

After identifying the historical trend of natural environment and its changing factors, participants of the Workshop discussed their traditional and updated natural resource management mechanisms and systems.

#### 1) Laissez faire system

According to the survey, the most common natural resource management practiced at the community level, in the past and at present, is the regulation-free use of natural resources if one can call it “management.” Under this system, local people are free to extract from communal land whatever they need, and there is no particular person or entity monitoring the utilization of natural resources. When they strive for the maintenance of natural resources, it is the individual effort to plant trees, rattan and others. There is obviously no restriction, except the psychological hesitation, for outsiders to extract the natural resources.

The modern concept of stronger individualism was introduced in this context, and the idea of “*dappatan* (literary means “private possession” or “possessing” in English)” governs the natural resource management. People are restricted to use and extract natural resources within their private land, and individual farmers and families executed land development and conservation. Land owners plant perennial crops at the borders of their land, such as gmelina, mangoes, citrus, beetle nut trees and bananas to create the landmarks. Soil conservation measures at their farmland such as the employment of fallow period and application of fertilizer, contour ridging method and the Sloping Agricultural Land Technology (SALT) are also an individual basis.

#### 2) *Muyong* system in Ifugao

*Muyong* system is a traditional forest management mechanism employed by Ifugao tribes. Based on the survey at two communities in Ifugao province (Barangay Bimpal and Bannao), *Muyong* is a resource management system whereby clans regulate, by unwritten rules, the utilization and maintenance of individually owned *Muyong* forest that are traditionally considered to belong to the members of clan<sup>20</sup>. A clan is composed of families related either by blood or marriage and has a chief who monitors the enforcement of *Muyong* rules.

Under the *Muyong* system, members of clan are allowed to cut trees within their *Muyong* forest during a particular period of time, which is usually in the summer. Tree seekers must ask permission from the clan chief before cutting, and members of other clans are not allowed to extract any forest products. Clan members must also plant a number of trees after cutting one. There is also a rule for cutting bamboos during a particular period to prevent the attack of insects called *Bokbok* in the local dialect (Powder Post Beetle in English, *Lyctus sp.* or *Dinoderus sp.* in scientific name).

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<sup>20</sup> According to existing literature, there are some communities in Ifugao where the *Muyong* system is governed by a community, not by a clan. See Draft Report on the Study of Traditional Forest Related Knowledge of the Ifugao and Bontoc Ethnic Groups in the Cordillera Region of the Philippines, prepared by Bagong Pagasa Foundation, Japan Overseas Forestry Consultants Association, 2000.

According to the survey results, the *Muyong* system is somewhat dying in certain communities as clans become bigger and family ties become relatively weaker, but still persistent in other villages in Ifugao. When Ifugao tribes migrate to other areas, they do not seem to have brought the system with them. There is no similar traditional system of natural resource management found in the other parts of the Study Area during the Workshop.

### 3) *Bayanihan* system

*Bayanihan* system is a local term for mutual community aid whereby co-villagers are expected to give contributions either in the form of labor or physical/financial resources to help other members of a clan, associations or neighbors in farming and in the construction/maintenance of public and private infrastructures such as irrigation systems, farm to market roads, slope protection facilities and houses. In the 60s, local people used the *bayanihan* system for cutting trees for house construction. The system becomes visible during disasters, including landslides, fire, flooding and typhoon but is slowly diminishing in certain communities as the society modernized. The system is no longer employed for the extraction of trees due mainly to the control of logging and shift of construction materials to sand and gravel for housing. Similar mutual community aid systems are commonly found throughout Southeast Asia.

### 4) Village regulatory system

There is a growing trend among the eight sample communities where the village government establishes a rules and regulations in the form of Barangay ordinances to control and manage natural resources. Barangay councils adopt policies and ordinances that prohibit or limit the resource extraction, particularly lumber from the forest. For instance, if a family in the community will cut trees for their house construction or renovation, the family must submit a written request to the village government stating the volume of timber needed. The village government reviews the request and gives permission of cutting trees when the request is reasonable. Some communities require a permission fee for resource extraction or prohibit the sale of logs outside the community.

A village ordinance or policy in principle ought to be in line with the regulations and policy of DENR, but village governments do not consult with DENR in respect of the ratification of legislation.

### 5) State-initiated management

The DENR initiated the contract system of reforestation projects and introduction of forest/grassland fire control. DENR also introduced various resource management programs such as the Integrated Social Forestry Program (ISFP) and Community-Based Forest Management (CBFMP). Through such projects, local people learn modern techniques of re-greening and natural resource management.

## **3.1.2 Socio-Economic Classes**

During the Workshop, participants were asked to discuss the socio-economic classes within their community and identify the characteristics of each socio-economic class. The purpose of this activity was to understand “who use, consume and maintain the natural

resources in the community,” which provides information necessary to identify stakeholders for watershed management and prospect the impact of watershed management initiatives on each socio-economic class.

(1) Definition

At the beginning of activities, participants defined the socio-economic classes existing within their communities. The Study Team expected a variety of definitions from one sample community to the other, but the definitions are quite similar among the communities. The summary of definitions is described in the following sections.

1) The rich/better-offs

Participants defined the rich as a group of people who resides in a concrete or semi concrete house. They have at least 10 ha of paddy field, vegetables garden, estate crop area or forest. They finished college, and many of them manage their own business. They have limited number of children. They earn more than ₱ 100,000 (approximately US\$ 2,000) per harvest season. Some better-off families possess a private pump well for potable water and irrigation.

They are also political leaders at the municipal level and provide contributions to community activities. They constitute 0 to 5% of households within the communities. Participants from three sample communities (Barangay Yaway, Bimpal and Bannao) agreed that they do not have this socio-economic class in their villages.

2) The average

The average was defined as a group of people who resides in a house made of concrete or semi concrete materials. They have at least 5 ha of paddy field, vegetable garden, estate crop area or forest. Most of them have finished college and earn at least ₱ 10,000 (approximately US\$ 200) per harvest season. Some of them are government officials and politicians at the village level. They have 4-6 children. This class constitutes about 0 to 5 % of total households of communities.

3) The poor

This group of people has a small house with cogon roof and wooden walls. They own less than 1 ha of land for fruit and vegetables. Some of them do not have their own land and rent a farmland. They are small-scale owner-farmers, tenant farmers, farm laborers and/or other daily paid laborers. They reached the secondary school level and with 4-6 children. They are active in community organizations because they get benefits from projects in the form wages and food. Some of them are officials at the village government. The source of drinking water is a hand-pump well, and some fetch water from nearby creeks or springs. This group constitutes approximately 5 to 60 % of the total household population of the community.

4) The very poor

This group has a small house made with cogon and bamboo. They own less than 1 ha of land for sweet potatoes and vegetables or do not have any land at all. Many of them

reached the elementary school and have more than 6 children. They work as farm laborers and other daily paid laborers, and female members of the household work as household help for their better-off relatives or other families. They only generate minimum cash income, and their food supply mainly comes from their own farm production. They are not active in community activities and PO operations because they are busy working to fulfill their daily necessities. They hardly become village government officials. This group constitutes 20 to 95% of total households in communities.

## (2) Use of Forest Products

Participants of the Workshop agreed that higher socio-economic classes control the extraction of natural resources from forest areas, mainly for commercial purposes. They are the ones who have access to markets of timber, rattan and quarry products from the forest areas. They have means to transport the products, and financial resources to hire laborers for extraction and also money to purchase forest products for their domestic consumption. In terms of the wildlife consumption for their food, houses and gardens, the higher socio-economic classes consume more than the lower ones.

The people who belong to the lower socio-economic classes are the ones who are paid and actually go to the mountains. When they go to the forest areas, they also hunt wild animals and extract forest products for their domestic use. Their food consumption is small thus the demand for wildlife is low. They are the most knowledgeable population about the condition of forest areas, according to the participants of the Workshop.

With regards to the maintenance of forest products, the higher socio-economic classes take care of their own large forest areas. The lower socio-economic classes do not have areas to maintain, and when they have, they have no means to manage their natural resources.

## (3) Use of Water Resources

Participants of the Workshop pointed out that it is the rich who use the most water resources. The rich have a larger size of farmland that requires more water. The volume of water consumption decreases along the socio-economic ladder. The very poor use the least amount of water normally for drinking and domestic chores.

### **3.1.3 Decision-Making Mechanisms over Natural Resources**

Except in the case of *Muyong* system in Ifugao discussed previously, decision-making over the utilization and management of natural resources has been in the hands of individuals without any established rules or monitoring entities. However, the decision-making over the land use and land distribution was done by a group of elders in the past. The group informally decided who practice the slash and burn farming and where and when. When there is a conflict in respect of land use and distribution, the group of elders mediated the dispute.

To date, the common mode of decision-making, according to the participants in the sample communities is the dialogue between affected parties usually facilitated by political leaders in the village or municipal governments or PO officers in the case of

CBFM communities. Currently, the conflicts over private land are usually resolved by the individuals involved. When not resolved by the involved parties, the conflicts are settled by the village council and other offices in the municipal government. If they fail to resolve the disputes, then the case would be filed as a legal dispute in the courts. DENR would be involved in state land issues, and NCIP in land issues affecting indigenous peoples.

When the community joins the CBFM Program, a PO in coordination with DENR has the authority to make decisions over the land and natural resources issues within the designated CBFM area. POs organize meetings among the Board of Directors and call for a General Assembly meeting attended by members to discuss their concerns and question regarding the management of the project. The participants make decisions mostly on a consensus basis.

In the case of communities in Ifugao, the elders who possess the knowledge of cultural and traditional rituals hold strong influencing power in the decision-making. The elders would enforce penalties and sanctions on the villagers for the unreasonable destruction of the natural environment.

### 3.1.4 Local Conflicts

The findings on local conflicts that came out during the Workshop provided various issues and problems directly and indirectly related to the conditions and management of natural resources. A profound understanding of the dynamics of local population allows planners of DENR, LGUs and donors to design appropriate initiatives and programs.

#### (1) Cutting of Trees for Fuel Wood and Lumber

Despite legislations, policies or ordinances to control logging within some communities, cutting trees in the forest by both local people and outsiders takes place. Sometimes, the illicit logging activities develop into a conflict. POs or the village government, however, do not have the capability to enforce forest laws or control illegal logging in many cases.

Participants of the Workshop also mentioned that various projects and programs introduced by DENR sometimes have the effect of aggravating conflicts over the timber resources. Because DENR attempts to enforce systematic and legitimate forest management, the conflict arises between the *laissez faire* and illegal forest utilization. The situation is exacerbated since many people who do not have logging permits from DENR continue cutting trees. They claim that the process of securing a permit is costly and they cannot make profit if they seek permits.

#### (2) Gathering of Non-Timber Forest Products

Conflicts arise when there is a disagreement between two parties over the ownership rights of minor forest products, especially rattan. As in the case of timber, conflicts over non-timber forest products tend to be exacerbated by DENR-initiated projects and programs. Participants expressed that they are not so clear about the responsibility and authority of POs organized by DENR. Some members of village government said that their responsibility and authority were taken over by POs. The conflicts are left hanging when DENR does not monitor its projects closely.

### (3) Forest Fires Induced by Slash and Burn Farming

Communities have experienced conflicts over forest fires ignited by the slash and burn practice, especially during the summer season. Farmers who are affected by a fire condemn other farmers who are responsible for the fire. When the conflict is not settled by involved parties, POs or the village government step in to mediate. They mediate the conflict based on the village ordinances or agreement in respect of the restriction of slash and burn farming, but in some cases, those ordinances or agreements do not have legality.

### (4) Conflict Between DENR and Local Population

Conflictive incidents occasionally take place between local people and DENR when local people claim their farmland to be legally titled but the land is classified as state land by DENR. Another particular instance occurred in Belance, Nueva Vizcaya. There was hostility between local people and DENR after DENR decided to include the village in the protected Casecnan Watershed without consultation with local government and the people. Local people obviously did not wish to be a part of the protected watershed because their slash and burn farming would be strictly restricted, and they would lose their source of livelihood if it were the case. The area is still included in the protected area to date despite of the request from the communities to DENR.

### (5) Maintenance of Water Systems for Irrigation and House Consumption

Conflicts related to the maintenance of water systems arise in communities sometimes. Many communities in the Study Area do not have an established system for the maintenance of water system. Local people repair their water system when their system malfunctions. Community members contribute manpower and materials needed for repair in case of emergency. The conflicts arise when some villagers who use the water system refuse to contribute to its repair. POs such as an irrigators association or the village government, for failure to establish or enforce systematic maintenance of the water system, due to economic, managerial or political reasons also fail to or are unable to mediate the conflicts, according to the participants of the Workshop.

### (6) Tribal Conflicts

Many upland communities in the Study Area (**Table 3.1**) are migrants societies, thus a lot of them are ethnically heterogeneous. In many ethnically heterogeneous communities, tribal groups live harmoniously at least at the visible level, despite of the differences in language, culture and other characteristics. However, there are other instances where a tribal conflict becomes overt. *Sitio* Kadikitan is composed of tribes from Benguet, Isabela and Cagayan. This community has been experiencing a conflict between the *Bugkalot* tribe and the *Ifugaos*. The *Bugkalot* tribe would like the *Ifugaos* to stop the slash and burn farming in the area in order for the *Bugkalot* tribe to protect their timberland from the fire, but *Ifugaos* continue the practice.

In Belance, there is an unsettled conflict between the *Igorots* and the *Bugkalot* tribe over land ownership. The *Bugkalot* tribe, who has been practicing hunting and gathering, logging and the slash and burn farming, informally sold their ancestral land (though it was still the state land) to *Igorots* who migrated from Benguet for vegetable farming. The



migrants gave the members of the *Bugkalot* tribe either cash or materials for the acquisition without a deed of sale or written evidence. Since the land to date is generating significant profits from vegetable production, the descendants of the *Bugkalot* tribe claim that their ancestors were betrayed by the *Igorots*, and the paid amount or given goods were not enough for the land. The *Igorot* farmers counterclaim that they have been repeatedly paying to the members of the *Bugkalot* tribe, and the payment is enough for the value of the land. The conflict creates results in physical violence and civil cases.

(7) Discrimination

The *Ayangan* tribe in Bimpal, Lamut, Ifugao is discriminated by other tribes, particularly by lowlanders because they have low educational attainment, according to the participants. However, this was not brought up during the Workshop for unknown reasons. The *Bugkalot* tribe is also discriminated by other tribes because of their life style. The discrimination sometimes leads to a conflict. Because of the discrimination, they tend to avoid getting involved in political, social and economic activities with members of other tribes, which makes them isolated and underdeveloped.

(8) Political Sectionalism

Politics at all levels in this country has historically involved explicit conflicts and violence. The political conflict at the local level often influences the politics within POs and sometimes results in physical violence, according to the participants of the Workshop. Local people set fire to a number of reforested areas, destroy water systems or hamper livelihood projects as a result of political conflict within a PO or community.

(9) Farmland Boundary Conflict

The most common conflict in the communities is land boundary disputes. The factors contributing to the conflict, according to the participants are; 1) local people do not follow the proper procedures (surveying, marking and documenting) of determining their farmland, 2) local people cheat (move on the land marks) at the start of the slash and burn farming, and 3) local people encroach abandoned lots to which individuals claim their ownership rights after the encroachment.

The conflict over land boundary is usually resolved by involved parties with the mediation of local leaders. When they fail to settle their conflict, they bring the case to court.

(10) Mining

In Buyasyas there was a conflict between a mining company and the community over prospective mining operations in the area. The provincial government granted permission to a mining company for mineral exploration (gold mining) without consulting with local people. Villagers obviously do not wish for the mining operations to take place in their area because they thought that their area is an important watershed (the key headwaters of two major rivers in the area, Santa Fe and Matuno rivers). It would be to their shame if the mining produces pollution, and people down stream would be affected by the pollution. The community, with support from an NGO, was able to stop the mining company from

starting mining by claiming the area as the CBFM area thus local people have management authority over it.

#### (11) Land Tenure Instrument

There is a particular case involving DENR and DAR for the dual land tenure instruments for the same piece of land in Belance. DAR, through its Agrarian Reform Program, grants its beneficiaries with a Certificate of Land Ownership Award (CLOA). DENR, on the other hand, gave local people the Free Patent Title. People in Belance are confused by the dual titling and requested to two agencies to settle the issue. The conflict still remains unsettled.

### **3.1.5 Gender Relations at a Community Level**

The discussion on gender relations in the sample communities was undertaken in order to understand women's roles and responsibilities, particularly in natural resource management and in POs activities. The information should be useful to a planner in designing projects/programs that encourage half of the population to participate and contribute to the natural resource management and be benefited from the projects and programs.

The result of access and control analysis focusing on gender relations in the eight sample communities shows the significant difference in gender relations from one community to the other. Thus it is difficult for the Study Team to generalize the gender relations within the Study Area at the community level.

#### (1) Reproductive Aspects

It was mentioned in some communities that women traditionally dominates the decision-making in terms of various reproductive activities as child rearing, food preparation, fetching water, gathering fuel wood and washing. Both male and female members of a household collectively make decisions on food consumption, family planning, education of their children and other reproductive activities. However in other communities, men also play a key role in decision-making with regards to domestic work. Despite of the shared decision-making power by both men and women within a household, women have more duties than men in all communities in respect of the execution of household chores except physical work such as fetching water or collecting fuel wood especially from far sources.

The gender relations with regards to the reproductive concerns should follow tradition and culture. However, some female participants pointed out that they could not participate in community activities due to the heavy workload in their houses in addition to their responsibility in productive work. Because of lack of participation of women in the public domain, women are yet to be empowered in PO activities and politics. The number of women who publicly express such comments and opinions are generally limited. The existence of a women's organization in communities seems to have relationships with the number of such vocal women, though the relationships need to be examined further.

## (2) Production Aspects

Among all sample communities, land preparation (plowing) is the men's job, while planting and harvesting are done by women in the communities of *Ifugaos* and *Bugkalots*, and by both men and women in other communities. Men are active in hunting and collecting forest products, as well as the marketing of these forest products in the indigenous people's communities. Both male and female members of the household usually executed weeding and post harvest activities.

Farming related activities are executed by both men and women in many communities, but decision-making is dominated by men in some communities, mainly indigenous people's communities such as *Bugkalot*, *Ifugao* or *Iwak* tribal communities and by women in other communities. Women have more decision-making power in the case of lowland communities because they are the ones who market the farm products hence have more information in respect to markets. Some of them also manage small businesses such as *sari-sari* stores, processed food production or other services.

## (3) Land Ownership

In *Ifugao* and *Iwak* tribal communities, only males can own land. They are strict patriarchal society, and the inheritance is practiced among male members within the family. First sons get a larger portion of inherited property from their siblings. In other communities, men usually dominate the land titleholders, although a significant number of women also own properties. In the case of *Sitio* Taleb, Barangay Dallao, Cordon, Isabela, half of landowners are women within the CBFM area because it was required by DENR.

In respect of decision-making on land sale, purchase and inheritance, the landholder, regardless of sex, has the authority, which resulted in more men than women having decision-making power.

## (4) Community Activities

Generally, the number of women participating in coed POs, such as cooperatives and CBFM POs, are smaller in numbers than men. Even if women participate in POs, only a few women are in the position to make decisions. During meetings, significantly fewer women voice up than men because women, at conscious and subconscious levels, feel pressures not to express their opinions in public. Women can be active in participating in women's organizations as in the case of Bimpal, though many women's organizations have organizational and managerial problems as lack of funds.

In respect of local politics, there are some elected female members among village councils and municipal officials, but such women are limited. In *Bugkalot* communities, female politicians are next to none. Because of limited number of women in politics, governmental projects tend to bring more benefit to males than females. In spite of the disadvantage, women, as in the case of Bimpal, are not overwhelmed by the subordination. A number of women strive to achieve their status in the public domain through activities of women's organizations. Although it is said that this kind of gender relations in community activities and politics are regarded as normal and traditional women are not

satisfied with such relations. It was negatively identified that the policy of community organizations reinforces the subordination and exclusion of women from public activities.

### **3.1.6 External Interventions to Communities**

A community does not exist in a vacuum; it is continuously affected by external societies. The survey on external interventions to the sample communities was included in the Workshop because “the existence or extent of relationships with the external system (the administration and market) is a critical determinant of self-organizing experiential capacity of the community<sup>21</sup>.” Government agencies assist the communities based on the given mandates. Politicians provide resources to communities out of their own interests, and foreign donors directly or through the government and local organizations support the development of communities. NGOs and large cooperatives play an important role in aid of rural communities. The resources and information are flowing in and out through actors within the market economies. The externally-initiated development projects include infrastructure development, livelihood advancement, social welfare improvement and technical assistance.

#### **(1) Externally-Initiated Projects/Programs**

Infrastructure development in communities in general is highly appreciated by local people, based on the result of the Workshop. The construction and improvement of roads, foot trails and bridges improve the accessibility to markets, information and education. Farmers are able to bring their farm products to the market relatively easily after the development, which generated additional cash incomes. Roads and footpaths shorten the travel time of children going to school.

Spring water development provides water needed for irrigation, domestic work and sanitation. A waiting shed serves primarily as shelter and rest places, but also as the collection point of farm products for marketing. It also serves as a drop-off point of goods coming from outside. A village hall, clinic and day care center are multi purpose buildings serving as a venue for meeting and public services. Participants of the Workshop said that most of infrastructure development has positive impact on the welfare of local people and the community at large.

Technical assistance consisted of training and extension work related to bookkeeping, reforestation, livestock and crop production, soil and water conservation, SALT, leadership development and general project management. The assistance for livelihood development includes material for seedlings, certified seeds and livestock. The assistance also includes financial support for business, as agro-business, cottage industry and *sari-sari* stores. DENR supports reforestation projects and provides wages to laborers. These types of external assistances are appreciated by local people, but they also recognize the lack of sustainability of these initiatives.

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<sup>21</sup> Ohana, Hiroshi. Participatory Community Development and Local Social Organizations: The Village Vitalization, Report on the Case Study of Community Development Method of the Poverty Alleviation Rural Development Project in Sulawesi, the Republic of Indonesia, JICA, December 1997. The JICA Study Team translated the citation from an original article written in Japanese.

## (2) Linkage to Market

Most communities do not have organized connections with the market. Representatives from commercial banks or local moneylenders rarely visit their communities and traders or distributors are disinterested in their farm products. Farmers bring their own farm products individually and sell them to the middlemen in the towns. Farmers do not have the bargaining power and are subordinated by the buyers from whom farmers acquire the farm inputs for next harvest and to whom farmers have debts. In this sense, the linkage between villager and market in the Study Area is still underdeveloped.

### **3.2 Present Conditions of PO and NGO**

#### **3.2.1 Existing Programs/Projects with a PO Development Component**

A number of programs and projects, mostly initiated by government agencies and international donors, have a component of creating and/or strengthening POs (**Table 3.2**). The following are the programs/projects: 1) Community-Based Forest Management Program (CBFMP), 2) Integrated Social Forestry Program (ISFP) and Center for People Empowerment in the Upland (CPEU), 3) Institutional/Entrepreneurial Development Program for Cooperatives, 4) Agrarian Reform Community Development, 5) Agricultural Reform Infrastructure Support Project (ARISP), 6) Rural Improvement Club, 7) Irrigators Association Development, 8) Self-Employment Assistance *para sa Kaunlaran* (SEA-K), 9) Community Forestry Project – Quirino (CFPQ), 10) Debt for Nature Swap Initiative Program (DFNSIP), 11) Central Cordillera Agricultural Programme (CECAP) and, 12) Caraballo and Southern Cordillera Agricultural Programme (CASCADE).

In addition to the government-initiated programs, a numbers of NGOs organize POs within the Study Area through various programs. Some NGOs, especially those international NGOs as Plan International and Conservation International or nation-wide NGOs as Philippine Rural Reconstruction Movement (PRRM) and Philippine Association for Intercultural Development (PAFID) initiated their own projects that have a component of PO development. However, those NGO initiatives are limited in number and scale. Some NGO programs managed by local NGOs are funded by governmental agencies, including DENR. For the CBFM Program, a number of NGOs contracted by DENR executed the PO formation, training activities, legal assistance for tenure instrument application, environmental education, reforestation activities and livelihood projects.

In many villages, religious groups such as Christian ministries and missionaries organize local population in a form of church groups. Their main activities concentrate on worship and other religious activities, and in some cases, activities extend to social welfare activities including natural resource management. Some religious groups have evolved to registered cooperatives.

#### **3.2.2 Overall Results of Evaluation**

Using the PO/NGO Inventory Method described in **Section 2.2**, detailed information with regards to POs with CBFMA, POs without CBFMA and NGO/research institutions was collected. Based on the information gathered, the management capabilities of those organizations were assessed (**Table 3.3**).

**Evaluation of POs and NGO (Summary)**

Category	Evaluation Items	PO with CBFMA	PO w/o CBFMA	NGO
Organizational Structure, Processes and Management Style	Structure	1.92	2.59	3.55
	Authority Relationship and Leadership	2.00	2.38	3.40
	Incentive System	1.46	2.01	3.00
	Communication and Work Environment	1.97	2.52	3.25
	Ability to Facilitate Participation	2.03	2.43	3.15
Human Resource Development	Training of Members	1.70	2.15	3.20
	Membership Recruitment	1.76	2.31	2.20
Resources and Institutional Environment	Monetary Resources	1.57	1.94	2.75
	Physical Resources	1.24	1.94	3.15
	Human Resources	1.86	2.43	3.25
	Legal Environment	2.43	2.68	3.65
Network of Organization and Interaction	Supporting Organization	2.03	2.38	3.60
	Access to Information	1.70	2.43	3.50
Action Environment	External Environment for Activities	2.08	2.15	3.05
Total Average		1.84	2.29	3.16

Source: JICA Study Team

0: Not Applicable/Failed	3: Established/Satisfactory
1: Initiated/Inappropriate	4: Outstanding/Appropriate
2: Developing/Needs Improvement	

In general, the findings are quite discouraging; both POs with and without CBFMA lack management capability as a whole. The total average score of POs with CBFMA is 1.84, and POs without CBFMA is 2.29, both failed to reach score 3 (“Established/Satisfactory”). Particularly the score of POs with CBFMA is devastatingly low, which failed to reach even score 2 (“Developing/Needs Improvement”). With the score, an organization basically is unable to carry out any activities with reliability.

The scores of POs with CBFMA in all aspects are lower than those of POs without CBFMA, especially those shaded items on the table above. The poor evaluation is mainly derived from the fact that the Team surveyed all POs with CBFMA, whether the POs is dormant or not, while only active ones were selected for POs without CBFMA for the survey.

POs without CBFMA in average have longer history (average 9.59 years) and larger membership than POs with CBFMA (6.37 years). However, no correlations between evaluation scores and organizational age or size were found when the correlation coefficients were examined using a formula explained later (**Figure 3.1**).

### 3.2.3 POs with CBFMA

#### (1) Organizational Structure

All 37 surveyed POs have a form of organizational structure. Two major problems on their structures were found during the Inventory. First, structure is created in an inappropriate way. The most common error is the absence of executive body within the organization. It was commonly observed that the members of Board of Directors (BOD) actually execute managerial duties as a manager, bookkeeper or loan officer without a clear job description and legitimate designation. This creates the unclear allocation of accountability of those tasks<sup>22</sup>. More importantly, BOD members cannot inspect the operations because they are the *de facto* executive body of the organization. The lack of monitoring functions within the organization creates non-transparency and corruption-prone operations.

Another common error in organizational structure is the lack of decision-making power and authority of General Assembly (GA). In the cases of several POs surveyed, the function and responsibility of GA is nowhere to be found in their organizational structure. As a result, the PO is prone to become the leaders' personal possession, and the organization can be no longer called a "people's" organization. GA must be placed at the top of organizational hierarchy as long as it is a PO. Several surveyed POs failed to meet the requirement.

Second major problem, based on the survey result, is the enforcement of organizational structure. The organizational structure is established on paper or at least in the leaders' mind, but it is common among POs with CBFMA that the structure is not widely understood among the members and even by some leaders. It is due mainly to the lack of opportunities in utilizing the structure. It is important for an organization to have regular activities so that members and leaders can become accustomed to the flow of information and reporting, decision-making patterns and allocation of tasks and responsibility. Only 13.5% of the POs with CBFMA have satisfactory organizational structure and utilization of the structure.

#### (2) Authority, Leadership, Communication and Participation

Because of the structural deficiency discussed above, the management tends to lean on the individual leadership. An organization that exceedingly depends on the individual leadership without a functioning monitoring system is prone to become non-transparent and corrupt. According to our PO/NGO Inventory, 32.4% of those POs have experienced mismanagement of financial resources thus the leadership became distrusted by its members. Those POs would encounter a great risk to lose the support from its members and become an inactive one (see **Box** below).

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<sup>22</sup> For certain new POs as Ayangan Dapiz Agro-Forestry Development Coop and Bakir Pagbiagan ti Pag-Ilian, DENR personnel took charge of some of the management responsibilities.

Even though an extreme case as mismanagement of money is not evidenced, so called “strong political figures” within the organization, who are usually relatively well-educated, wealthy and driven, monopolize the organization in order to bring projects in the area. Interviewees representing 10.8% of POs with CBFMA complained that projects only benefited the political leaders who brought the projects themselves. This type of PO tends to face sectionalism among leaders and members, dividing the organization into smaller factions. It is aggravated when the community has existing tribal conflicts. The sectionalism tends to create inadequate environment for communication among leaders and members and generate greater conflicts within the organizations. The low average score for “Communication and Work Environment” (1.97) is attributed from the sectionalism.

The lack of management is also commonly observed. The inadequate managerial ability of leaders is prevalent, which is derived from the lack of human resources, inadequate training and education, improper incentives and unclear distribution of tasks and responsibilities within the organization. The inadequate executive leaders often fail to mobilize members for activities, while in many cases, leaders fail to manage the distribution of compensations for laborers, communicate with their members the objectives and benefits of activities and provide moral support to participants. During the interview, there were many leaders and members who failed to explain what the CBFM Program or tenure instrument is. Almost 65% of the POs with CBFMA have inadequate executive leaders, according to the Inventory.

**Box: Gomez Farmers Cooperatives**

Gomez Farmers Cooperative, Inc. was established in 1993 with technical assistance from an NGO. The coop became active when members decided to start the buy and sell scheme. The coop established a *sari-sari* store. An auditor from a government agency once visited the coop, and according to the interviewed manager, requested her to change the figures on the record book as if the revenue from the store is higher. The auditor argued that it makes coop more viable. She did not report the incident to Board of Directors because “they are not supportive.”

When the manager reported the sale of the store at the annual General Assembly meeting, members started questioning. The manager explained that the figures are false, and there is no actual money. The members became skeptical about the coop operations and stop supporting. Other executive members or BOD did not take any actions on this issue, and the coop became dormant.

After the coop became inactive, the SECAL project financed by the World Bank was introduced to the area, and DENR awarded CBFMA to the coop. Under SECAL, the coop was to play a key role in the establishment of nursery and implementation of agro-forestry/reforestation. The nursery was not established, and the completion and survival rate of trees was very low in Barangay Gomez at the end of the project.

### (3) Incentive System

Based on the concept of CBFM Program, land management rights and tenure instruments for renewable 25 years are the most critical incentives for POs and its members. However, only 10.8 % of surveyed POs signified that land management rights and tenure instruments are significant incentives. Respondents at those POs noted that by having management rights over the land, they could prevent outsiders to execute their activities as slash and burn farming and logging. Their opinions of CBFMA as an incentive remain as a minority, and most PO leaders and members do not consider land management rights and



tenure instruments as incentives<sup>23</sup>. According to the Inventory result, the incentives for those organizations are remarkably inadequate, generating only a score of 1.49. Within the limited incentives, PO leaders and members consider the financial (wage) and physical (i.e. seedlings) compensations for reforestation and agro-forestry activities as more significant incentives.

The reason that most PO members do not consider the land management rights and tenure instruments as significant incentives is because they have been occupying, cultivating and/or using the area for decades before DENR arrived at the area and gave the rights and tenure instruments. The provision of land use permit for many local people is considered as “just putting another name on the land that has been our own for years,” thus cannot be an incentive. It implies that the concept of CBFM Program is not well understood by PO leaders and members, and the explanation of DENR about the Program is inadequate.

Due to the inadequate incentives within the organizations, most POs with CBFMA failed to obtain qualified human resources within the organization. Most managerial officers are volunteers who have other interests and activities aside from PO management. They can work for a PO only irregularly. POs sponsored by International Timber Trading Organization (ITTO) and JBIC are a few exceptions, and they are able to provide financial incentives to executive officers who are qualified and work at their offices in a regular basis. But even in this case, the incentives are limited to officers, and the incentives for members are still poorly explained thus uncertain.

POs with CBFMA must evolved to a viable cooperative that would be able to provide incentives to their members through the provision of savings and loans services, dividends, patronage refund, market information, training and education, development of livelihood activities and buy and sell services of farm supplies and commodity goods and rental service of farm equipment/facilities.

#### (4) Human Resource Development

One of the major weaknesses expressed during the PO/NGO Inventory was the inadequate human resources in organizations. A number of PO leaders and members mentioned that the level of education of leaders and members are generally low, and their literal and numerical abilities, technical knowledge and generic competencies as punctuality, analytical thinking and systematic performance tend to be inadequate. As a result, POs encounter difficulties in bookkeeping, managing financial and physical resources and executing certain activities as the savings and loans.

A number of agencies, including LGUs, DENR, Cooperatives Development Authority (CDA), Department of Agriculture (DA), Department of Agrarian Reform (DAR), Department of Trade and Industry (DTI), Department of Labor and Employment (DOLE), Department of Health (DOH), Department of Science and Technology (DOST), Technical Education and Skills Development Authority (TESDA), Department of Social Welfare and Development (DSWD), the Land Bank, foreign donors and NGOs have conducted training and workshops to certain POs. The topic of those training range from

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<sup>23</sup> A respondent expressed their threats from the issuance of tenure instrument for renewable 25 year. “It means my family must return the land to the government after certain years, doesn’t it? But we have paid for this land and are paying tax every year. I have the documents for land sales and tax so that the government cannot take my land away from us.”

pre-membership training, technical training on farming techniques, tree planting, forest fire control, agro-forestry, nursery establishment, soil conservation such as SALT, livelihood/income generation, leadership, financial management and bookkeeping, environmental and gender awareness and community planning.

The impact of those training seems to be marginal, according to the survey result, because only a limited number of leaders and members, mostly leaders, have attended those training. They usually do not share learned knowledge, information and skills with other members of the PO who could not attend the training. More problems occur when the trained members do not have a chance and/or resources to practice the skills and knowledge. For example, a trained treasurer would forget the bookkeeping skills when he/she does not have monetary resources to manage. On-the-job training, when possible, should be a more effective method for education.

#### (5) Member Recruitment

A PO must be able to increase the number of members to a level where PO can operate activities that would provide resources for the sustainability of the organization. Based on the survey result, the recruitment of members of POs with CBFMA is remarkably inadequate (score 1.76). Most POs are stagnant in terms of the number of members, and few POs have any sort of strategy or plan for membership recruitment. It is because there is a strong notion among leaders and members that PO members under the CBFM Program are limited to those who occupy and/or cultivate the defined CBFM area. The CBFM area is not considered as “a communal area,” but a cluster of individual properties.

The human resources should be developed through the vitalized recruitment and increased number of members through the promotion of purpose of CBFM Program, which is to manage their common forestland through the collective effort of not only the occupants or cultivators within the CBFM area but of all community members. DENR should spend more time and resources for the explanation of objectives of CBFM Program and its implication to local population.

#### (6) Resources and Institutional Environment

The results of PO/NGO Inventory with regards to the monetary and physical resources show the miserable conditions of POs with CBFMA. For the monetary resources, the average score is 1.57 and for physical resources, 1.24. These mean that many POs do not have the minimum capital requirement for operations. Physical facilities/equipment to generate revenue, hold meetings, communicate with concerned personnel and agencies or produce documents are remarkably inadequate, which make POs extremely difficult to maintain their operations and organization itself.

The lack of monetary and physical resources also has a symbolic connotation. The local people do not have a psychological focal point for their PO when there is no office, and members are mentally discontented with the PO when it has only the small amount of capital. It is exceedingly difficult for PO to encourage members to participate in its activities or recruit new members under such circumstances.

The discouraging survey result is derived from the fact that CBFM Program, despite of its PO formation and development components, does not provide adequate opportunities for physical and financial build up of POs. CBFM Program has no components, for the establishment of micro credit services, buy and sale activities, equipment rent-out or PO revenue generation through livelihood activities. DENR merely provides communication equipment (radio and its accessories) or office building at best. The PO development does not require considerable financial or physical investment from external agencies but rather needs intensive technical assistance and human resource inputs. DENR does not have adequate number of qualified specialists or personnel at the field level who design, plan, implement and monitor PO build-up components described above<sup>24</sup>. DENR is introducing CBFM Program to a PO without a well-defined strategy for monetary/physical viability and sustainability, which naturally makes the program not viable and unsustainable.

(7) Network of Organization and Interactions

POs with CBFMA receive support from various governmental agencies, especially DENR. As the average scores imply (2.03), support for the POs is insufficient for the organization, particularly until its organizational take-off. The lack of resources at the supporting agencies, in addition to the physical distances of communities is the major constraint.

When the correlation between the average total scores and scores of each evaluation item was examined using the formula below, the level of external support and total score has relatively high correlation coefficient, 0.85.

$$\rho_{X,Y} = \frac{Cov(X,Y)}{\sigma_X \cdot \sigma_Y}$$

then,

$$-1 \leq \rho_{X,Y} \leq 1$$

or,

$$Cov(X,Y) = \frac{1}{n} \sum_{i=1}^n (x_i - \mu_x)(y_i - \mu_y)$$

where, X = Scores on Supporting Organizations

Y = Total Average Scores

High correlation implies that external assistance has high influence on the total quality of POs. However, as explained later, it is not the case for POs without CBFMA.

It is important to note that a few POs, especially in Ifugao province are relatively well supported by external agencies such as public and private organizations<sup>25</sup>. The members of these POs are exposed to new technologies, information and more importantly, thoughts that allow them to work more efficiently and effectively in the context of modern interventions. POs in Ifugao enjoy the highest average total score (2.16) among four provinces. However, some comments of respondents suggest that the impact of these external interventions is still a question due to the lack of market access and low educational attainment of people in general in the area. It requires further investigation.

<sup>24</sup> The issues on the capability and qualification of DENR personnel are discussed in more detail in **Section 3.3**.

<sup>25</sup> CECAP funded by EU is a multi-million dollar program in Ifugao.

### **3.2.4 POs without CBFMA**

#### **(1) Organizational Structure**

The average score of organizational structure for POs without CBFMA is significantly higher (2.59) than it is for POs with CBFMA (1.92), although the score of 2.59 is still considered as inadequate. A greater number of POs have established an organizational structure that has both executive and supervisory bodies. The flow of information and reporting, distribution of tasks and duties, allocation of responsibilities and accountability are more clearly defined and better understood among the leaders and members, although many POs still struggle in establishing the structure.

Better organizational structure among POs without CBFMA seems to be attributed to the support from PCAO, OPA, MAO and local line agencies of DAR and NIA. These agencies have a longer history of developing and supporting POs than DENR and established a standard organizational structure of POs.

The higher score is also derived from better performance in project implementation of POs without CBFMA. The more POs execute projects and activities, the more sophisticated and mature their organizational structure becomes. As they use the structure frequently during decision-making and activities, leaders and members became familiar with the flow of information and distribution of roles and responsibility within the organization.

However, there was no correlation between performance and age of POs, nor the quality of structure and the age of POs. Therefore, the higher score cannot be attributed to the longer history of POs without CBFMA.

Another characteristic of organizational structure of POs without CBFMA is in the authority given to the General Assembly (GA). GA within the structure has legitimate decision-making powers in the formulation of policy, annual plan and implementation of key activities. In this sense, the members are given the tasks and responsibility of monitoring organizational activities, which would make the organization relatively transparent and less prone to corruption. However, incidents of mismanagement of funds and misconduct of leaders were reported in the results of survey, as in the case of POs with CBFMA. It indicates the general findings of better organizational structure for POs without CBFMA to be applicable to certain POs only.

#### **(2) Authority, Leadership, Communication and Participation**

The average scores of “Authority Relationship and Leadership Practice,” “Communication and Work Environment” and “Ability to Facilitate Participation” for POs without CBFMA are 2.38, 2.52 and 2.43, respectively and are significantly higher than POs with CBFMA (2.00, 1.97 and 2.03, respectively). The results suggest that POs without CBFMA have more qualified leaders, who facilitate better communication among the leaders and members and encourage more participation of members. It is again important to note that the survey results are based on the comparison with POs with CBFMA. In the absolute sense, the average scores are still low, and those POs have inadequate leadership, work environment and ability to facilitate participation.

The higher score is mainly derived from the fact that the Team surveyed only active ones for POs without CBFMA, while all POs with CBFMA were inventoried. POs that have survived from the complete organizational failures and still exist as active organizations are expected to have better leadership, working environment, communication mechanisms among leaders and members.

When the correlation was examined between the total average scores and scores of “Communication and Working Environment” using the formula previously described, the correlation coefficient was relatively high (0.87). It indicates that superior communication and working environment promote better quality POs in the case of POs without CBFMA. The longer history of organizations would make the POs more popular in the area, which would enable more participation. But the survey results show no correlation between the age of POs and the scores. Time would be an important element for a PO to mature and reinforce its leadership and work environment, which was not proved during the inventory.

### (3) Incentive System

As the low score indicates (score 2.01), POs without CBFMA fail to provide adequate incentives to its members and leaders. Most cooperatives have been unable to offer sufficient dividends or patronage refund for the members, and members do not feel strong benefits from the services that cooperatives provide to members. For irrigators associations, agrarian reform communities, women’s organization and other forms of POs, the status is similar; the majority of members do not appreciate the services the organizations offer to their members.

Most POs without CBFMA failed to generate sufficient revenue for the provision of monetary or in-kind compensations to officers and executive staff members. Their work in many cases is purely voluntary, which makes the operation of PO irregular, unprofessional, unstable thus inefficient. POs that provide decent incentives to its officers are limited to larger cooperatives with established savings and loans services. Even though the score is higher in the Evaluation Grid compared to POs with CBFMA, the incentive system of POs without CBFMA is still inadequate and needs to be improved if the PO is to establish the sound foundation of dedicated members and qualified executive officers and leaders.

### (4) Human Resource Development

According to the survey result, training of members and leaders is not enough or has marginal impact on the operation of POs without CBFMA (score 2.15). Some of the members of most cooperatives undergo pre-membership training conducted by PCAO or DAR. Less members and leaders of irrigators associations tend to participate in less number of trainings and orientations, and when they do, training concentrates on livelihood and PO management.

In spite of inadequate human resource development efforts as training, the level of qualifications of members and leaders is significantly higher (average score 2.43) than POs with CBFMA (1.83). POs without CBFMA have more leaders and members who are relatively more familiar with their operation and have knowledge and skills necessary to

their activities. It was achieved not through training but recruitment, which is discussed next.

#### (5) Member Recruitment

Some surveyed cooperatives have succeeded in recruitment hundreds of members, while others remain small in membership. A number of cooperatives limit their members to those who resides in their village or *sitio* and remain as a “village coop.” Even so, their recruitment activities are relatively organized compared to POs with CBFMA whose recruitment is deemed to be limited to those who occupy or use the CBFMA area. Therefore, the score for POs without CBFMA is significantly higher (2.31) than POs with CBFMA (1.76). Irrigators associations limit their members to water users of the same irrigation system.

The rationale of limiting members to co-villagers is the practicality of collecting share capital and repayment of credit. Most POs do not have the means to collect payment from geographically distant areas. Besides, there is also a psychological brotherly tie among villagers, which tends to exclude those outside their village. It is difficult for a PO to establish sound organizational foundations with a limited number of members. POs need membership fees, share capital and users for their services to generate revenues. POs also need to enhance the quality of human resources within the organization. POs, thus, need to, when appropriate and possible, strategize their recruitment activities and implement systematic, feasible and effective recruitment activities.

#### (6) Resources and Institutional Environment

Monetary and physical resources of surveyed POs without CBFMA are remarkably inadequate (both scores 1.94), even though the average score of physical resources is significantly higher than POs with CBFMA (1.24). It indicates that the POs still struggle in obtaining sufficient funds, equipment and facilities necessary for their operations and projects, and conditions are similar to POs with CBFMA explained previously. Even the multi-million peso cooperatives with hundreds of members still struggle in securing funds for the expansion of their savings and loan scheme or diversification of their businesses.

As discussed previously, human resources for POs without CBFMA are significantly better than POs with CBFMA. Higher educational attainment of leaders and members, better literal and numerical ability and improved generic competencies would allow POs to operate more efficiently and effectively.

#### (7) Network of Organization and Interactions

This is an area where POs without CBFMA have the comparative advantage relative to POs with CBFMA. POs without CBFMA have more intensive support from external agencies and organizations, thus better access to information and new technologies as a result. These assisting agencies and organizations include LGUs (as PCAO, OPA, MAO and PSWO), line agencies such as DENR, DPWH, DAR, DTI, DOST, TESDA, DOLE and NIA, politicians, NGOs and foreign donors. A number of local traders, middlemen, suppliers and distributors of farm inputs have linkages with POs. For larger cooperatives, the Land Bank assists POs financially and technically.

The survey results suggest that POs without CBFMA have more linkages with outside funding sources and markets. It might be attributed to the fact that those surveyed POs without CBFMA are “survivors” ones. The correlation between the average scores of external support and total average scores was not found significant, unlike in the case of POs with CBFMA.

### **3.2.5 NGOs and Research Institutions**

There are a number of NGOs and research institutions that are involved in environment-related activities within the Study Area. As the survey results show, the management capacity of those NGOs and research institutions in general is significantly higher than POs in all aspects, including: Organizational Structure, Authority, Leadership, Communication and Participation, Incentive System, Human Resource Development, Member Recruitment, Resources and Institutional Environment, Network of Organization and Interactions.

NGOs, despite its term, work for governmental programs/projects and sometimes retain a contract with public agencies. Because of its registration system and regulations in the country, it is not clear whether NGOs are really non-profit base or not. NGOs should have a mission to serve for public interests, though in reality, an organization becomes a means for professionals to generate their income. In fact, many NGO staff members in the Study Area work as consultants in their spare time. For these, most NGOs in the area are not different from consulting companies<sup>26</sup>.

The difference between an NGO and PO can be found in their organizational set-ups. A PO, at least in principle, must consist of members who have an ultimate decision-making authority, whereas for an NGO, members, if any, are the contributors and have no decision-making authority, except in the case of two tribal cooperatives. An NGO usually have regular funding agencies, which assist operational costs, particularly the financial compensation of professional staff members. Therefore, an NGO has relatively educated and qualified executive members.

Surveyed NGOs can be classified into five types as follows: 1) a branch office of international NGO, 2) a branch office of nation-wide NGO, 3) a tribal cooperative that evolved to an NGO, 4) a local NGO organized by a group of former DENR officials, and 5) Other local NGOs.

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<sup>26</sup> Some respondents during the PO/NGO Inventory complained that only NGOs benefited from the projects, not local population. They suggest that the government should give money directly to POs, but not through NGOs.

**Type of NGOs**

Type	Name of NGO	Sponsor
International NGOs	Plan International	Foster parents
	Noah's Ark House for Children	Canadian individuals
	Organization for Industrial Spiritual and Cultural Advancement (OISCA)	A Japanese religious org.
Nation-Wide NGOs	Philippine Rural Reconstruction Movement (PRRM) Ifugao Branch	Various donors
	Philippine Rural Reconstruction Movement (PRRM) NV Branch	Various donors
	Baptist Out of School Training, Inc. (BOOST)	Baptist churches
	Philippine Association for Intercultural Development (PAFID)	Various donors
Tribal Cooperatives	Tribal Cooperation for Rural Development, Inc. (TRICORD)	Religious groups
	Kalahan Educational Foundation, Inc. (KEF)	Religious groups
Local NGOs led by former DENR staff	Fnd. of Oriented Rcrs. & Ecosystem for Sustainable Tech. & Society (FORESTS)	DENR, LGUs
	Friends of the Environ. for Dev't. & Sustainability (FRENDS)	DENR, LGUs
	EDSA Environmental Multi Consultants	DENR
Other Local NGOs	Cagayan Valley Partners in People Dev't.	Various donors
	Apochan Development Program Inc.	Christian Children Fund
	Kataguan Center	A Japanese donor
	Spiritwood Corporation	A timber company

Source: JICA Study Team

Naturally, the policies and strategies of international and nation-wide NGOs come from the central or national office, while local NGOs can decide their policies and plan themselves. Financially, international and nation-wide NGOs are relatively stable, though not necessarily affluent. The activities of these NGOs in general are relatively consistent and at a regular basis compared to local NGOs, except the tribal cooperatives. The tribal cooperatives, which are assisted by religious groups, have steady and integrated programs/projects. Except Noah's Ark House for Children, international and nation-wide NGOs assist or implement projects/programs in indefinite areas, whereas the tribal cooperatives and other local NGOs concentrated their activities in specific areas.

The table below shows the summary of their programs/activities related to environmental issues and their working areas.



**Summary of NGO Activities Related to Environmental Issues and Working Area**

Name of NGO	Major Activities and Programs	Area of Work
Plan International	Planning, Refo., Agro-Forestry	Region Wide
Noah's Ark House for Children	Envir. Ed. for Children	Banaue, Ifugao
OISCA	Tree for Legacy, Envir. Ed. for Students	Region Wide
PRRM Ifugao Branch	CBFMP, Planning, Refo., Agro-Forestry	Ifugao
PRRM NV Branch	CBFMP, Planning, Refo., Agro-Forestry	NV & Quirino
BOOST	Agro-Forestry, R&D, Extension&Training	Region Wide
PAFID	CBFMP, Legal Support	Region Wide
TRICORD	CBFMP, Refo., Agro-Forestry, Envir. Ed.	Ikalahan Tribal Comm.
KEF	CBFMP, Refo., Agro-Forestry, Envir. Ed.	Ikalahan Tribal Comm.
FORESTS	CBFMP, Planning, Refo., Agro-Forestry	NV
FRENDS	CFPQ, Refo., Agro-Forestry	Quirino
EDSA Environmental Multi Consultants	CFPQ, Survey, Planning, Forest Protection	Quirino
Cagayan Valley Partners in People Dev't.	Policy Advocacy, Training	Region Wide
Apochan Development Program Inc.	Envir. Ed. for Children	Banaue, Ifugao
Kataguan Center	Envir. Ed. for Children	Lamut, Ifugao
Spiritwood Corporation	Nursery Dev., Refo.	Diffun, Quirino

Source: JICA Study Team

There are four research institutions that focus on environmental issues. They are: College of Forestry at ISCAF (Ifugao State College of Agriculture and Forestry), Agro-Forestry Department at QSC (Quirino State College), College of Forestry and Environmental Science at NVSIT (Nueva Vizcaya State Institute of Technology) and College of Forestry and Environmental Science at ISU (Isabela State University) at Cabagan. All of them are state colleges and involved in extension work and training of local people. As generally observed in all state schools in the country, research institutions in the Study Area struggle in securing adequate funding for their activities.

### 3.3 Capability of DENR Local Offices, ENRO-LGU and Personnel

Using the Training Needs Analysis method described in **Section 2.3**, the capability of officials at two regional offices, four PENROs, eight CENROs, four (4) ENRO-LGU was assessed and evaluated<sup>27</sup>. A separate analysis was executed for officials at the Forestry Management Service Division (FMSD) and CBFM Unit at PENROs and CENROs though they are part of PENROs and CENROs.

#### 3.3.1 General Findings

Higher line agencies (regional offices and PENROs) seem to have more qualified officials than the lower offices (CENROs) from the perspective of their educational attainments and formal training. A number of respondents pointed out that inadequate competencies give negative effects on their services, especially at the CENRO level. Considerable number of respondents mentioned that inadequate competencies, as well as value orientations and work ethics, of employees are significant factors that hinder better

<sup>27</sup> See **Data Book** for the result of survey.

performance and services. This finding may be related to the relatively low qualification of officials at the CENRO level.

However, a limited number of respondents at CENROs recognized the gap between their duties/responsibilities and their qualifications, implying that their duties/responsibilities require other qualifications than they possess. There is a need for DENR to match the qualifications of personnel to the duties and responsibilities of offices and positions. Training can then be designed on the basis of personnel qualifications and expertise required by the office or position. DENR has more officials with advanced College degrees than the ENRO-LGU.

Respondents at ENRO-LGU expressed that there is a gap between their competencies and their duties. This implies the systemic problem in the allocation of officials to position (with specific job description) at ENROs.

In spite of the claimed problems of competencies of officials, many officials expressed that they are presently satisfied with their work performance. They state that the major constraints of their office, among various constraints, are inadequate financial and physical resources for their activities, including vehicles, survey equipment and updated computer units.

The most puzzling finding is that many respondents at DENR local offices and ENRO-LGU expressed that human resource development as the most important strategy for improved performance and services of their offices, yet they state that inadequate financial and physical resources are the most critical constraints at the office. This discrepancy between the problem and solution may be derived from the fact the respondents recognize the low/no possibility of improvement pertaining to financial and physical resources at their offices, allowing the other option for improved performance through development. Or they consider that the financial and physical constraints can be lessened, or at least alleviated significantly by the improvement of human resources. The rationale for their answer needs further examination.

Human resource development, despite of its popularity, would not be an effective strategy to improve the quality of services when the most critical constraints are the inadequate financial and physical resources. In other words, a training program, which is an important part of human resource development, might not have a positive impact on the enhancement of outcome. Human resource planners at DENR, when designing a training program, must carefully consider whether or not training can solve addressed problems. At the same time, many respondents at all levels of DENR local offices and ENRO-LGU expressed their excitement in participating on this Training Needs Analysis, and their expectations for training programs. Some respondents emphasized the intangible impact of training, as enhanced motivation and awareness, as critical.

In respect to officials who are in charge of CBFMP, they lack academic background in community organizing, participatory development, organizational management, sociology and anthropology. All CBFM personnel at local DENR offices and LGUs have only an educational background in natural sciences. Even though many of them underwent training on CBFMP and community organizing, it is rare that their mindset and

perceptions as natural scientists to be modified as a community organizer. DENR should employ more social scientists for CDO and CDA<sup>28</sup>.

### **3.3.2 Qualifications of Officials**

#### **(1) Regional Offices**

Thirty Seven percent (37%) of respondents at two regional offices; the Cordillera Administrative Region (CAR) and Region 02, hold Master's degree, and two third of them are Bachelor graduates in the field of forestry, biology, civil engineering, fishery, chemistry, business administration and management, education, English literature and law. The administrative staff members have degrees in business management and law. Some respondents in charge of training or IEC have formal training in education and TOT (Training of Trainers). Ninety Eight percent (98%) of respondents said that the knowledge and skills they acquired from their formal education<sup>28</sup> is useful in their work to date.

All respondents at the regional offices participated in various training sessions, and senior officials tend to experience more training. A lot of training pertain to technical matters, ranging from silvicultural methods and practices, EIA (Environmental Impact Assessment), specific engineering technologies, forest and watershed management, laws, scientific survey techniques, monitoring evaluation techniques and planning skills. Other training focuses on managerial issues, such as leadership, communication skills, contract management, supervisory and personnel development and presentation skills. Most training was useful for and applicable in their work, according to respondents. It implies that the most previous training programs were designed appropriately as to meet the participants' expectations, though the impact of those programs on their performance requires a further research.

#### **(2) PENROs**

About 36.4% of respondents from the four PENROs hold Master's degree, while 57.6% are Bachelor graduates in fields relevant to their present positions. More than half of respondents have degrees in forestry, forest and other natural resource management and agro-forestry. There are some staff members who majored in public administration/management, and some areas in social science. One hundred percent (100%) of respondents at the PENROs expressed that their academic knowledge is very useful in the technical aspects of their current work.

Almost all respondents experienced technical training relevant to their present position including trainings for general skills for project management and various administrative and management skills for workers in administrative service section. Some staff members in higher positions have training on supervisory work and personnel management.

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<sup>28</sup> Due to the educational system in the country, there are extremely limited schools offer Rural Development, Sociology or Anthropology at a higher education level. The alternatives would be Management, Agricultural Economics and Education.

### (3) CENROs

Educational attainment of officials at the CENROs in general is relatively lower than it is at the regional offices or PENROs. 21.3% of respondents at a CENRO level have Master's degree in forestry, forest resource management and other related fields, while 78.7% of respondents have Bachelor's degrees. Except two officials, all staff members recognize that their educational background is relevant to their position.

Most respondents have undergone training for specific management skills, relevant to their specialization, such as forestry, agro-forestry, soil and water management, land management and so forth. Almost one third of CENRO workers have participated in community organizing training or CBFM-related skill trainings. Some respondents had trainings for supervisory work and personnel management.

### (4) FMSD

The respondents at FMSD at PENROs and CENROs majored in forest resource management or are forestry graduates and others specialized in agricultural engineering, agro-forestry, civil engineering, people's empowerment and public administration. All respondents at FMSD expressed that the training they participated in enhanced their knowledge and are very effective for their work.

### (5) Personnel in Charge of CBFMP

Per TNA conducted to personnel in charge of CBFMP's and analysis of the data collected, almost all the personnel assigned with this particular section are Forestry Graduates major in Forest Resources Management. There is one official with BS in Agriculture (Crop Protection). Out of 27 respondents who are in charge of CBFMP, 6 or 22% have a Master's Degree. Most of them have attended training sessions on CBFMP and learned knowledge and skills relative to CBFMP implementations. About 33.3% of respondents have attended the training specifically focusing on community organizing and PO development for forestry programs.

### (6) ENRO-LGU

Respondents at ENR Offices at LGUs are CDAs and forest technicians, ENR Officer and administrative staff. In terms of their educational attainment, relatively fewer officials at ENRO-LGU have advanced college degrees than the workers at the line agencies of DENR. Among 16 respondents, 15 respondents are forestry and forest resource management graduates, 12.5% of respondents holds a Master's degree. All respondents except one said their knowledge from their previous education is useful to their duties.

Many of them have finished technical training for their specialized areas of environment and natural resource management. Some officials participated in training on basic project management skills (planning method, project cycle management and ZOPP). Some technical workers have undergone training on GIS and GPS. About half of respondents at ENROs participated in training on community organizing and participatory approach.

### 3.3.3 Individual Performance and Competence

#### (1) Regional Offices

Most of the respondents assessed various areas of their generic competence as “satisfactory” but not so much as “outstanding”. The tendency is that, generic competencies as training, coaching & delegating, disciplining & consulting, identifying and solving problems and making decisions were evaluated as relatively weaker compared to other areas. About 68.5% of respondents at the regional offices evaluated their performance as “very satisfactory,” 9.3% as “outstanding,” 18.5% as “satisfactory.”

**Self Evaluation of Performance (%)**

Category	ROs	PENROs	CENROs	ENROs
Outstanding	9.3	9.1	4.8	0
Very Satisfactory	68.5	78.8	73.0	61.1
Satisfactory	18.5	12.1	20.6	38.9
Fair	0	0	0	0
Poor	0	0	0	0

Source: JICA Study Team

All respondents at the regional offices say their roles, responsibilities and targets are clearly defined and communicated, and 9.5 % of respondents feel that their qualifications are too high in comparison to their designated work.

#### (2) PENROs

Most of the respondents at the PENROs assessed time management, setting goals and standards, and delivering clear information were evaluated as quite good. However, particular competencies as getting unbiased information and training, coaching and delegating, and disciplining and consulting are recognized to be relatively weaker compared to other areas. Except one respondent, they say that they have a clear understanding of their responsibilities, and roles and responsibilities match with their qualification. They said their performance in relation to their target and responsibility is outstanding to satisfactory. This result is observed in the respondents at CENRO and ENRO as well.

#### (3) CENROs

Most respondents at the CENRO level are confident of their generic competencies particularly in the areas of delivering clear information and making decisions. The competencies of time management and setting of goals and standards are also well developed according to the respondents. On the other hand, some respondents are not so satisfied with their competencies in getting unbiased information, training, coaching and delegating, disciplining & consulting, identifying and solving problems, and think clearly and analytically. One respondent said his/her job is not clearly defined or communicated.

(4) FMSD

The result of the self-assessment of generic competence by FMSD workers is very similar to the results of PENROs and CENROs. Except one forester who has been working in the current position for 5 months, all respondents mention that they have good communication with their supervisors and understand their roles and responsibility clearly. They think their capabilities and assigned responsibilities/roles match just right.

(5) Personnel in Charge of CBFMP

The respondents seem to have lower confidence in getting unbiased information and training, coaching and delegating, and they are satisfied with their performance. One respondent said his/her roles and responsibility is not clearly defined or communicated, and two respondents expressed that their responsibilities and targets are too difficult compared to their qualifications.

(6) ENRO-LGU

Most workers are satisfied with their competencies and evaluated as “satisfactory” in most areas. However, their self-evaluation on their performances is relatively low as shown in the table above. One respondent recognizes the gap between actual duties and assigned position as one of the constraints, while others point out the lack of training of fellow workers as a construct to better performance.

### **3.3.4 Constraints in Appropriate Performance**

(1) Regional Offices

Approximately a half of respondents at the regional offices pointed out that the inadequate financial resources are the major constraints in improving their performances at work. The respondents emphasized the lack of fund for financial compensations for employees in the office as a major problem, though many others also mentioned that the funds for program implementation are a significant constraint. A few respondents mentioned the lack of physical facilities, as laboratory equipment and logistic means as the major problems, but more respondents pointed out the improper working environment as lack of updated computers, photocopiers, spaces and air conditioners. Approximately a quarter of respondents expressed that the inadequate human resources, both quantity and quality is a major constraint in their offices. A few respondents also pointed out that the improper inter-personal relationship is also a constraint for them to perform better.

(2) PENROs

As in the case of two regional offices, officers pointed out a number of problems and constraints in the improvement of their performances in spite of their high self-evaluation of their performance and competencies described in the previous section. The major constraint for the respondents at PENROs to improve their performance is the lack of financial resources for the operation as well as for the purchase of necessary equipment and facilities. The shortage of vehicles and expenses for fieldwork as well as obsolete

computer facilities are serious problems for the offices. In relation to this, lack of physical facilities and equipment is another main constraint. In addition to those issues, many respondents feel that they have limited manpower and human resources in terms of quantity and quality. Some staff members identify heavy workload, time limitation, and lack of training, which could be both causes and effects of limited human resources. Personal attitude of fellow staffs, such as low motivation and commitment, as well as human relationship among co-employees are another matters for some respondents.

A few respondents pointed out the issue of low salary and incentive pay as a personal constraint, though some respondents consider low salary/allowances as well as lack of fair promotion system as one of the critical problems the office to serve the public.

### (3) CENROs

While inadequate funds, delay of fund release, lack of equipment and facilities are regarded as major issues, more CENRO staff members identify the lack of training for technical skills as their major problem for better performance comparing the survey result at regional offices and PENROs. The survey result implies that the lack of training at the CENRO level has greater negative impact on their services.

The shortage of manpower is also pointed out by a number of respondents. Low allowance for fieldwork and unequal and unclear promotion system are other issues limiting workers' personal performances, according to a number of respondents. Certain organizational characteristics, such as concentration of authority at higher level of organization, inadequate support of the superiors, as well as frequent shifting of policies at the higher level, are considered by several workers to be the major constraints. A few respondents pointed out the centralized bureaucracy and corruption as problems.

### (4) FMSD

The personal constraints pointed out by the officials at FMSD are particularly concentrated on financial and physical constraints. A few respondents mentioned poor attitudes and management style, human relationship with co-workers, and insufficient support from superiors as commonly recognized constraints. Some officials said that their dual duties, unclear direction and political interference also impede their performances. The survey result implies that the inadequate financial and physical resources are particularly serious at FMSD.

### (5) Personnel in Charge of CBFMP

Respondents revealed that financial constraints are the most critical ones. About 18.5 % of respondents pointed out the lack of manpower, while some of the CBFMP personnel shoulder dual functions and hold excessive numbers and sizes of CBFM area. Many respondents said the lack of equipment and transportation facilities or logistics are the key constraints in improving their performances in general. 15 % of respondents mentioned the lack of promotion as a constraint, and also 15 % of respondents expressed inadequate number of training is the problem.

## (6) ENRO-LGU

For respondents at the ENRO, the survey result indicates that managerial and structural problems are more severe at ENRO-LGU. The major personal constraints are the poor personnel management of provincial administrators (PAs), inadequate support and lack of knowledge of supervisors. The constraints of low salary, inadequate allowance, difficulty of getting promotion are mentioned during the survey. Lack of leadership is also pointed out as a part of management deficiency. Some respondents recognize the dual/triple duties, having extra responsibilities in addition to regular responsibilities as constraints.

These results imply the inappropriate allocation of human resources and improper distribution of duties and responsibilities at ENRO. Many ENRO officials complain that their expertise is not effectively utilized because LGUs are disinterested in environmental issues and more interested infrastructure development. Most ENRO officials with whom the Study Team informally interacted expressed their frustration in doing non-forestry work since they transferred to an ENRO from DENR after the devolution.

A survey respondent expressed the institutional culture of LGUs being different from line agencies and organizations. The policies and programs seem to be more inconsistent and sporadic than it is at DENR and greatly affected by the political environment.

### **3.3.5 Strategic Needs**

#### (1) Regional Offices

Based on the survey at two regional offices, the improvement of compensation for employees is the highest priority for overcoming of the constraints pointed out previously. This strategic need, unlike the cases of other offices as explained later, is in line with the constraints. The second prioritized strategic needs at the two regional offices are better financial status for operation and the improvement of human resources. For the specific needs for operations, various recommendations are made during the survey, and some of the examples are: 1) better information systems (e.g., updated computers) and working environment (e.g., air conditioners), 2) improved reporting, 3) more training and technology transfer, 4) more qualified officials and lawyers, 5) better planning skills/funds and formulation of master plans, and 6) provision of survey equipment. Managerial strategies as clarifying vision, mission and objectives of their office or enhancing monitoring and evaluation systems earned lower priority.

#### (2) PENROs

While many respondents stated that the inadequate financial and physical resources are the major constraints for their improved performance described in the previous section, the majority of respondents distinguished the human resource management as the most critical area to be developed in order to provide more effective public services, more specifically the mobilization of physical facilities, information dissemination and Information, Education, and Communication (IEC). The technical and managerial improvement in each service is expressed as important strategy. Improving compensation of employees and enhancing information system are strongly emphasized, though the strengthening of financial status for operation and clarifying vision and objectives of the



office were also pointed out. They seem to recognize the importance of the philosophical and psychological foundation of the office, such as the consistent office policy and unity and cooperation of the office as a team. Improving physical facilities, enhancing monitoring and evaluation system and the effectiveness of extension services are considered less important. The reason of seeming discrepancy between the constraints and solutions is not known.

### (3) CENROs

For the respondents at CENROs, the improvement of compensation for employees comes as the top of priority to strategically solve performance constraints. Improving human resources, financial status for operation and physical facilities and equipment follow respectively. The clarification of visions and objectives of the office is put at a modest priority. It is significant that greater number of officials at CENROs is concerned about the attitude and moral standards of office mates than it is at PENROs. Better management style and the accountability of the office are also emphasized.

### (4) FMSD

More respondents identified improving human resources as the first strategy to improve capability of their offices, as suggested in the case of PENRO. The technical improvement of each official is emphasized as a strategy for better performance, which again is not in line with his or her explanation of inadequate financial and physical resources as the most crucial constraint. Improved compensation for the staff members is regarded as the second best strategy although many people did not identify the compensation issue. Improving financial status for operation, enhancing information system and clarifying vision and objective of the office, and improving physical facilities and equipment follow, respectively. There is less interest of FMSD staff in more effective extension services or monitoring and evaluation system.

It is important to note that more than half of respondents at FMSD pointed out that better attitude, moral, commitment, leadership and supervision, unity and cooperativeness as a team are critical for better performance of their offices. Some respondents also suggested the improvement of job descriptions, clear duties and consistency of policy. About one third of respondents were concerned about the status of facilities of the division. They said that sufficient number of vehicles for fieldwork is particularly important for FMSD. Areas as training and information dissemination including IEC were also pointed out by a number of respondents.

### (5) Personnel in Charge of CBFMP

With regards to the strategic needs, improving human resources is the top priority for the respondents assigned in CBFM Program. Second priority is better financial status for operation. Next is improving compensation for employees. Those who expressed the dual duty of CBFM officers mentioned need for the additional personnel for the program.

(6) ENRO-LGU

Improvement of human resources and extension service effectiveness are regarded as the first priorities among various strategies. The majority of respondents identify the improvement of technical knowledge and skills as essential for human resource development. General project management skills, such as planning, monitoring and evaluation, information management and other logistical management skills are also emphasized as well. One respondent mentioned the definition of function and duties of CDA in ENRO. These suggestions correspond to their statement of existence of managerial and organizational constraints at their offices.

Although the personal compensation for employees as a constraint was not strongly emphasized, it became one of the highly prioritized areas for improvement. Clarifying visions and objectives of the office and enhancing information system are the next priorities.

### **3.3.6 Training Needs**

(1) Regional Offices

Respondents at the regional offices are interested in technical training on GIS, computer skills, various planning techniques and forest /watershed management (e.g., forest fire control, pest and disease control, soil and water conservation techniques, toxic management). Some mentioned that training on legal issues, training of trainers and managerial skills are important. Since the majority of respondents worked in the office for more than 10 years, knowledge updating and skills upgrading have a high priority.

Respondents prefer on-the-job training, conventional workshop/courses and formal education. Open learning, exchange program, and advice by phone are less attractive for them. March to May and September and October are recognized as convenient periods for the training.

(2) PENROs

Many respondents at PENROs are interested in training on the technical advancement in GPS and GIS and updated information on new guidelines, policies, laws and regulations in forest/land management including recent developments in forestry and watershed management. Some foresters and administrative staff asked for training on computer and management skills. Some higher officials identified the need for advanced supervisory courses.

Respondents prefer on-the-job training, conventional workshop/courses and formal education. April and May are recognized as convenient periods for the training by more than half of PENRO respondents.

(3) CENROs

CENRO respondents identified technical training as the highest priority. The need for computer training was also considered important. Training needs for administration and

related management area including the management of human resources and office budget were also pointed out by a number of respondents. Value and legal orientation and supervisory training such as Junior Executive Training (JET) were identified as needed.

Majority of respondents considered on-the-job training as the best method for them. At the same time, many respondents prefer formal education and conventional workshop/courses. Many respondents perceived that February to May is the convenient period for training.

#### (4) FMSD

In addition to technical managerial training, computer skills were rated relatively high at FMSD. The majority of FMSD workers recognized that the benefit of training is mainly technical improvement through acquired skills and knowledge. This explains workers' strong interests in technical aspect of services. Many respondents also recognized the strengthening of motivation and self-confidence as secondary purpose of training. More than 3/4 of FMSD respondents hardly recognized the importance of training in gaining financial compensation and prestige.

Almost half of respondents selected on-the-job training as the best method. January to May seems to be the most convenient period for FMSD officials.

#### (5) Personnel in Charge of CBFMP

Most of respondents at CBFM units are interested in training on GPS, GIS and computer programming operations. Others are interested in training on monitoring, assessment and evaluation, planning on forest resource management, technology transfer, livelihood enterprise, agroforestry technology, community organizing, land use planning, and moral recovery program. The officers at CBFM unit are interested not only in training related to CBFMP but forestry in general. This implies that they do not consider CBFM as their career paths within the agencies. Some officers at DENR informally expressed their distress in being at CBFM unit because "we have the greatest risks of being devolved to the local government."

January to March is the most convenient time for training for CBFM Unit personnel.

#### (1) ENRO-LGU

Various technical skills training in forestry, natural resource and environmental management (including GIS and GPS) and other service-related areas are the major needs of respondents at ENRO-LGU. Also, skills in project management in general, including planning, monitoring and evaluation have high priority. A few respondents need team building, values formation, executive training and training on gender and development.

Almost half of the respondents prefer on-the-job training. They also prefer conventional workshop and courses and formal education for their training methods. More than half of the respondents suggested that March to May, June to August would be the most convenient time for training.

## CHAPTER 4 PROBLEMS AND IMPLICATIONS

### 4.1 Socio-Cultural Constraints

#### 4.1.1 Inadequate Population Control and Migration Management

The population in the upland communities has been rapidly increasing since the 1960s, and the constant population growth has been the major cause of environmental destruction in the area. The government has been promoting the family planning and other population controls measures, but the success is limited to an extent to which the demand for the conversion of forest area into farmland remains exceedingly high.

The population growth is accelerated by migration. Migration in the area, or in the country as a whole, is not managed by the government strategically so far. The lack of policy, regulation and programs to manage the migration has been giving negative impacts on the natural environment the Study Area.

#### 4.1.2 Ineffective Natural Resource Management Mechanisms at a Community Level

At a community level, systematic mechanisms or organized actions to manage natural resources have been inadequate at best, almost non-existing in some communities. Natural resources are utilized and maintained arbitrary by individual villagers without established policy, regulation, ordinance or managing authorities. Even in the case of Ifugao province, the *Muyong* system whereby clans traditionally regulate the use and maintenance of their forest resources is facing a gradual disappearance due to the development and modernization of communities. POs are yet to become an effective vehicle for natural resource management.

#### 4.1.3 Gaps among Socio-Economic Classes and Gender Groups

It has been a common mistake made by external aid organizations and government agencies to assume that a community and POs are homogeneous. In fact, as the Workshop revealed, communities are composed of members from different socio-economic classes and gender groups. Various patterns of use, consumption and management of natural resources are observed among the different socio-economic classes and groups. Because of this, a project/program would have different impacts and implications for different classes and groups, which usually reinforce the inequality among the population.

The CBFM Program could aggravate the domination of men over the natural resources because it provides the land management rights to a PO that is branched out from the male-dominant social system. The ISF Program, for instance, required both male and female members of a family to be the co-stewards under CSC, which now is integrated into the CBFM Program that does not require women to be a part of a PO. Women would have less authority and control over the natural resources under the CBFM than ISF Program.

#### **4.1.4 Emergence of Local Conflicts**

The Workshop revealed the existence of extremely delicate, controversial conflicts within communities. Many conflicts are political or ethnic in nature, which have been bringing about physical violence in some instances. External initiatives, including DENR programs often aggravated the conflicts and tribal complications within the communities and affected greatly by the violent actions as setting fire on the reforested areas. The conflicts are persistent and have long histories in some cases. The conflicts are often difficult to recognize or understand by outsiders, hence challenging for outsiders to deal with.

#### **4.1.5 Limited Linkage between External Society and Community**

Some communities within the Study Area, particularly those remote villages, are isolated from the external societies. Programs/projects of government agencies are rarely introduced to those communities, and their linkage to the market is extremely limited. Some communities are quasi self-reliant with slim possibilities for progress or advancement. Resources and information are hard to come by, and their economy is literally stagnant. People in such villages have no resources, skills or time to organize themselves and establish appropriate linkage with external societies.

### **4.2 Constraints pertaining to POs and NGOs**

#### **4.2.1 Lack of Transparency and Communication among Leaders and Members**

There are a number of CBFMA and non-CBFMA POs whereby the monitoring functions do not run effectively due to the deficiencies in organizational structure and lack of understanding of the flow of information and reporting, allocation of accountability, distribution of tasks and responsibilities among leaders and members. The problem is attributed from inadequate support from external agencies and organizations and lack of projects and activities through which leaders and members can practice the established organizational structure. The Board of Directors and General Assembly are not given proper decision-making power and monitoring authority in many POs, and executive body of organization is yet to be established in some POs.

As a result, the transparency of PO is prone to become low, which allow corruptive operations to take place. The inadequate quality of management staff members and abuse of power and authorities by leaders also affect the transparency of POs. Through the survey, the Study Team discovered that a number of POs with and without CBFMA had experienced mismanagement of funds, corruptions, unfair distribution of benefits, abuse of power and monopolization of organizational possessions.

These mismanagement and misconduct are both the effect of improper communication among leaders and members. Many POs face sectionalism within the organization, and the organization is divided into small factions led by certain leaders. This is aggravated when there is an existing tribal and political conflict within the community. The sectionalism impedes effective communication among leaders and members, which reinforces the lack of transparency within POs.

#### **4.2.2 Inadequate Human Resources of POs**

In general, the leaders and members of POs with and without CBFMA have low levels of educational attainment. In villages, it is generally difficult to find people who are qualified for PO management with sufficient numerical ability, technical and office management skills and generic competencies as punctuality, analytical thinking and systematic working attitude. The recruitment of qualified officers and members is difficult since POs do not have sufficient resources for the compensations for officers and members or do not offer adequate services to members.

In addition, both technical and managerial training for PO leaders and members are inadequate in numbers, and even if training and orientations are offered to POs, the learned skills, knowledge and information are not shared with other leaders and members who are unable to attend the training or orientations. Further, learned skills and knowledge often cannot be practiced due to the lack of projects and activities of POs. Officers and members easily forgot learned skills and knowledge when these are not practiced. As a result, the quality of human resources at POs is generally poor. POs struggle in the enhancement of their operational efficiency and effectiveness with the inadequate human resources.

#### **4.2.3 Poor Participation among PO Members**

In spite of the intention of the CBFM Program, the majority of members of POs with CBFMA do not feel incentives in the provision of land management rights and tenure instruments for renewable 25 years. POs generally fail to establish programs as micro credit services, provision of dividends, patronage refund, market information, training and education, buy and sell of farm supplies and commodity goods, livelihood development and rental service of farm equipment/facilities that would be incentives for members. The external agencies and organizations, particularly DENR do not have adequate human resources, know-how, previous experiences or financial resources to assist in the establishment of these services necessary for viable PO operations. As a result, POs have difficulty in generating motivation of members to participate in PO activities.

Inadequate incentives also resulted in poor outcomes of membership recruitment. POs would meet a great challenge in sustaining the organizations with the limited number of members who pay share capital and fees as membership fee, annual fees and fees for various services. The soundness of financial status heavily depends on the membership recruitment, and the provision of incentives is critical for the successful recruitment.

#### **4.2.4 Inadequate Physical and Financial Viability of POs**

Most POs with and without CBFMA do not have the minimum physical and financial resource necessary for operations. Most POs do not have offices or office equipment. Financial status of most POs is below the survival level. Except a few established cooperatives, POs do not have any monetary resources for regular activities and just wait for an external organization to bring a project. This type of POs is so called “an event PO” that becomes active only when they have an ad hoc project.

The devastating physical and financial status of POs not only fails to provide appropriate resources needed for operations, but also frustrates members. Members cannot develop hope and expectations towards their POs psychologically and stop supporting the organization. Without a mental focal point as an office, a PO will fail to develop devotion and commitment of leaders and members towards PO activities.

#### **4.2.5 Improper NGO activities**

NGOs in the Study Area are not different from consulting companies in the viewpoint of them heavily depending on the funding through a contract with the public agencies and foreign donors. Also, it is not clear whether NGOs are really non-profit base or not. NGOs are prone to become a means for professionals in the area to generate their income. In fact, many NGO staff members in the Study Area work as consultants in their spare time.

Under such circumstances, NGOs tend to disregard their mission to serve for the public. Instead, some of them, mostly without bad intentions, obtain resources that are supposed to be given to local people and hinder public services as a result. Despite the generally well-developed management capabilities of NGOs in the Study Area, many previous NGO initiatives failed to produce desirable outcomes.

#### **4.2.6 Lack of Resources at Local DENR and LGUs to Support PO Development**

According to the result of Training Needs Analysis (TNA) conducted at concerned regional offices, PENROs, CENROs and ENROs-LGU, the DENR local officials think that financial and physical resources are in short. Those offices do not have sufficient funds for operations and fail to provide appropriate compensations to employees on time. The offices do not have proper facilities and equipment, such as an air-conditioned office, vehicles, updated computers and technical equipment needed for area surveys, mapping and designing. The lack of monetary and physical resources impedes those offices to execute their work effectively and efficiently.

#### **4.2.7 Improper Qualifications of Community Organizers at DENR and LGUs**

Officers assigned to CBFM Program, including CDOs (Community Development Officers) and CDAs (Community Development Assistants) at local DENR offices and LGUs do not have an adequate educational background. Most of them are foresters with forestry-related academic backgrounds and advanced degrees and do not have a degree in Rural Development, Management, Education, Sociology or Anthropology. Most of them underwent training on community organizing but are not skillful or knowledgeable in the area of PO development. They have no previous experiences or study in the establishment of PO with an appropriate organizational structure, micro credit services, provision of dividends, patronage refund, market information, training and education, buy and sell of farm supplies and commodity goods and rental services of farm equipment/facilities, all of which are indispensable for the development and sustainability of POs. DENR as a whole does not have sufficient specialists who have both academic and practical background in PO development.

#### **4.2.8 Inappropriate Organizational Structure of LGU to Support PO Development**

The devolved functions of DENR at LGUs, ENRO (Nueva Vizcaya and Isabela), PAENRO (Ifugao) or PNREO (Quirino) still struggle to define their roles and responsibilities. A number of respondents of TNA at ENRO-LGUs pointed out that LGUs are disinterested in environmental issues, and their assignments are not for “environment and natural resource officers” but rather laborers for the LGU operations. They feel that their expertise is not utilized efficiently, and the management of ENRO-LGUs is poor. A number of respondents state that they do not receive adequate managerial and financial support from higher officials and elected officials at LGUs. Due to these structural and managerial problems, ENRO-LGUs fail to function effectively and efficiently as a local environment and natural resource office.

#### **4.2.9 Inadequate Human Resources at DENR and LGUs to Support PO Development**

Aside from the lack of physical and financial resources, the respondents of survey mentioned that the quality and quantity of human resources at their offices are inadequate<sup>29</sup>. Even though their generic competencies and quality of performance are assessed very satisfactory in their self-evaluation during TNA, many respondents stated that the levels of skills and knowledge of their fellow officials are not high enough, especially in the areas of latest technology as GIS or GPS, computer operation, planning and management and extension work.

#### **4.2.10 Possible Discrepancy between Village Ordinances and National Legislations**

As revealed during the Workshop, there is a trend among village governments to establish local ordinances and policies to control and manage natural resources within their communities. The legislative power of LGUs over the natural resources are ensured by the Local Government Codes, and LGUs shall implement and enforce the national forestry laws and regulations. However, their ordinances would not be in line with the national forestry laws and regulations in practice. Village governments sometimes do not consult with DENR with regards to village ordinances, and as a result, national and local legislations would contradict each other.

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<sup>29</sup> However, their self-evaluation of their competencies and performance was very high, which contradicts with their evaluation of fellow officers.



## **CHAPTER 5 COST ESTIMATE**

### **5.1 General Conditions of the Estimate**

All activities were to be implemented from 2004 to 2015. Unit price that was employed in this M/P was from the price used for the cost estimate for the projects implemented in 2000. This cost estimate does not include supplementary cost for the price escalation.

Target areas for the implementation of Master Plan are 408 barangays, including 112 barangays that are target for the rehabilitation work and 296 barangays that are not subject to rehabilitation but have Forestland and Protected Areas that is larger than 20% of size of the barangay. Community organizing and PO formation include the activities described below, and all the activities should be assisted by assisting organizations.

### **5.2 Establishment of the Unit Price for the Cost Estimate**

Unit prices for community organizing, PO formation and participatory planning was indicated in MC 97-03 that was specifically formulated for the Forestry Sector Project funded by JBIC. Due to the Pilot Study, more detailed unit cost was studied and adopted for the estimation.

The cost for community-based enterprise development must be estimated based on the scales and kinds of enterprises to be established. To determine the scales and kinds, elaborate production/market researches of all target communities are required. Since there is no such study available, the indicative cost of community-based enterprise development was estimated as 100,000 pesos for direct initial investment per community and 8% of direct investment (8,000 pesos) per community for administrative cost of contractors (POs).

For the PO capacity building, the cost was estimated as an assisting organization (contractor) to cover 7 communities that are subject to rehabilitation since an NGO targeted 7 communities (target communities were 6, but Dapiz had 2 sub-associations) during the Pilot Project. The total AOs will be 16 (112 divided by 7). For the non-rehabilitation communities, a specialist will be assigned to each sub-watershed (133).

### **5.3 Cost Breakdown for Unit Costs**

The cost breakdowns for unit costs of the following which are given in Appendix 8.

- i) Cost for Community Organizing and PO Formation
- ii) Cost for Participatory Planning
- iii) Cost for Community-Based Enterprise Development
- iv) Cost for PO Capacity Building

## *Tables*

**Table 3.1 Tribal Group Inventory within the Study Area, 2001**

1) Nueva Vizcaya	
<b>Name of Tribe</b>	Kalanguya
<b>Population &amp; Household</b>	130 households = 666 Population
<b>Settlement Area</b>	Cabanglasan, Kayapa, Nueva Vizcaya
<b>History of Settlement</b>	Since the Spanish Time, only a few settled in this place. It is one of the hunting grounds of wild animals like deer and wild pigs. The hunters discovered a bad odor of water coming from the top of the mountain. The Kalanguyas term for this odor is Caman, Cabangles or Cabanglesan. This is how Barangay Cabanglasan got its name. The Kala-tribe settled there because of its fertile soil.
<b>Agricultural Practices</b>	Their agricultural practice is Kaingin system and later on during the American colonization, they learned how to develop their farmland into a rice field.
<b>Livelihood Activities</b>	Animal raising, piggery, poultry and up to this time the Kalanguyas engaged in Vegetable Production as their means of livelihood. Also some engage in mango production.
<b>Social Hierarchy</b>	Kadangayan, Ap-apo (leader), Mabaki
<b>Gender Relation</b>	Both man and woman work together but still man is the head of the family, as regard to the rule of man and woman in the family.
<b>Language</b>	Kalanguya, Ibaloi, Ilocano, Tagalog, and little English.
<b>Inherit Traditions</b>	Cultural dance (Tayaw), cultural belief (Kabunian), Caniao, Parent's engagement (Kaising), Cultural music (Gangha, solibao, Co-ling, Galdang, Pagkong)
<b>Tribal Conflicts</b>	They have boundary dispute, during Spanish Time. Sometimes Kalanguyas practice head hunting but they learned that the banana blossoms could be used of the tops of the Tibanglan/firn to be made as a head when their traditional caniao comes.
<b>Cultural Practices</b>	Cultural attire, hospitality, courtship and settlement conflicts.
<b>Interaction with NR</b>	Preservation of forestland, watershed, pollution controls.
<b>Others</b>	Generally, Kalanguyas are of medium built, fair complexion, and hardworking people.
Source: NCIP Nueva Vizcaya, 2001	
<b>Name of Tribe</b>	Kalanguya and Ibaloi
<b>Population &amp; Household</b>	121 households = 706 population
<b>Settlement Area</b>	Pallas, Bambang, Nueva Vizcaya
<b>History of Settlement</b>	The Kalanguyas lived in mountainous areas where there is a presence of streams and creeks used for irrigation purposes. The land is important to them to till, to be planted with upland rice and vegetables for their year-round provision.
<b>Agricultural Practices</b>	With the recent innovations in agriculture, farming is already a mix of modern agricultural techniques. Fertilizers, sprayers and other farm equipment are of use. Technologies were introduced by the Department of Agriculture to maximize agricultural production.
<b>Livelihood Activities</b>	Upland farming, gardening and raising of animals are their sources of income. Non-farming such as teaching, driving and carpentry involved only 15 persons.

<b>Social Hierarchy</b>	The Council of Elders/Tribal Council is duly recognized and respected by the community especially in resolving intra-tribal conflicts. The Tribal Council is the legal representative to the Local Special Bodies and in the Provincial Level.
<b>Gender Relation</b>	The male is basically the breadwinner and the head of the family. He gives due regards to the female as the housekeeper through after her household chores she can help in the clearing of farmlots/swiddenland ready for planting.
<b>Language</b>	Kalanguya, Ibaloi, and Ilocano.
<b>Inherit Traditions</b>	The caniao is still practiced up to this time especially during burials and other important rituals such as “healing of the sick” performed by the “mambunong”.
<b>Tribal Conflicts</b>	In case of intra-tribal conflicts, the persons involved together with the council of elders gather in one venue to settle the problem/conflict. After the conflict is resolved, the accused party will be penalized in kind like butchering of pigs for them to eat.
<b>Cultural Practices</b>	The weaving of ethnic costumes is one special occasion; songs and dances were performed only during rituals. Gong playing is performed by male experts.
<b>Interaction with NR</b>	The Kalanguyas are “environmentalists” giving due respect to mother nature. Protection and conservation of the natural resources is one of their concern specially, they are living in the hinterlands where their livelihood is.
<b>Others</b>	The Kalanguyas are industrious in nature. They are peace-loving people. The male is of medium built likewise with the female. They possess fair complexion.

Source: NCIP Nueva Vizcaya, 2001

<b>Name of Tribe</b>	Isinay
<b>Population &amp; Household</b>	2,616 households = 18,000 population
<b>Settlement Area</b>	Banggot, Buag, Magsaysay Hill, San Leonardo, Mabuslo, Dopaj, Sta. Maria, Balzain, Domang, Mangayang, Gabut, Bagumbayan, Palabutan, Belance, Banila, Carolotan,
<b>History of Settlement</b>	These Isinays are the main residents of the place since birth and others are migrants but stayed in the place for more than 50 years. Isinays are the original tribe/indigenous peoples of Bambang, intermarried with other migrant tribes and non-tribes.
<b>Agricultural Practices</b>	Traditional & modern technique in agriculture is adapted. Carabao is used in tilling the land like tractor. Farm inputs such as sprayer, water hose and fertilizers are commonly used in the care and maintenance of their plants. Thresher and other post-harvest facilities are also used.
<b>Livelihood Activities</b>	Farming is the main source of income to those who have farmlands. Blue-collar jobs like carpentry, driving, caretaking, buy and sell, barber and white-collar jobs like teaching, clerical jobs and even supervisory jobs are also their other sources of livelihood. Gardening and other small industries such as piggery are also among their other sources of family income. Others send their children to be domestic helpers in far countries.

<b>Social Hierarchy</b>	<p>Council of Elders by clan is still maintained especially during conflicts and problems arising in the family.</p> <p>The Barangay Council is the head of the community who sees what is going on in the place. Problems or conflicts are referred to the barangay captain for any peaceful settlement of the conflict. Other organizations that are found or established in the barangay have to coordinate with the barangay council. Most of the residents cooperate with what the barangay imposes.</p>
<b>Gender Relation</b>	<p>Man has the responsibility of providing the needs of his family. But nowadays the woman shares with the responsibility.</p>
<b>Language</b>	<p>Isinai, Ilocano, Tagalog, English and other dialect are spoken in the family or in the community. Isinai is the common dialect of communication.</p>
<b>Inherit Traditions</b>	<p>Sick person – an elder is called upon to make the prayer with the presence of the family.</p> <p>Marriage-parents and relatives are usually involved in the success of wedding from the beginning to the end of the celebration.</p> <p>Death-number of days are observed: the 9<sup>th</sup>, 18<sup>th</sup>, 27<sup>th</sup> and 40 days</p> <p>House blessing – Rituals and animal offering is done.</p>
<b>Tribal Conflicts</b>	<p>There are no tribal conflict practices in the Isinays only misunderstandings settled within the involved family. Isinays are peace-loving people.</p>
<b>Cultural Practices</b>	<p>Respect to elders is observed.</p>
<b>Interaction with NR</b>	<p>They have knowledge in protecting &amp; conserving the forest and its natural resources.</p>
<b>Others</b>	<p>Isinays are of medium built with fair complexion.</p>
<p>Source: NCIP Nueva Vizcaya, 2001</p>	
<b>Name of Tribe</b>	<p>Bugkalot/Ilongot</p>
<b>Population &amp; Household</b>	<p>2,000 households = approx. 10, 000 population</p>
<b>Settlement Area</b>	<p>Ganao, Kimbutan, Kinabuan, Oyao</p>
<b>History of Settlement</b>	<p>Most of Ilongots live most in the part of the Sierra Madre mountains near the Conwap Casecnan and Abaca Rivers, the mountain areas along the Provincial Boundaries of Isabel, Nueva Vizcaya, Aurora, Quirino and Nueva Ecija.</p>
<b>Agricultural Practices</b>	<p>The Ilongot's economy is basically agricultural. They cultivate rice, corn, camote, gabi, and other plants and root crops. They also engage in fishing and hunting.</p>
<b>Livelihood Activities</b>	<p>They engage in gathering minor forest products like rattan and are usually taken advantage of the lowlanders who buy the rattan at a very low price. They trade forest products such as venison, pork from wild boar, rattan fruits, wax, and honey, for their supply of hunting gears like spears, knives, cut class, iron arrowheads, pots, clothes, salt and other commodities.</p>
<b>Social Hierarchy</b>	<p>The Ilongots band themselves into groups of about eleven (11) or more houses .Each group is called "Alipian" and is headed by a chief called "beganganet" who is assisted by a "macotay". They are chosen for their leadership ability and age. The chief rules for life upon his death, his assistant takes his place. A new assistant is then chosen.</p>
<b>Gender Relation</b>	<p>The father is the head of the family. He provides the security and exercise full control over the family's socio-economic welfare. The mother is the farmer and the housekeeper of the family. She is looked upon as the rice producer and master of swidden cultivation. She cleans the garden and plants rice.</p>
<b>Language</b>	<p>Bugkalot, Tagalog</p>
<b>Inherit Traditions</b>	<p>Hunting of wild animals is carried out up to the present slash and burn of the kaingin as their main source of livelihood.</p>

<b>Tribal Conflicts</b>	Bugkalots are known to be “head hunters”. The real reason for Ilongot bravery is survival and defense of right. This is to average wrongs and injuries committed against them. But then, Bugkalots at present are already civilized. They are already decultured. They discarded some of their Ilongot traditions.
<b>Cultural Practices</b>	The main elements of Ilongot religious beliefs and practices are use of Omens, portents in the future, belief in malevolent spirits and unhelpful ancestor’s spirits. These omens and portents play very important role in the Ilongot’s day-to-day decisions especially in relation to hunting. He must have his own dream before he goes hunting in order to see what he is likely to catch.
<b>Interaction with NR</b>	The Anitos are worshipped at the balete trees where they live. These trees are sacred and children are not allowed to play around these trees. They are not cut. Caves are also sacred as the spirits of the dead lives there.
<b>Others</b>	Ilongots call themselves “Bugkalots”. Some of them resented in the appellation Ilongot. The term “Bugkalot” might mean “people without clothes”. They are generally robust, well shaped, extremely strong, and taller than short with very fine appearance. Their skin is copper brown like that of the Christian native. Both men and women are fond of adorning themselves with colorful trinkets. They grow their hair long which they tie on their back or crown their head with a piece of cloth or handkerchief. Their favorite color is red and everything they wear is predominantly red. Until early 1950’s when coming to trade with Christians on low lands, they wore their traditional attire. These days however, they are already decultured.
Source: NCIP Nueva Vizcaya, 2001	
<b>Name of Tribe</b>	Gaddang
<b>Population &amp; Household</b>	4,822 and 874 households
<b>Settlement Area</b>	Sitio Baringin, Magsaysay, Vista Alegre, Sn. Nicolas, Don Tomas Maddela, Bayombong, Bambang, Bagabag, Solano and even distributed to the whole part of Nueva Vizcaya
<b>History of Settlement</b>	From Cordillera Mountain formerly a part of Paracelis, Mt. Province, now Alimag, Kalinga, Apayao. However due to their head hunting, they were forced to move down to the lowlands. They were said to have settled in Bagabag, Solano and Bayombong, Nueva Vizcaya.
<b>Agricultural Practices</b>	Farming is the major source of income. They plant rice and corn as their primary products.
<b>Livelihood Activities</b>	Weaving, poultry and pig raising.
<b>Social Hierarchy</b>	Afu, Ama and elders – they are regarded as the supreme ruler of the community.
<b>Gender Relation</b>	Both sexes mix together in social activities. There is no malice in their relation.
<b>Language</b>	Gaddang
<b>Inherit Traditions</b>	Animistic beliefs, national disaster is read in nature.
<b>Tribal Conflicts</b>	The Gaddangs had a tribal conflicts between the Ifugao who settled earlier in Nueva Vizcaya and also the Isinays.
<b>Cultural Practices</b>	They have a festival dance, courtship dance and dance of offering to gods of the lower world.
<b>Interaction with NR</b>	They indulge with preservation of their remaining natural resources and propagation of plants.

Others	Gaddangs are religious people. They are honest and hospitable. They are artistic and creative.
Source: Mr. Domingo Sison, Elderly, Gaddang, Sn. Nicolas, Bayombong, Nueva Vizcaya, 2001	

## 2) Quirino

<b>Name of Tribe</b>	Ifugao (Ayangan, Ituwali)
<b>Population &amp; Household</b>	1,800 households = 9,000 population
<b>Settlement Area</b>	Nagtipunan = Asaclar, Sn. Dionisio II; Maddela = Cabuaan, Villa Agullana, Jose Ancheta; Aglipay = Alicia, Deodol, Dumabel, Sn. Benigno; Cabarroguis = Tucod, Dingasan, Calaoacan, DBB; Diffun = Ifugao Village, Baguio Village, F. Pagaduan, Campamento, Pimentel
<b>History of Settlement</b>	Migrated from the Cordillera Region to Quirino Province
<b>Agricultural Practices</b>	Upland Farming – They plant vegetables, cereals like rice, corn, including banana and other fruit trees.
<b>Livelihood Activities</b>	Some engage in woodcarving, furniture making and basket weaving.
<b>Social Hierarchy</b>	They reside regular Barangays hence, they are under the LGU, but they have also organized Tribal Councils headed by tribal chieftain.
<b>Gender Relation</b>	Ifugao women work hand in hand with men in the farms, they do equal works especially in cleaning of their farms. Women are more concerned on the rearing of their children, which is very indispensable in their lives as husband and wives.
<b>Language</b>	They speak Ifugao dialect in their homes, but they also speak the Ilocano and Tagalog languages when communicating with other tribes.
<b>Inherit Traditions</b>	Inheritances among the Ifugaos – the parents let their children inherit their properties in accordance with the order of birth, the eldest gets the larger portion followed by the younger ones and finally the youngest one will inherit the residential house of the family.
<b>Tribal Conflicts</b>	There are no major conflicts today but only conflicts between families and individuals regarding boundaries in the farms and lots. Conflicts arise usually because of the desire for revenge in cases of useless killings caused by drunkards or grudges.
<b>Cultural Practices</b>	They respect and recognize their old customs and traditions like Caniao, rituals to cure the sick, harvest times. The spirit of Bayanihan is practiced since time immemorial especially in the construction of houses and farm works.
<b>Interaction with NR</b>	They abide by the rules and regulations governing our natural resources in their respective areas of jurisdiction. They are against illegal logging and fishing although in times of extreme poverty they sometimes if not most of the time violate these laws.

<b>Others</b>	<p>They are adventurous and industrious people trying to strive for a better living. They are peace loving, friendly so long as they are not fooled, abused and exploited or being taken advantage by others.</p> <p>The desire to be educated to them is of primary importance as we can see Ifugaos occupying important positions in the province.</p> <p>They also give more importance to the essential aspect of life, which is the most valuable above all things. This is the belief, trust and confidence in God. This can be observed by the existence of different sects in their areas of jurisdiction.</p>
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Source: NCIP Quirino, 2001

<b>Name of Tribe</b>	Bugkalot
<b>Population &amp; Household</b>	Population = 4,309 Household = 583
<b>Settlement Area</b>	Giayan, Keat, La Conwap, Landingan, Mataddi, San Ramos, Wasid, Matmad, San Dionision II and San Pugo, Nagtipunan, Quirino
<b>History of Settlement</b>	The Bugkalots as these Mountain people call themselves are said to be of Indonesian origin. They inhabited the Southern Sierra Madre and Caraballo mountains since time immemorial, comprising the highlands of Nueva Vizcaya (a big portion of which is now under the Province of Quirino), the northwestern flank of Nueva Vizcaya and northwestern part of Quezon (which is now under the province of Quezon).
<b>Agricultural Practices</b>	Kaingin farming system using the swidden method and corn production.
<b>Livelihood Activities</b>	Small-scale logging and rattan poles gathering. They are engaged in fishing and hunting.
<b>Social Hierarchy</b>	Bugkalot community is headed by Bengangat as their leader/elder and how they are organized as Tribal council with their leader as chieftain.
<b>Gender Relation</b>	The Bugkalot male go hunting and fishing and do other livelihood activities while the women Bugkalot stays in their house to do household chores.
<b>Language</b>	Bugkalot, Tagalog, Ilocano
<b>Inherit Traditions</b>	The Bugkalots mourn their dead for a week. The traditional adherence to one's word of honor (Palabra de Honor) they maintained.
<b>Tribal Conflicts</b>	None. Now they are Christianized.
<b>Cultural Practices</b>	Wedding – The practice of giving dowry by the prospective bridegroom's family.
<b>Interaction with NR</b>	Forest is the framework of entire Bugkalot local economy. From the forest, they get most of their basic needs as well as products for sale in order to generate money. It is also important for them for their hunting grounds.
<b>Others</b>	The Bugkalots are generally robust, well shaped, extremely strong, taller than short, and a fine appearance. The color of their skin is copper brown. They are virtuous people, monogamous and chaste. They live in small village of ten to twenty houses. They are actually friendly, culturally advanced, chivalrous people who fight and kill only to protect their domain.

Source: NCIP Quirino, 2001

<b>Name of Tribe</b>	Agta
<b>Population &amp; Household</b>	Population = 410 Household = 82



<b>Settlement Area</b>	Duriong, Maddela, Quirino Km 18, Dicuraban, Masog, Dunuan and Tiliulan, Nagtipunan, Quirino
<b>History of Settlement</b>	In the 18 <sup>th</sup> century long before the creation of the municipality of Nagtipunan and Maddela, the Agta tribe has inhabited/occupied the eastern bank of Cagayan River up to the Pacific Ocean, which serve as their hunting and fishing ground that made them nomadic in nature.
<b>Agricultural Practices</b>	Kaingin system, banana production
<b>Livelihood Activities</b>	Rattan gathering, fishing, hunting
<b>Social Hierarchy</b>	The Agta community is ruled by a “mengalan” as their elder and how they are organized as tribal council with their leader as chieftain.
<b>Gender Relation</b>	Agta men and women are partners in the gathering of rattan, fishing and other livelihood activities.
<b>Language</b>	Agta, Ilocano, Tagalog
<b>Inherit Traditions</b>	Preserve the forest, rivers and creek for their fishing and hunting ground.
<b>Tribal Conflicts</b>	As of this date, NONE.
<b>Cultural Practices</b>	Courtship – as soon as the young man is attracted to a maiden, he begin to adopt all the means to win the sympathy of both women and men and parents. The young man renders his desired services voluntarily and gives some kind of hunted wildlife and other forest finds. He even offers personal accessories like “manek” and “Biskal” made up of colored rosary-like and colored string for their bracelets and necklaces.
<b>Interaction with NR</b>	The Agta considered the forest as their home and natural habitat which they get their basic needs and other necessities.
<b>Others</b>	The Agtas are locally known Dumagat, Ita, Pugot and Kulot as these mountain people want to call themselves are said to be the Negritos of the mountain, the aborigine of the Philippines. These people usually live near rivers and streams. They are nomadic in nature because of fearing of the dead including his belongings which causes them abandon the dead pit after the burial. Agta live in family group. Each group is bound together by family tree bound of family affection. Agta are Negritos in Luzon settled in the Sierra Madre Mountain.

Source: NCIP Quirino, 2001

<b>Name of Tribe</b>	Ibaloi
<b>Population &amp; Household</b>	Population = 1,509 Households = 326
<b>Settlement Area</b>	Der-an, Guribang, Don Mariano Perez, Diffun Dibibi and Calaoacan, Cabarroguis, Quirino
<b>History of Settlement</b>	Displacement from their lands is the very reason the Ibalois came to Quirino, the construction of the Ambuklao Dam, a government project.
<b>Agricultural Practices</b>	The Ibalois are industrious gardeners. They too have skills in terracing mountainsides, planting it with rice, sweet potatoes, gabi and bananas. Livestock raising too for food and ritual purposes.
<b>Livelihood Activities</b>	
<b>Social Hierarchy</b>	Ibalois have two traditional social classes, the baknang and the abitug. Recently, a middle class emerged which consist of the traders and the wage earners.
<b>Gender Relation</b>	Aside from rearing children, women too, work in the fields.
<b>Language</b>	Aside from their dialect Ibaloi, they too can speak and understand Ilocano, Filipino, and English.

<b>Inherit Traditions</b>	Properties are equally divided among their children.
<b>Tribal Conflicts</b>	There is no conflict among other tribes.
<b>Cultural Practices</b>	<p>Peshit – A prestige feast sponsored by a baknang. It is also a form of economic leveler since it allows the poor to share in the host's surplus wealth especially meat. It is also the Basis of the baknang's power and influence in the village. The Peshit has religious significance since it is held in order to appease the ancestral spirits and gods which cause illness or misfortune of their needs, usually food and clothing are not given by living.</p> <p>Bayjok – “Peshi of the Poor” ritual practice by the poor families when their families were struck by illnesses or misfortune.</p> <p>Kaising – A contract marriage arranged by parents to affirm the friendship between two fathers. Children born out of wedlock are ultimately recognized because the father, when identified, is forced to/into marriage. The child is named after a living grandparents or an ancestor two or three generations back.</p> <p>Mangidin – Called wedding ceremony. It involves the slaughter of a hog which are offered with a prayer by the “mumbanong”(priest). There were singing, dancing and drinking of tapuy. Today traditional customs and beliefs are upheld side by side with contemporary Christian practices. Ibaloi wedding for instance is held in Catholic Church but wedding arrangement between the two families concerned and the wedding reception still follow the Ibaloi tradition.</p>
<b>Interaction with NR</b>	The Ibaloi tribe is nature lovers. In as much that they rely on the natural resources around them for their living subsistence.
<b>Others</b>	The Ibalois are generally of low stature and fair in complexion.
Source: NCIP Quirino, 2001	
<b>Name of Tribe</b>	Kankana-ey (Aplai)
<b>Population &amp; Household</b>	Population = 1,207 Household = 265
<b>Settlement Area</b>	Der-an, Guribang, Cupianan, Rafael Palma, Baguio Village, Dumanisi, Luttuad, Macate, Diffun, Pague, Pedlisan, Maddela
<b>History of Settlement</b>	In the early 1970's, the Bontocs coming from the “ili” composed of Traditional Bontocs started to migrate in Region 02, specifically in Quirino. In those times, Quirino was still a forest-covered province which makes the Bontocs easily adapt with its resources. These traditional Bontocs migrated in such purpose of seeking better pasturelands where in fact the population of Bontocs in their grassroots was fast multiplying.
<b>Agricultural Practices</b>	Rice is the main agricultural product which the Bontocs had, also root crops such as sweet potatoes, cassava, and banana.
<b>Livelihood Activities</b>	Weaving and pottery were practiced in Bontoc but because of lack of resources and financial constraints, these were not practiced and produced anymore in the place where they migrated.
<b>Social Hierarchy</b>	The Kachangyan (rich), Wad-ay ngatsanna (middle class) and Lawa (poor class) classes of families do not apply now in the place where they migrated. They observed equality of standard of living despite on how they uplift their quality of living.
<b>Gender Relation</b>	Practically speaking, even in the past, it is observed that men are the bread winner but as of now, women participate in working for subsistence and not only for household chores.

<b>Language</b>	Adaptability is one of the characteristics of the IP's like Bontoc. They adapted easily with the well-used non-IP's dialects like Ilocano, Tagalog, English but in their houses, their own dialect is used.
<b>Inherit Traditions</b>	The "Intugtukan", called the council of male elders are the ones consulted and make decisions over such community issues.
<b>Tribal Conflicts</b>	
<b>Cultural Practices</b>	Tribunal practices were still practiced in indigenous community where in fact it is more effective and efficient despite of the fact that they have their barangay officials.
<b>Interaction with NR</b>	The Bontoc people are also nature lovers, they believe in "Luta" called environmental spirits that is why they had in some way of preserving our natural resources.
<b>Others</b>	After special occasions like wedding (watwat) a chunk of meat to take home is given to the departing guests and this is still practiced or been observed but because of some constraints, they had taken some innovation just like when a member of the Bontoc tribe got married to a non-IP's, after the marriage ceremony and celebration, the host who belong to the Bontoc family has to butcher native pigs the half of it be given to the non-IP hosts and it will be depending on them on what to do with it. The other half of meat will also be given to their departing guests as "watwat".

Source: NCIP Quirino, 2001

### 3) Ifugao

<b>Name of Tribe</b>	Tuwali
<b>Population &amp; Household</b>	67,668 12,938 households
<b>Settlement Area</b>	Central Ifugao, Hingyon, Hungduan, Kiangan, and lesser part of Banaue and Lagawe, some part of Asipulo
<b>History of Settlement</b>	<p>Aside from the mythological explanation of the origin of the Ifugao, there were three theories profounded by three different scholars/researchers. H. Otley Bayer stated that the Ifugao's ancestors belonged to the first wave of Malays who arrived in the Philippines from the Southeast Asian continent. Many centuries ago. These descendants occupied the area around the Lingayen Gulf. After an indeterminate length of time they moved up following the Agno River through Benguet. Coming up to Bokod they crossed the ridge over the Kayapa area, now a municipality of Nueva Vizcaya. It was there they settled and built rice terraces. Descendants of these people moved north-northeast into Ifugao. They passed through what is now Asipulo, Kiangan and Hingyon and proceeded to Banaue where they started the construction of the first terraces of Ifugao.</p> <p>Keesing's theory, on the other hand, states that the present day Ifugao were former inhabitants of Cagayan long before the arrival of the Spaniards to the Philippines. Fearing the Spanish Soldiers who were subjugating Cagayan and Isabela, people gradually retreated following the Cagayan River upstream. In Isabela, they turned to the mountains in what is now Ifugao and ended their final flight from the Spaniards.</p> <p>The third theory on the origin and migration of the Ifugao to the place bearing their ethnic name is in agreement with Beyer's on one point, i.e. that the Filipino majority's great ancestors came by crude boats to the Philippines from the South-eastern part of the Asian continent. From this point, however, the third theory diverts from Beyer. While the latter indicates the coast of Lingayen Gulf on the Pangasinan side as the probable landing point and first settlement of the earliest Ifugao upon arriving (from their place of origin), the</p>

	<p>third theory points to the La Union Coast as the probable place of landing.</p> <p>From the La Union-Ilocos Sur area descendants of the first Malay settlers moved eastward over the mountain region reaching the central part of the Cordillera, specifically to what is now Western Mountain Province and Northern Benguet. After many years, a number of those in Tadian Kayan and Bauko, after scaling Mt. Data crossed the ridges and descended to Ahin and Wangwang in western Ifugao. Their descendants later spread out, some northward to Hungduan, Banaue and Mayoyao; others to Kiangan, Hingyon, Lagawe and Asipulo.</p>
<b>Agricultural Practices</b>	Upland rice grown in swidden and supplements rice grown in mountainside terrace.
<b>Livelihood Activities</b>	Aside from upland farming and terracing, these tribes are good woodcarvers especially from those coming from Hungduan.
<b>Social Hierarchy</b>	A person with much material wealth needs to undergo a prestige rite term “Uya-uy” in order to attain the rank of “Kadangyan”. The symbol of this bench called “hagabi” that is carved from a large tree usually cut from the communal forest. The person who wishes to be a “kadangyan” may take a sponsor who is called “hummagabi”. Those who have property but did not go through prestige rite are called “Tagu” or middle class. Lower than these are the “hudngor” who have either only a woodlot or rice field. The “nawotwot” have no property and only make a living by working for others.
<b>Gender Relation</b>	Both husband and wife share the burden of rice farming and cultivating their Kaingin areas.
<b>Language</b>	Tuwali
<b>Inherit Traditions</b>	Tuwali tribes perform major ritual so called “Baki” headed by “Mumbaki” (as a priest). They perform three (3) ways of ritual: 1) hongan di page-rice ritual, 2) hongan di kataguan ritual for family well-being and for prestige, 3) other ritual for various purposes other than the 2 mentioned above. The first born child, regardless of sex is the most important offspring and inherits the most valuable of properties from their parents.
<b>Tribal Conflicts</b>	Inter-tribal fightings were resorted to as a last recourse when peaceful means failed in the settlement of disputes. A man fought courageously in a battle and endeavored to bring home a head of his enemy as a proof of his success and bravery in combats.
<b>Cultural Practices</b>	The mumbaki as the cultural repositories of the community, this is the vehicle where oral traditions are passed on the next generation. They have the so-called “ubbu” which is a group work in the rice field. The “baddang” – free community labor rendered for a family during harvest time. The “dang-a” – a free community help extended in putting up a house or granary.
<b>Interaction with NR</b>	It is their traditional practice of preserving forest through “Muyung System”. Forest management among this tribe, there are two basic types the “communal forest”, and the valuable private woodlots. The first type is term as “Inalahan”, the second is called the “Muyung”.
<b>Others</b>	Women wear the “ampuyo” or the native skirt. Men use the “Wanoh” of the G-string. The Tuwali dependent entirely in memory and word of mouth for the development and transmission of their oral tradition.
Source:	<p>“Study of the Traditional Forest Related Knowledge of the Ifugao and Bontoc Ethnic groups in CAR,” The Bagong Pag-asa Foundation, December 2000</p> <p>“Kiangan Ancestral Domain Resource Development Plan,” Kiangan Ancestral Domain Council, 2001</p>

<b>Name of Tribe</b>	Ayangan
<b>Population &amp; Household</b>	46,722 pop. 9,296 HH
<b>Settlement Area</b>	Lamut, Banaue, A. Lista, Aguinaldo, Mayoyao, Asipulo, Kiangan, Lagawe
<b>History of Settlement</b>	Same with Tuwali
<b>Agricultural Practices</b>	Upland rice is grown in an “Uma” swidden or shifting cultivation, and supplements rice grown in mountain side terraces called “payo”.
<b>Livelihood Activities</b>	“Uma” – Kaingin “Payo” – rice terraces – ricefield “Garden” – for vegetable crops
<b>Social Hierarchy</b>	A person with with much material wealth needs to undergo a prestige rite in order to attain the rank of “kadangyan”. Those who have property but did not go through the prestige are called “tagu” or middle class. Lower than these are the “hudngor” who have either only a wood lot or ricefield. The “nawotwot” have no property and only make a living by working for others.
<b>Gender Relation</b>	After the land preparation (this is the kaingin or ricefield) the women is the one responsible in managing e.g. planting, maintenance. During harvest season , men and women helps each other. While the women is doing the rice field and kaingin activities, men are responsible for the household activities like caring for their children, etc.)
<b>Language</b>	Ayangan
<b>Inherit Traditions</b>	The first born child regardless of sex is the most important offspring and inherit the most valuable properties from their parents. The younger offspring receives lesser valuables.
<b>Tribal Conflicts</b>	At present no tribal conflict. Tribal conflict only happens long before. Instead a common dispute arises from illegal gathering of forest products for those who have no woodlot of their own. This was being resolved thru amicable settlement when the suspected party voluntarily accepts the demand of the complainant. Boundary conflict is a more serious issue and is mainly due to unclear or not visible boundary on the ground and intentional removal/transfer of land markers. These are also ownership conflicts when two individuals claim the same former swidden area.
<b>Cultural Practices</b>	The “Baki” as cultural reposition of the community, this is the vehicles where oral traditions are passed. This is headed by “Mumbaki” (priest). Perform three ways of rituals: 1) “hongan chi page”- for rice ritual, 2) “Hongan chi ataguwan”- for family well being and prestige, 3) other rituals for various purposes.
<b>Interaction with NR</b>	This tribe has their own woodlot or termed as “Pinugo”- owned by a family and the “Inalahan”- communal forest.
<b>Others</b>	Women wore “lo-ob” which is the native skirt and “lamma” which is the blouse. For men the wore the “wanoh” the G-string and “Binuhlan”-a piece of loincloth. They usually chew bettlenut and litlit or hapid they term it as “MOMA”
<b>Source:</b>	Ms. Carol Manghi, an Ayangan tribe member “NSO Census 2000”

<b>Name of Tribe</b>	Kalanguya
<b>Population &amp; Household</b>	14,338 pop. 2,465 HH
<b>Settlement Area</b>	All part of Tinoc and Major part of Asipulo
<b>History of Settlement</b>	Same with Tuwali
<b>Agricultural Practices</b>	These tribes are practicing shifting cultivation.
<b>Livelihood Activities</b>	Thru kaingin activities plant sweet potato (kamote), upland rice and gardening. They use to plant vegetables. Prior to harvesting this is after planting, people goes outside the community to look for other source of income to adjacent or nearby towns and provinces and they will come back when harvesting time. They term as “Nibokla”.
<b>Social Hierarchy</b>	These tribes recognize “Elderly people”. These are the one who settle conflict in the community whenever arises.
<b>Gender Relation</b>	It is believed that women have more jobs in term of agricultural practices than men. But by nature, men will be the one to prepare the kaingin and/or rice paddies prior to planting. But after land preparation, the women is responsible for planting crops and even maintenance on the crops planted. Thus, harvesting season, men helps especially on bringing home the harvested crops.
<b>Language Spoken</b>	Dikkalay/Kalanguya
<b>Inherit Traditions</b>	Among these tribes a “Himpamoltan” or ricefield large enough to support the food requirements of a family is inherited together with a parcel of woodlot as a support or called as “unud”. Other kinds of unud are those claimed by wealthy people (kadangyan) such as bronze gongs, necklace and precious jars. In order not to dilute wealth sons or daughters do not sub-divide a rice field with the rice granary (alang or himpamoltan). These properties and unud such as jars and others are intact and inherited mostly by the firstborn child.
<b>Tribal Conflicts</b>	Based on the interviewee “not tribal conflict”. Instead whenever there are commission of crimes like murder, stealing and the like will be settled by the elders in the community thru amicable settlement. They are the one’s to impose such penalties/fines in such a way that the aggravated party will be satisfied.
<b>Cultural Practices</b>	In the olden times, kalanguya people practice parental marriage. The children have no right to object the decision of their parents. If they disobey, they will not be given their inheritance because they were considered stubborn and disrespectful. Their favorite animal is pig. They raise pigs because they are indispensable in almost all occasions like canao, wedding celebration, and sometimes during “tungtungan” – traditional system of settling disputes.
<b>Interaction with NR</b>	Respondents revealed that before, these tribes (kalanguya) are not practicing the so-called muyung system because they move from one place to another within their community especially if tragedy happens in their family. Their main source of livelihood is the kaingin system so they just do kaingin anywhere they want. But at present, they realize that if they have no woodlot, there is no place for them to get lumber for domestic use, because they cannot just get/collect timber from the woodlot of their neighbor. That is why, today they learned now to preserve/conservate woodlot at their own occupation.
<b>Others</b>	In terms of death of their loved ones, they mourn for a minimum of three (3) days up to even 11 days maximum depending on the social status of the family. Every day, they are going to butcher one pig and everybody in the village is invited to eat. They burry their dead within their lot. Sweet potato or camote is their staple food.
<b>Source:</b>	Mr. Antonio Dumannop, Sr, Ex-Board Member, Province of Ifugao “NSO Census 2000”

#### 4) Isabela

<b>Name of Tribe</b>	Ybanag/Itawes
<b>Population &amp; Household</b>	Population = 32,497 Households = 5,897

<b>Settlement Area</b>	Angandanan – Allangigan, Aniog, Baniket, Baui, Bunnay, Calabayan-Minanga, Calaccab, Kalusutan, Canangan, Cumu, Dalikep, Dalinat, Dipaluda, Duroc, Fugaro, Ingud Norte, Ingud Sur, Macalauat, Macaniao, Malannaao, Malasin, Minanga Proper, Patpat, Pissay, Salay, Sinnabaran; Jones – Abulan, Addalam, Arubub, Barangcuag, Dalibubon, Daligan, Dibulan, Dumawing, Fugu, Lacab, Linamanan, Malannit, Minuri, Napaliong, Papan este, papan weste, Payac, Pongpongong.
<b>History of Settlement</b>	“Ybanag” mean people of river for these tribes settled along the bank of Cagayan river and the north east coast of Luzon. They live in villages maintained their trade and security relations with one another.
<b>Agricultural Practices</b>	Lowland farming (rice, corn, peanut, tobacco, vegetable, and legumes) Inter-cropping, mono-cropping, multi-cropping Use of organic and inorganic fertilizer Use of traditional and modern farm implements
<b>Livelihood Activities</b>	Farming Fishing Handicrafts and furniture making Vending
<b>Social Hierarchy</b>	The head of traditional Ybanag/Itawes community was not someone, whose authority was imposed by people. He must grow from their stocks. He must have charisma and honesty, the ability to control or placate the people and the intelligence to discover solutions to the problem of the community. Above all he must be a kin or “karaga” as in the old datu system.
<b>Gender Relation</b>	Couples place great value in their children, as a source of luck for the family, proofs of fathers masculinity, manifestations of riches and form of investment or security.
<b>Language</b>	Ybanag, Ilocano, Tagalog, Itawes During the Spanish Period, the Ybanag language becomes an ecclesiastical language of the Spanish missionaries. It became a prestigious language and the Itawes aspired to learn and speak Ybanag. The process of linguistic adoption made the Ybanags and Itawes literature indistinguishable.
<b>Inherit Traditions</b>	Extension of all forms of assistance so the bereaved family in the death of a kin. Spirit offerings to maintain becoming between the material and spiritual world. Mutual assistance among kin and non-kin living in the same community.
<b>Tribal Conflicts</b>	Land territory disputes Other domestic related problems/violence
<b>Cultural Practices</b>	“Padasal” or prayer offering “Sambali” and “Parosa” for festivities “Mangagakao” ritual to bury the soul of a child who is scared/shocked “Mamakurong” talk for wedding preparations “Magpagala” collection of money, gift to married couples “Harana” lovesongs on serenades Marriage is contracted through parental arrangement “Dalot” marriage rituals for the Itawes.
<b>Interaction with NR</b>	Practice planting trees to water sources for sustainable, potable water and irrigation supply. Practice shifting cultivation to permanent farm lands for sustainable land use.

<b>Others</b>	Strong family ties/kinship system. Cigar-smoking elders Believe in saints who serve as their guardians and intercessors.
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Source: NCIP Isabela, 2001

<b>Name of Tribe</b>	Yogad
<b>Population &amp; Household</b>	Population = 26,093 Household = 5,699
<b>Settlement Area</b>	Echague – Angoluan, Annafunan, Arabiat, Aromin, Babaran, Bacradal, Buneg, Canuiging, Carulay, Castillo, Damang east, Damang west, Gucab, Gumbaoan, Mabbayad, Malibago, San Fabian, Sinabbaran, Silauan Sur, Silauan Norte, Soyug, and Taggapan
<b>History of Settlement</b>	Originally settles along the Cagayan River as small and scattered communities.
<b>Agricultural Practices</b>	Lowland farming (rice, corn, peanut, tobacco, vegetable, and legumes) Inter-cropping, mono-cropping, multiple-cropping Use of organic and inorganic fertilizer Use of traditional and modern farm implements.
<b>Livelihood Activities</b>	Farming Fishing Handicrafts and furniture-making Vending
<b>Social Hierarchy</b>	Elders and educated individuals usually designated as community leaders. Practice of consensus building, encourage people participation.
<b>Gender Relation</b>	Wife/female gender usually stays home for domestic chores. Husband decision prevails at home or patriarchal.
<b>Language</b>	Yogad, Ilocano, Tagalog, and other related tribes dialect.
<b>Inherit Traditions</b>	Amicable settlement of conflicts. High regards and respect to elders.
<b>Tribal Conflicts</b>	Land territory disputes. Other domestic related problem/violence.
<b>Cultural Practices</b>	Practice over belief system in healing (spirit chanting, use of tribal hilot) Festivities celebration (“Canao”)
<b>Interaction with NR</b>	Practices planting trees to water sources for sustainable, potable water and irrigation supply.
<b>Others</b>	Closely knit family relation. Display personal belonging/wealth

Source: NCIP Isabela, 2001

<b>Name of Tribe</b>	Igorot
<b>Population &amp; Household</b>	Population = 4,155 Household = 691
<b>Settlement Area</b>	Cordon – Anonang, Camarao, Caquilingan, Capirpiriwan, Magsaysay, Malapat, Osmena, Quirino, Rizaluna, Roxas, Sagat, San Juan, Tanggal, Taringsing, Turod Sur, Villamarso; Ramon – Ambatali, Bantug, Bugallon Norte, Bugallon Proper, Gen. Aguinaldo, Nagbakalan, Oscariz, Pagrang-ayan, Planas, Purok ti Bulan, Raniag, Villa Beltran’ Echague – Busilelao, Dicaraoyan, Madadamian, San Miguel, Benguet, Diasan



<b>History of Settlement</b>	Migrated in the areas early 1970's and came directly from the Cordillera Region in search of new agricultural lands.
<b>Agricultural Practices</b>	Kaingin system, inter-cropping, terracing, multiple cropping, following use of Organic fertilizer, composting. Fallowing, terracing, drainage ditches, construction of paddies. Develop over Indigenous irrigation system (springs, creeks, rivers) Use of traditional farm implements (hoe, crowbar, harrow and plow)
<b>Livelihood Activities</b>	Upland farming (rice-corn, root crops, legumes and vegetables) Handicrafts (weaving and carving) Vending, masonry, livestock raising, soft broom making Professional (Employed/self employed) Service workers
<b>Social Hierarchy</b>	Family and kinship as basic social organization, people grouping themselves according to customary laws, deciding and acting according to their cultural conviction and ideals. Communal properly is a sign of unity.
<b>Gender Relation</b>	The male dominant, but most often stays home and the female tender the family lots.
<b>Language</b>	Igorot, Ifugao, Ilocano, Tagalog, English and other related dialects. Kankana-ey, Ibaloi, Kalanguya
<b>Inherit Traditions</b>	High regard/respect for elders Practice of festivities Use of customary laws in settling tribal disputes and conflicts Cooperativism (Animal is butchered and distributed as wage for the people)
<b>Tribal Conflicts</b>	Land territory disputes Other domestic related problems/violence
<b>Cultural Practices</b>	Practice over belief system in healing (spirit chanting, use of tribal hilot) Festivities celebration ("Canao") Bury their dead within the limits of their residential lots.
<b>Interaction with NR</b>	Practices planting trees to water sources for sustainable, potable water and irrigation supply. Practices shifting cultivation to permanent farm lands for sustainable land use.
<b>Others</b>	Betel nut chewing Weaving of G-string and other body ornaments.

Source: NCIP Isabela, 2001

<b>Name of Tribe</b>	Ifugao
<b>Population &amp; Household</b>	Population – 15,272 Household – 2,678
<b>Settlement Area</b>	Cordon – Anonang, Taliktik, Aguinaldo, Camarao, Caquilingan, Capirpiriwan, Gayong, Laurel, Magsaysay, Malapat, Magsaysay, Malapat, Osmena, Quezon, Quirino, Rizaluna, Roxas, San Juan, Turod Sur, Turod Norte, Villamarso, Villa Miemban, Wigan Ramon – Bantug, Burgos, Bugallon Norte, San Miguel, Gen. Aguinaldo, Nagbakalan, Oscariz, Planas, Pagrang-ayan, Villa Carmen. Jones – Dicamay I, Dicamay II, Fugu, Sto. Domingo, Linomot San Guillermo – Burgos, Rizal, Colorado, Dietban, Dipacamo, Digidong, Palawan, Nakar, Aringay
<b>History of Settlement</b>	Migrated in the areas early 1970's and came directly from the Cordillera Region in search of new agricultural lands.

<b>Agricultural Practices</b>	1. Kaingin system, inter-cropping, staggered planting, and harvesting. 2. Fallowing, terracing, drainage ditches, construction of paddies. 3. Develop over Indigenous irrigation system (springs, creeks, rivers) 4. Use of traditional farm implements (hoe, crowbar, harrow and plow)
<b>Livelihood Activities</b>	Upland Farming (rice-corn, root crops, legumes and vegetables) Handicrafts (weaving and carving) Vending, masonry, livestock raising, soft broom making Professional (employed/self-employed) Service workers
<b>Social Hierarchy</b>	Opinions of elders prevail in decisions making and kinship is a notable factor in the social structure.
<b>Gender Relation</b>	The male is dominant, but most often stays home and the female tender the family farm lots.
<b>Language</b>	Ifugao, Ilocano, Tagalog, English, and other related tribes dialect.
<b>Inherit Traditions</b>	High regard/respect for elders Practice of festivities Use of customary laws in settling tribal disputes and conflicts.
<b>Tribal Conflicts</b>	Land territory disputes. Other domestic related problems/violence.
<b>Cultural Practices</b>	Practice over belief system in healing (spirit chanting, use of tribal hilot) Festivities celebration (“canao”) Bury their dead within the limits of their residential lots.
<b>Interaction with NR</b>	Practices planting trees to water sources for sustainable, potable water and irrigation supply. Practices shifting cultivation to permanent farm lands for sustainable land use.
<b>Others</b>	Betel nut chewing Weaving of G-string and other body ornaments.

Source: NCIP Isabela, 2001

**Table 3.2 Existing Government Programs and Projects with a PO Development Component**

(1) Community-Based Forest Management Program (CBFMP)

<b>Implementing Agency</b>	DENR
<b>Description of Program/Project</b>	The program is a community-based approach purposely to protect, rehabilitate, develop and manage forestland and coastal resources. Under the program, the local communities in a form of PO will receive management rights and land use permit over the defined state land and shall be supported by DENR, LGUs and NGOs in the preparation of Community Resource Management Framework (CRMF) and Resource Use Plan (RUP) that will serve as a guide in the access, development, use and protection of resources in area currently and eventually utilized and managed by the community.
<b>PO Development Component</b>	The PO development component of program can be divided into 4 stages: 1) Preparation, 2) Diagnostic and PO formulation, 3) Planning, and 4) Implementation. Each stage has its own series of activities to be undertaken. For the preparatory stage, the information campaign and consultation meetings with the local communities and possible project site will be executed. The diagnostic and PO formation, when the community is interested in participating the program, will be executed accordingly in cooperation with the Barangay and Municipal Councils. When the PO is established and registered properly, the application will be submitted to DENR and reviewed by a committee whereat the terms and conditions of the Agreement (CBFMA) is discussed. After attaining the CBFMA, PO then prepares the necessary planning documents during the planning stage. During the implementation stage, PO implements and manages the activities that correspond to their Annual Work Plan while DENR and LGU monitor the implementation.
<b>Major Achievement</b>	The upland communities were given technical instruments on their occupant areas, and preferential access to available assistance for development is improved. Some upland and coastal communities became actors of protecting, rehabilitating and developing forestland and remaining forest/coastal resources.
<b>Constraints</b>	Participation of local people to POs is not fully achieved, and POs are unprepared to manage CBFM project. Many PO members are unable to receive training on values, team building, leadership and technical matters. As a result, the capability of many POs to manage forestland and forest resources is still limited, which requires continuous external support until the community to become a capable entity to manage their forestland sustainably. However, external support, especially from DENR is limited due to the lack of fund, communication facilities, and transportation means. Coordination with different government agencies is also difficult.

Source: Interview with CBFM staff of CENRO San Isidro and PENRO Quirino  
 Executive Order 263, July 1995  
 DAO 96-29, S-1996  
 The ABC of Implementing CBFM

(2) Integrated Social Forestry Program (ISFP) and Center for People Empowerment in the Upland (CPEU)

<b>Implementing Agency</b>	ENRO-LGU/DENR
<b>Description of Program/Project</b>	After the issuance of Local Government Code in 1991, a devolved function of DENR to LGU became responsible for managing and funding ISFP that were established during the 1980s. ISFP was a pioneer social forestry program in the country aiming to provide individuals in the communities with management rights of state land in the form of stewardship certificates. Due to the limited fund to manage ISFP at LGU, many ISFP activities were discontinued. In that context, DENR required LGU to maintain at least one project per province as CPEU. Shall serve as the research and training laboratory of agro-forestry farm development.
<b>PO Development Component</b>	A part of Community Development Officers (CDOs) and Community Development Assistants (CDAs) of DENR were devolved to LGU to function as project site leaders and community organizers for environmental programs. LGU is to provide necessary financial, technical, human resources to ensure efficient and effective community organizing for social forestry programs. With regards to CPEU, there should be at least one CDO and CDA of DENR to monitor and implement activities of CPEU. DENR is required to allocate funds to CPEU.
<b>Major Achievement</b>	Upland communities were being mobilized as partners in the development and protection of forest resources. CPEU were established in all provinces in the Study Area while will serve as the model site for other ISF areas to follow.
<b>Constraints</b>	Inadequate human resources and fund at LGU is a major constraint for the revitalization of ISFP. In terms of CPEU, funds are limited to expand the activities.

Source: Interview with ENRO staff of Quirino and Isabela  
DAO 92-30, 1992

(3) Institutional/Entrepreneurial Development Program for Cooperatives

<b>Implementing Agency</b>	Provincial Cooperative Affairs Office (PCAO)
<b>Description of Program/Project</b>	The program is to promote cooperatives and livelihood information and education through the profitable enterprise identification and development. The major activity of the program is the supervision and monitoring of loan provision. By doing so, more cooperatives are organized, and documentation of agricultural data will be improved. As a result, food security and access will be improved.
<b>PO Development Component</b>	One of the major activities for cooperative development component is the dissemination of cooperative information and community awareness education, which aims to promote cooperative formation. Leadership and managerial capacity building of members is also emphasized. The expansion of cooperative is heavily depending on the saving mobilization.
<b>Major Achievement</b>	Some cooperatives grew as to receiving an award for good performance cooperatives.
<b>Constraints</b>	Some coop members are not cooperative to the movement. Thus in many cooperative, unity of the organization is questionable. There are limited financial and human resources to conduct training for members and officers. Affinity/Consanguinity affair of officers in the cooperative has negative effect.

Source: Interview with PCAO staff of Quirino

#### (4) Agrarian Reform Community Development

<b>Implementing Agency</b>	Department of Agrarian Reform (DAR)
<b>Description of Program/Project</b>	<p>The program can be divided into 4 major components as follows:</p> <ol style="list-style-type: none"> <li>1) Land Tenure Improvement – shall be operational to improve the tenurial status of farmers and farm workers by fast tracking the land transfer process.</li> <li>2) SILCAB (Social Infrastructure Capability Building) – shall be implemented to upgrade the institutional capacity and democratization of power of the various organizations in the area. The intent is to develop functional and empowered Agrarian Reform Community (ARC) organizations, which are gender sensitive, self-reliant, capable of self-governance and able to shape their own government.</li> <li>3) SARED (Sustainable Area-Based Rural Enterprise Development) – support the ARC development program objective of increasing farm productivity and income. This component aims to upgrade the skills of the ARC households and ARC organizations in managing on-farm, off-farm and non-economic activities and livelihood projects.</li> <li>4) BSSD (Basic Social System Development) – shall access concerned government agencies to training program and information material, providing basic social services in the majority activities of DAR to ensure that the required services needed in the ARC are delivered by the concerned agencies. Coordination and network are emphasized.</li> </ol>
<b>PO Development Component</b>	The Agrarian Reform Beneficiary (ARB) Information and Education Program aims to develop IEC (information, education and communication) material and training modules for the organizing and conducting appropriate training program and enhance skills of ARC organizations. Through the Information and Education Program, which is an integral system-approach in the development of ARC. It aims to capacitate the ARBs as development partners, which eventually strengthen the ARC as a PO.
<b>Major Achievement</b>	Some training sessions are conducted, and ARC learned food processing. The upgrading training has been constantly conducted.
<b>Constraints</b>	Not mentioned.

Source: Interview with DAR staff of Isabela

(5) Agricultural Reform Infrastructure Support Project (ARISP)

<b>Implementing Agency</b>	Department of Agrarian Reform (DAR)
<b>Description of Program/Project</b>	ARISP is a special project of DAR under the funding from OECF (now JBIC) and has 4 components, including irrigation, FMR, PHF and institutional development.
<b>PO Development Component</b>	On the institutional development, the focus is to develop a cooperative, which can serve as a cluster of Barangays or municipalities depending on the coverage of the ARC. Possible service will be livelihood projects in terms of farming, enterprise development, agri-business and preservation of ecological balance. In PO formation, the program implements the needed trainings on management to prepare the cooperatives to be reliant. After the PO formation, development intervention, such as irrigation, FMR, PHF will be introduced.
<b>Major Achievement</b>	Some cooperatives organized under the program grew to a large and sound PO with multi-million pesos worth.
<b>Constraints</b>	Many community members are unwilling to join the coop, which may be derived from the lack of educational activities. As a result, the business expansion of many coops is limited to minimal. Lack of transportation means of DAR hinders more intensive support to coops.

Source: Interview with DAR staff of Ifugao

(6) Rural Improvement Club

<b>Implementing Agency</b>	Office of Provincial Agriculture (OPA)
<b>Description of Program/Project</b>	<p>RIC is rural women organization technically assisted by the Farm Home Resources Management Section of the Office of the Provincial Agriculturist (LGU) in coordination with the Department of Agriculture. This organization serves as multipliers of effects of extension efforts in the rural communities.</p> <p>It is a voluntary barangay-based organization composed of 20-30 or more rural women with varied interest and capabilities which are mobilized for socio-economic projects.</p> <p>It is also a functional group of rural women which serves as channel for developing women's leadership and potential towards home and community development.</p>
<b>PO Development Component</b>	<p><b>CLUB COMPOSITION AND EXTENT OF THE ORGANIZATION</b></p> <ul style="list-style-type: none"> <li>• Organized in a nationwide scale, the RIC's can be found throughout the Philippines specifically in areas covered by the then Home Management Technicians now called Agricultural Technologists. Every barangay covered by AT responsible for Home Extension has an existing RIC that is organized into a municipal RIC.</li> <li>• Every province has a provincial RIC Council composed of officers elected from the presidents of all municipal RIC.</li> <li>• Every region has their Regional RIC Council elected from the presidents of all provincial RIC.</li> </ul> <p>The Regional RIC Council President and Vice President will be automatically the Regional Board of Directors and among the twenty eight (28) Regional Board of Directors.</p> <p>The National RIC of the Philippines is affiliated with the National Commission of the Role of Filipino Women, Manila, Philippines. Internationally it is affiliated with the Associated Women of the World (ACWW), Headquarter, London, England.</p> <p><b>PROJECTS/ACTIVITIES UNDERTAKEN BY THE RIC'S</b></p> <ol style="list-style-type: none"> <li>1. Selective Home Yard Food Production <p>The RIC's undertake continuous production/planting of subsidiary crops and raising of livestock on backyard and/or home lot scale to increase the availability of highly nutritious foods. They are also encouraged to plant fruit trees within their lot.</p> </li> <li>2. Family Life, Child Development and Population Education <p>During the homemakers classes/sessions RIC's are given lecture on proper child rearing and development, family planning methods, practices and topics that promote positive Filipino values and to help women recognize and appreciate their roles as members of the community.</p> </li> <li>3. Guided Homes Project <p>They are being trained on proper home management to effectively manage both human and material resources. Some of the activities are home sanitation and beautification, good housekeeping, energy conservation and recycling, wise buying and maximizing use of resources are also taught.</p> </li> </ol>

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4. RIC in Cooperatives

RIC's with identified livelihood projects undergo training on Cooperatives to gain experiences and skills in project development and management. This also leads to institutionalization of viable income generating projects and organization if RIC Cooperative.

5. Income Generating Projects (IGP)

Most RIC's had been previously engaged in the various income-generating projects through self-help. However, there are also some on-going IGP's which are funded through grants for evolving funds (LEAD) from DA and various agencies.

6. Ornamental and Herbal Production

Most of these RIC's are now making profit through organized production and sale of ornamental and herbal plants. The project makes efficient use of idle family labor as almost all members of the family can participate in the project.

7. Others – Food Processing/Food Trades, Garments, Catering, Coconut Utilization/Handicraft, etc.

8. Other Activities/Special Events Initiated and Participated by the RIC's:

RIC ACHIEVEMENT DAY – The RIC celebrated this activity every May or November of each year. The occasion is celebrated with musical program, reports of accomplishment, group discussion, meetings and election of officers. Demonstrations are also conducted on new innovation and researches that will be beneficial to them. Contests, product exhibits and display are put up to promote their products and provide motivation among members.

Recognition awards are also given to highlight the occasion. The day closes with a candlelight ceremony and the induction of new officers.

NATIONAL CONVENTION-Every year delegates from provincial RIC Council hold a National Conference. The activity is usually celebrated with reports of accomplishments, planning of future activities, sharing of projects and accomplishments, threshing out problems and other recreational activities/musical presentation by region. Awards/recognition are also given to outstanding clubs or club members.

NUTRITION MONTH CELEBRATION-RIC being a member of the Nutrition Committees at all levels are expected to extend support in activities e.g. fund raising, culminating activities of the Nutrition Committees.

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**Major Achievement**

1. Establishment of RIC Pasalubong Center located at Solano, Nueva Vizcaya-livelihood projects of RIC such as food processing and handicrafts are being marketed.
  2. Murong RIC of Murong, Bagabag awarded as Regional Outstanding RIC F.Y. 1999-2001.
  3. Livelihood Projects
    - 3.1 Swine Production – This is a short-up project with a role over scheme to spin-off activities among members creating social and economic opportunities.
    - 3.2 Vegetable Production- Over all production and income of rural women have substantially increased due to adoption of bio-intensive gardening and pesticide-free vegetables.
-



	<p>3.3 Credit Loan – Making them productive by funds from the club for their projects at the same time creating awareness on value of credit repayment while acquiring loans not from loan sharks.</p> <p>3.4 Rental of Kitchen Utensils and Monoblock Chairs-This increased the income of the club members.</p> <p>3.5 Mango Production-mango trees planted at Bangan Hills-joint project with OISCA International.</p> <p>3.6 Kamias Production-Still on its first year of implementation intended for processing into kamias prunes.</p> <p>3.7 Food Processing</p> <p>3.8 Handicrafts</p> <p>4. Duly accredited by the Sangguniang Panlalawigan of Nueva Vizcaya as a non-government organization.</p> <p>Status of RIC – As of August 20, 2001, there are 141 RIC with 5593 duly registered in this office.</p>
<b>Constraints</b>	Not mentioned

Source: Interview with Provincial RIC Coordinator of Nueva Vizcaya

### (7) Irrigators Association Development

<b>Implementing Agency</b>	National Irrigation Administration (NIA)
<b>Description of Program/Project</b>	NIA programs are principally on loan basis wherein recipient irrigators associations (farmer beneficiaries) will pay back and guarantee the cost of the project in the form of equity. These funds will partly sustain the operation of NIA being a government corporation.
<b>PO Development Component</b>	Involvement of Irrigators Association (IA) from the project planning up to the implementation stages are emphasized. After the project completion, the facilities will be turned over to the IA for their operations and maintenance.
<b>Major Achievement</b>	<p>1) Economic aspect: Transformation of idle agricultural lands to productive areas as well as restoration of irrigated areas thereby increasing rice production.</p> <p>2) Social aspect: Transformation of IAs as responsible partners in government projects.</p>
<b>Constraints</b>	Not mentioned.

Source: Interview with NIA staff of Ifugao

(8) Self-Employment Assistance para sa Kaunlaran (SEA-K)

<b>Implementing Agency</b>	Provincial Social Welfare and Development Office (PSWDO)
<b>Description of Program/Project</b>	The program is implemented to rural communities purposely to augment livelihood projects. The SEA-K lends money to the members of women's organizations, and loan amount by members shall be based on depending upon the project requirement. Loan repayment by the individual loan recipients shall be done in newly calculation. Shall be paid within a period of 24 months exclusive of 2 months grace period. The failure on the whole or part of the loan to pay back should be penalized, and the association shall be decide the type and degree of penalty.
<b>PO Development Component</b>	Each credit association will be grouped with 5 to 6 members, and each member has to pay 20 pesos membership fee. The association will receive training and technical assistance from the agency. Each group shall elect a chairperson and secretary. The group president will receive a loan from the association and release the same to the members of the group, and 3 members will receive the initial loan. The chairperson and secretary shall receive their loan after 8 weeks only when the initial loan recipients were able to paid their debts continuously and accordingly. Failure to comply means the deferment of the release of loan to the group officers. The liability of any member in a core group shall be the other members themselves.
<b>Major Achievement</b>	The program has been extended to some needy population in the rural areas.
<b>Constraints</b>	People's mentality is the major constraints. They think that if it is a government project, they presume that it is "dole-out" and do not feel the responsibility to pay back. As a result, many members of associations back out after receiving loan, which force the association to go under.

Source: Interview with PSWD staff of Ifugao  
Constitution and By Laws of SEA-K, Isabela, 2000

(9) Community Forestry Project – Quirino (CFPQ)

<b>Implementing Agency</b>	PENRO Quirino funded by GTZ and KfW
<b>Description of Program/Project</b>	Basic principle and approach of the project is basing on CBFMP of DENR. The project is to provide the community with land use permit of forestland, and the community shall be formed into a PO that will create land use plan, CRMF, annual work plan and other documents needed for the implementation of community-based forest management. The POs will then be the primal actors for the activities.
<b>PO Development Component</b>	CFPQ is assisting 19 POs (8 cooperatives and 11 organizations/associations) in 19 project sites. The project has provided extensive training to the members of assisting POs. One of the means for community organizing was the establishment of community savings and credit facilities called “Small Barangay Bank.” 6 cooperatives are involved in the saving and credit activities. Another medium for organizing is income-oriented infrastructure measures. Community organizers and NGOs have been actively involved in the development POs.
<b>Major Achievement</b>	At a local policy level, 5 municipality of Quirino province have adopted CBFM as a main strategy of developing, protecting and utilizing local natural resources. Those municipalities have prepared their respective Forest Land Use Plans (FLUP) ready to be legalized by Barangay councils. Approximately 65 % of aerial photo was completed.
<b>Constraints</b>	Sometimes, the reason of organizing community does not match the focal interest point of local people. Internal political conflict and organizational sectionalism impede an effective development of POs. Poverty and lack of education of local people causes the difficulty in organizing them, and awareness of local people towards the importance of natural resources is inadequate.

Source: Interview with CFPQ staff

(10) Debt for Nature Swap Initiative Program (DFNSIP)

<b>Implementing Agency</b>	PENRO Quirino funded by KfW
<b>Description of Program/Project</b>	The principle and concept of program are identical to those of CBFMP and CFPQ, and the program aims to develop both biophysical and social aspects of targeted communities.
<b>PO Development Component</b>	The program provides extensive skill training and capacity building activities to the communities in the areas include pre-membership education, team building, basic surveying, basic bookkeeping and so on. The program also supports the registration of POs at appropriate agencies.
<b>Major Achievement</b>	Organized 7 POs and reactivated 3 existing POs. Their skills and management capability have increased. Some plantation and infrastructure projects have been implemented.
<b>Constraints</b>	Due to social problems, especially financial, people sometimes prioritize their own needs. Proper timing of implementation sometimes is questionable to local people. Agency tries to implement project quickly to meet the target, while local people feel that they are not yet ready. Some occupants are hesitant to join especially DENR-led programs because of the fear that once the area is developed, they have their own notion that DENR will take over the area.

Source: Interview with DFNSIP staff

(11) Central Cordillera Agricultural Programme (CECAP)

<b>Implementing Agency</b>	Department of Agriculture (DA) funded by European Union (EU)
<b>Description of Program/Project</b>	The objective of the program is to promote a self-sustaining improvement in the living conditions on the central cordillera aiming to increase incomes and strengthen resource management capacities. The duration of program is 7 years between 1997 and 2003 with the total budget of 900 million pesos for the second phase that covers 25 municipalities in 4 provinces, Ifugao, Mountain Province, Kalinga and Abra. The program has 5 major components, namely 1) natural resource management, 2) marketing and enterprise development, 3) infrastructure, 4) rural financial system, and 5) institutional development.
<b>PO Development Component</b>	Institutional development aims at encouraging maximum community mobilization and participation in the project implementation. These activities are seen to put in place sustainable mechanisms for operations and maintenance of project. The institutional development initiatives include training, cross visits, coaching the clients in financial system, planning and evaluation workshops. The initiatives support groups as agricultural development organizations (ADO) that are involved in marketing and business, water users associations, which receive training and seminars. The program intends to organize irrigators associations (IA), village water association, agricultural development organizations and credit cooperatives.
<b>Major Achievement</b>	The program supported 77 IAs, 112 village water associations, 18 ADOs, 25 cooperatives.
<b>Constraints</b>	The program wants to develop faster than the actual pace of the clients. Providing too much funds is reversed effect on the development of POs, especially in the aspects of people initiatives and self-reliance. The objective of program predominates over the real needs and agenda of clients/beneficiaries.

Source: Interview with CECAP Institutional Development Component staff  
Annual Report of CECAP, 1998, 1999 and 2000

(12) Caraballo and Southern Cordillera Agricultural Programme (CASCADE)

<b>Implementing Agency</b>	Department of Agriculture (DA) funded by European Union (EU)
<b>Description of Program/Project</b>	CASCADE is a seven-year integrated rural development project in 3 provinces, Nueva Vizcaya, Benguet and Nueva Ecija. The total budget of the project for 7 years 25.65 million euro. The program put an emphasis on the importance of sustainability and people's participation, and the major objective is the financial, technical and managerial self-reliance. The program has 5 major components, namely 1) agricultural production, 2) agricultural marketing, 3) micro-enterprise development, 4) environmental resource management, and 5) social development. In addition, there are 3 support programs as 1) infrastructure support programme, 2) micro finance support programme, and 3) institutional development support programmes.
<b>PO Development Component</b>	Institutional Development Support Programme is intended to strengthen both LGUs and POs to ensure the objective of the whole program as a whole
<b>Major Achievement</b>	The program was able to provide various supports to 181 upland communities in 19 municipalities.
<b>Constraints</b>	Not mentioned.

Source: CASCADE Annual Report CY 1998 and 1999





## *Figures*

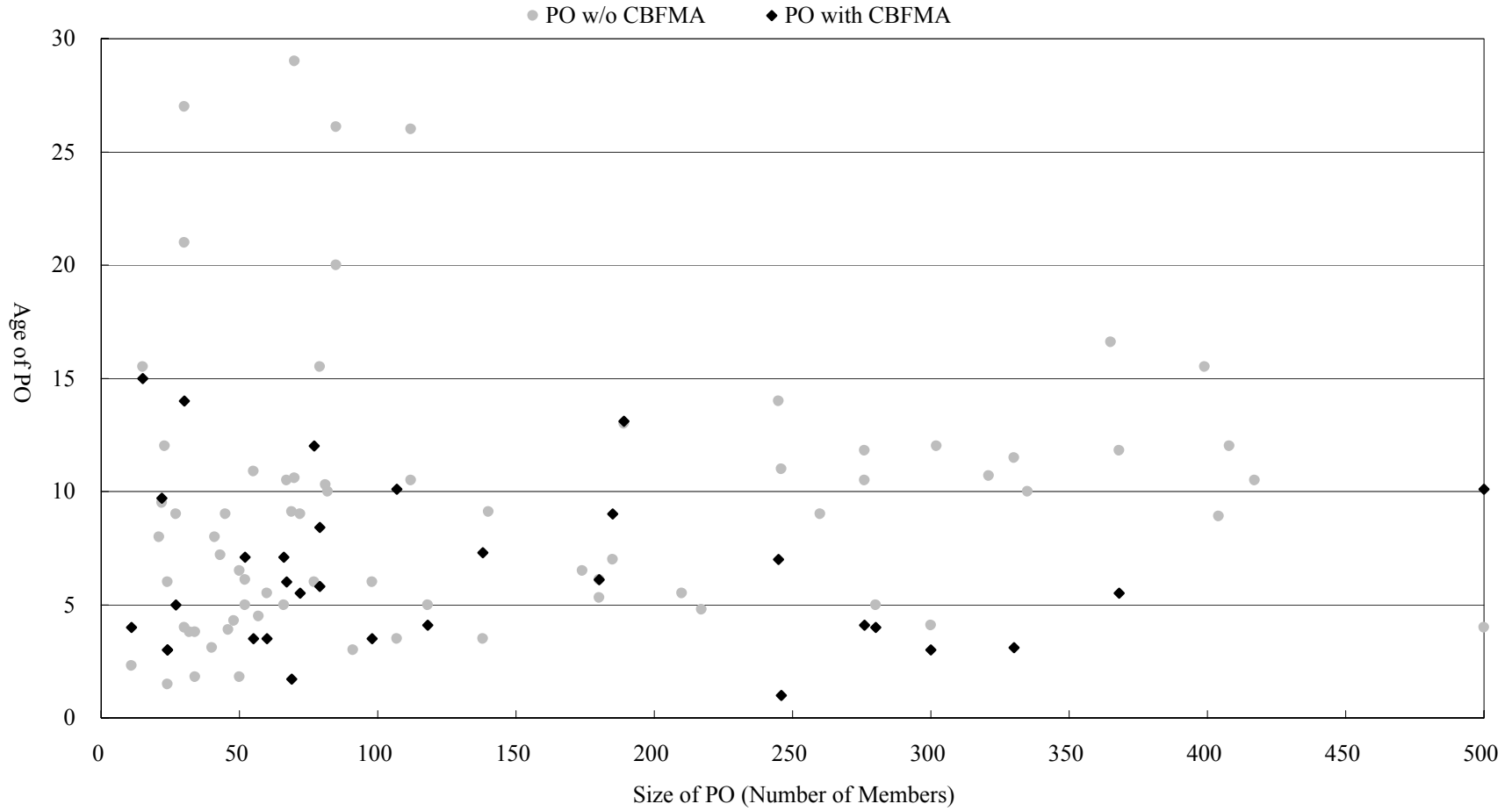


Figure 3.1 POs in Size and Age



*Appendix 4*  
*Agriculture, Agroforestry and Livestock*

## APPENDIX 4

### AGRICULTURE, AGROFORESTRY AND LIVESTOCK

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## **APPENDIX 4**

### **AGRICULTURE, AGROFORESTRY AND LIVESTOCK**

#### **CHAPTER 1 INTRODUCTION**

##### **1.1 Current Land Use**

Current land use in the Upper Magat and Cagayan Valley River Basin watershed is typical of conditions throughout most of the Philippines. Level irrigated lands are covered by rice paddies. Level lands without irrigation are usually planted to corn, peanuts, tubers, bananas and miscellaneous annual crops, with fruit trees near the houses of residents. On high mountaintops and in remote areas, one can find forests that are relatively undisturbed. In between these two extremes there is a mosaic of upland farms, grasslands and brush lands, many located on environmentally-fragile slopes. Harmonizing land use to supply food and firewood while concurrently achieving watershed management objectives poses many technical, institutional and social challenges.

This report summarizes conditions in the Study Area. It also suggests measures designed to help bring about sustainable improvements in agriculture, agroforestry and livestock that are consistent with sound watershed management. Given the complexity of social interactions and potential conflicts between productive (economic) and protective (environmental) land use, there are no standard blueprints that would be universally applicable. Recognizing these complexities, the herein report suggests a range of options that have the potential to help achieve production and protection goals. The intention is to assist in facilitating choices from a menu of agriculture, agroforestry and livestock management alternatives and combinations.

This document is a revision of a previous Appendix prepared in 2002 as a supplement to the draft Master Plan (M/P) for Watershed Management in the Upper Magat and Cagayan Valley River Basin. Subsequent to printing of the previous Appendix, some of the forestry, agroforestry and livestock components included in the draft M/P were implemented at four (4) pilot sites. This was done to test assumptions and procedures contained in the draft M/P, and to assess whether or not the components (as designed) have the potential to generate interest and promote adoption by watershed occupants. This exercise made it possible to derive lessons from the pilot sites that could be incorporated in an updated revision of the M/P<sup>1</sup>.

##### **1.2 Findings of Pilot Study**

Implementation was carried out at the pilot sites from April 2002 to July 2003, i.e. about fifteen (15) months. This short duration did not allow sufficient time for comprehensive testing (of assumptions, feasibility, etc.). Nonetheless, the exercise helped identify

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<sup>1</sup> See Volume II: Pilot Study for more detail.

several opportunities for improving the draft M/P. Furthermore, pilot project experience indicated factors that will need to be considered during M/P implementation, once a final version is approved. Several key lessons emerging from experience at the pilot sites are noted below:

- Procurement of planting materials for silvi-pasture development is difficult in the Study Area<sup>2</sup> due to very limited sources. In order to achieve silvi-pasture targets, it would be advisable to explore whether the Department of Agriculture (DA) would be willing to sign contracts to produce the necessary planting material in its Hillyland Research Outreach Station (HILROS) at Tapaya, Nueva Vizcaya and Cagayan Valley Upland Research Outreach Station (CVUPROS) in Madella, Quirino. Both of these stations are already producing modest quantities of pasture planting material. However, they have adequate land area and competent technical skills to produce the large volume of seeds, cuttings (etc), of species required for implementation of the silvi-pasture targets envisioned in the M/P.
- Survival rates of trees planted at the pilot sites were relatively low due (among others) to planting of under-aged seedlings. Procurement of mature seedlings proved to be difficult. Most of the seedling suppliers in the Study Area are small backyard operators. They lack the capital needed to tend seedlings for more than a few months. Therefore, they sell under-aged seedlings. From six (6) to eighteen (18) months are required to produce mature seedlings of most of the tree species watershed occupants want to plant. It may be necessary to modify contracting procedures in a manner that would make it feasible for small-scale producers to devote the time necessary for seedlings to grow to the desired size and age. For instance, allowing down-payment upon placing of an order for seedlings, with the balance payable upon delivery several months later.
- Provision of competent and sustained extension services is essential and needs to be developed. Most watershed occupants lack the skills needed for efficient implementation of agroforestry and silvi-pasture activities. At present, neither DENR nor DA have the capability to provide extension services on the scale required for M/P implementation.
- Road access within all of the pilot sites was poor and road upgrading was delayed due to lack of equipment. These conditions can be anticipated in most of the Study Area. Availability of graders and other equipment to improve access cannot be assured. Meanwhile, there is ample evidence that upgrading of roads can be accomplished through labor-based methods with minimal equipment support. Road and/or trail upgrading will undoubtedly be required throughout the Study Area. It would therefore be prudent to consider adoption of a labor-based strategy for road/trail upgrading in the M/P. Procedures and tools for this strategy were developed many years ago in two (2) national projects. One of these projects was jointly carried out by the Bureau of Forest Development<sup>3</sup> and the International Labour Organization (ILO). The other project was implemented by the Department of Public Works and Highways (DPWH)

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<sup>2</sup> “Study Area” refers to the land included in the MP in the provinces of Ifugao, Isabela, Nueva Vizcaya and Quirino.

<sup>3</sup> Predecessor of the present Forest Management Bureau (FMB).

with assistance from USAID<sup>4</sup>. Lessons from these projects can be applied in the Study Area.

- The conventional strip-brushing tree maintenance method was applied in grasslands of the pilot sites. This method was not always satisfactory for trees planted in the site. Lodging (i.e. pressing the grass with a lodging board) should be applied in some appropriate area. This would be a more effective, efficient and economical method than conventional way.
- At all of the pilot sites there are portions where assisted natural regeneration (ANR) would be an appropriate and cost-effective method for restoration of tree cover. Costs per hectare would be lower than costs for conventional reforestation. However, these opportunities have been ignored or not realized due perhaps to (i) lack of awareness that the Department of Environment and Natural Resources (DENR) has identified ANR as an officially-authorized method, and (ii) the absence of examples in the Study Area that demonstrate the advantages of ANR in comparison with conventional methods.
- Effective implementation of livelihood enhancement activities requires (among others) investments in assessment of viable options, mobilization of participants and training, all of which take time. To expedite results, development of livelihood activities should preferably begin at an early stage of implementation; e.g. in year one. During the pilot project, the principal livelihood improvement activity was introduction of cattle breeding and/or fattening. This component was not satisfactorily completed within the pilot project duration since implementation did not begin soon enough.
- As implied in several of the lessons mentioned above, it is highly likely that sequencing of activities envisioned in M/P implementation will have a significant impact on achievement of M/P goals and objectives. This issue of sequencing is discussed in Chapter 8 of this document and suggestions are offered for consideration.

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<sup>4</sup> United States Agency for International Development

## CHAPTER 2 DATA COLLECTION, SURVEYS, INVESTIGATIONS

### 2.1 Methods applied

From April to September 2001 a multi-disciplinary team<sup>5</sup> gathered, compiled and analyzed data on agriculture, agroforestry and livestock in the Study Area. Collection and analysis of secondary data was the principal measure employed to assess current watershed conditions. This was supplemented by on-site observations of competent experts, computation of soil erosion estimates using the Universal Soil Loss Equation and analysis of satellite imagery.

Findings are summarized below.

### 2.2 Land Area: Agriculture, Agroforestry and Livestock

Approximately 405,000 ha, or about forty-six percent (46%) of the land in the Study Area has been or is currently being used for agriculture, agroforestry and livestock. Land use for these purposes may be broken down into two general categories:

Land Use Category	Within Study Area	(Within PA&FL)
(a) Agricultural land (currently existing)	130,000 ha	(54,000 ha)
(b) Land previously or intermittently used for farming or grazing		
- Grassland	171,000 ha	(105,000 ha)
- Reproduction brush	104,000 ha	(84,000 ha)
Total	405,000 ha	(243,000 ha)

Source: Section 3.4.1 of Appendix 1

This large expanse of land has been converted from forests to other land uses over many years, with varying degrees of impact on the watershed.

### 2.3 Population

Population pressure accounts for much of the forest-to-farmland conversion that has occurred. The yearly population growth rate has been rapid, usually more than 2.0%. Total population in the four (4) Study Area provinces increased from 1.30 million in 1980 to around 1.95 million in 1995 with corresponding increases in population density<sup>6</sup>. Significantly, an estimated 406,000 people reside in Forestland and Protected Areas where there is a high risk of soil erosion<sup>7</sup>.

### 2.4 Terrain

Throughout the world, most human settlements have developed in or near level lands. The Study Area is no exception. Virtually all level lands have long been occupied and

<sup>5</sup> Consultants from Nippon Koei Co., Ltd. and Japan Overseas Forestry Consultants Association, and their counterparts from the Department of Environment and Natural Resources (DENR).

<sup>6</sup> Section 1.2.1 of Appendix 6

<sup>7</sup> Section 3.2.2 of Appendix 6

settled. But as the population increased, the need for more food also increased. There are basically three options for expanding the food supply: i) increase productivity per hectare; ii) reduce post-harvest losses; and/or iii) increase the area brought under cultivation. In the Study Area, the third option has been and still is the principal response. Hilly lands that were formerly forested and considered less desirable for agriculture, agroforestry and livestock production have been converted to these uses.

The negative impacts on watershed management due to land use conversion relate directly to the terrain. Impacts are less pronounced on gentle slopes, but often significant on steep slopes. Access to accurate information on the terrain is essential when considering possible future measures to improve the watershed. Data gathered by the Study Team indicates the existence and/or high probability of negative impacts wherever conversion has occurred on hilly and steep terrain.

#### Slope Breakdown in the Study Area

Slope category	Area by slope category and by province				Total (ha)
	Ifugao	Isabela	N.Vizcaya	Quirino	
Gentle to flat (0-17%)	34,715	93,072	63,071	62,475	304,337
Moderately steep (18-50%)	81,784	12,956	180,583	122,515	397,801
Very steep (> 50%)	58,413	502	63,071	45,202	167,186
Total	174,876	106,529	357,728	230,191	869,324

Source: Source: GIS analysis conducted by JICA Study Team based on existing topographic maps.

## 2.5 Soil Erosion

About 565,000 ha or around 65% of the terrain fall within the “Moderately steep” to “Very steep” categories. It is precisely in these categories that conversion can have the most serious negative impacts. Evidence of these impacts was revealed in estimates of potential erosion in the three river basins comprising the Study Area. The largest river basin (Magat) also has the largest estimated area and largest percentage of area experiencing excessive erosion.

#### Indicative Potential Soil Erosion and Total Areas of Excessive Erosion

Basin	Area (km <sup>2</sup> )	Volume (m <sup>3</sup> per year)	Erosion Potential (mm per year)	Areas of Excessive Erosion (km <sup>2</sup> )	Percentage Area of Excessive Erosion (%)
Addalam R.B.	1,147.741	3,336,000	2.9	115.1	10.03
Cagayan R.B.	3,421.627	11,493,000	3.4	422.3	12.34
Magat R.B.	4,176.63	16,025,000	3.8	1,042.7	24.96

Source: Analysis of existing data by JICA Study Team, applying USLD

Excessive erosion is not an inevitable consequence of conversion (from forests to farms). Measures can be taken to prevent erosion. This is amply demonstrated in Ifugao where steep lands that were converted to rice terraces have been sustainably managed for generations. Although there is no precise data on the extent of these terraces, some estimates run as high as 20,000 ha.<sup>8</sup> Furthermore, soil erosion can be prevented through less expensive measures such as planting of hedgerows on contours as in the SALT

<sup>8</sup> Source: Department of Tourism and Philippine Historical Society.



system of land management<sup>9</sup>. However, there are no large-scale examples of SALT application in the Study Area.

## 2.6 Livestock and Grazing

Satellite imagery analysis and observations by the study team confirm that grazing is one of the most extensive land use practices in the Study Area. Backyard animal husbandry is widespread. Grasslands near settlements are burned annually to induce growth of new grass that is tender and palatable for livestock. Government statistics report a population of approximately 220,000 grazing animals in the four provinces, of which around 180,000 are cattle and carabao. The balance are goats.

**Grazing Animals in the Four Study Area Provinces**

(unit: head)

Animals	Ifugao		Isabela		N.Vizcaya		Quirino		Total
	Backyard	Ranch	Backyard	Ranch	Backyard	Ranch	Backyard	Ranch	
Carabao	12,346	708	33,195	0	24,386	708	17,519	0	88,862
Cattle	5,639	11,172	25,912	4,410	25,620	14,077	6,361	1,409	94,600
Goat	3,183	215	10,455	0	15,336	1,716	6,031	200	37,136
Total	21,168	12,095	69,562	4,410	65,342	16,501	29,911	1,609	220,598

Source: Section 2.3 of Appendix 6

Average grazing capacity on the *Themeda* grasslands that characterize the Study Area is very low at only 0.3 to 0.5 animals per hectare<sup>10</sup>. In other words, given the existing grassland condition each cow or carabao needs at least two (2) ha of pasture. If one assumes that only 25% (45,000) of the more than 180,000 cows and carabaos in the four provinces are inside the Study Area, raising them would still require around 90,000 ha of pasture at the present grazing capacity.<sup>11</sup> There is no available data on the number of hectares burned annually. But given the cow/carabao population, the average grazing capacity, and current practices, it is likely that around 90,000 ha are burned each year. The negative impacts are clearly apparent on hillsides with numerous landslips, cattle paths that have evolved into deep ruts, and an almost total absence of tree cover.

## 2.7 Tree Farming

The most frequently applied example of non-erosive farming is tree planting. Data from the Bureau of Agricultural Statistics (BAS) indicates that at least thirty-three (33) species of fruit trees are grown in the Study Area, of which the most popular species are bananas, mango, coffee and coconut.

<sup>9</sup> SALT- The Sloping Agricultural Land Technology system developed and popularized by the Mindanao Baptist Rural Life Center, Kinuskusan, Bansalan, Davao del Sur.

<sup>10</sup> Cabanilla, Romeo S. "Improving the Productivity of Themeda (*T. triandra* Forsk) Grassland". Doctoral thesis. University of the Philippines at Los Baños. Dec. 1991.

<sup>11</sup> 45,000 animals x 2 ha per animal =90,000 ha..

**Estimated Number of Fruit Trees in the Four Study Area Provinces**

	Species	Estimated number of trees by species and by province			
		Ifugao	Isabela	N.Vizcaya	Quirino
1.	Achuete	29	n.a.	n.a.	n.a.
2.	Anonas	n.a.	n.a.	337	n.a.
3.	Atis	31	n.a.	n.a.	n.a.
4.	Avocado	6,534	13,993	45,875	30,587
5.	Balimbing	59	n.a.	n.a.	n.a.
6.	Banana	297,792	4,202,723	1,847,512	11,117,203
7.	Black Pepper	5,000	n.a.	n.a.	n.a.
8.	Cacao	598	26,064	11,145	5,115
9.	Calamansi	5,070	25,320	28,023	38,623
10.	Cashew	200	541	3,654	896
11.	Chico	133	n.a.	n.a.	n.a.
12.	Coconut	5,201	119,885	113,220	36,130
13.	Coffee	1,056,106	396,442	1,837,567	557,943
14.	Duhat	n.a.	343	2,581	963
15.	Guava	13,292	157,766	376,256	118,239
16.	Guayabano	1,497	11,292	20,922	15,776
17.	Jackfruit	2,473	11,934	33,187	25,141
18.	Kamias	n.a.	n.a.	n.a.	487
19.	Lanzones	n.a.	232	808	77
20.	Lemon	873	n.a.	n.a.	n.a.
21.	Mabolo	n.a.	n.a.	239	n.a.
22.	Malungay	6,100	15,641	34,375	13,936
23.	Mango	7,547	126,222	238,557	143,883
24.	Mandarin	1,102	8,092	11,009	32,489
25.	Mulberry	12,235	n.a.	n.a.	n.a.
26.	Oranges	1,170	5,995	31,968	8,909
27.	Papaya	23,788	34,265	64,323	90,854
28.	Pomelo	8,475	18,229	36,847	35,216
29.	Rambutan	n.a.	837	5,314	6,373
30.	Santol	2,552	14,408	28,757	23,774
31.	Starapple	2,252	14,685	25,017	21,101
32.	Tamarind	n.a.	4,615	12,949	4,783
33.	Tiesa	n.a.	n.a.	n.a.	705

n.a. –no data available

Source: Bureau of Agricultural Statistics (BAS).

**Area Planted to Major Species of Fruit Trees**

Province	Species	Ha	Species	Ha	Species	Ha
Ifugao	Coffee	1,094	Banana	694	Mango	309
Isabela	Banana	6,075	Coconut	755	Mango	710
N. Vizcaya	Mango	3,893	Coffee	2,400	Banana	2,270
Quirino	Banana	11,057	Mango	717	Coffee	680

This data serves two useful purposes. First, it identifies the most popular species and therefore suggests an entry point for extension and technology transfer. In most cases, introduction of improved technology has a higher chance of success if focused on crops that are already preferred by the farmers. Second, the data indicates which species (other than the most popular ones) are already grown in the area. Some of these species have good market prospects and a strong potential to increase farm income. They are therefore logical targets for expansion.

Tree planting is promoted by most government agencies, donor-assisted projects and NGOs. Tree-based farming was pursued aggressively in the 1970's when the government supported extensive planting of giant ipil-ipil (*Leucaena leucocephala*). Results ranged from outstanding success at Magsaysay Hill in Bambang, Nueva Vizcaya to total failure in other areas. Subsequently, the emphasis shifted to orchard species such as mango (*Mangifera indica*), jackfruit (*Artocarpus heterophylla*) and coffee (principally *Coffea robusta*), along with premium hardwoods such as mahogany (*Sweitenia macrophylla*) and narra (*Pterocarpus indicus*). Notably, the introduction of *Gmelina arborea* has led to widespread planting of this fast-growing tree. Bamboo has also been planted but only on a limited scale due to the high cost of seedlings.<sup>12</sup>

## 2.8 Annual Crops

Although tree planting and pasture land management are important watershed management concerns, it is clear that farmers place a higher priority on annual crops. In fact, partial data gathered from interviews at ongoing community forestry project sites indicates that vegetables provide the major source of income.<sup>13</sup> BAS data shows the approximate area planted to various annual crops in Year 2000 in the four provinces of the Study Area.

**Major Annual Crops Grown in the Four Study Area Provinces**

Crop	Approximate area (ha) by crop and by province				
	Ifugao	Isabela	N. Vizcaya	Quirino	Total
Rainfed rice	960	23,067	2,327	2,501	28,855
White corn	1,979	10,831	2,053	725	15,588
Yellow corn	7,560	185,850	13,658	23,728	230,796
Camote	1,756	764	1,504	55	4,079
Cassava	17	776	199	43	1,035
Peanut	120	1,444	65	1,650	3,279
Mongo		6,525	97	155	6,777
Eggplant	31	662	85	42	820
Tomato	4	316	677	8	1,005
Cabbage	20	15	105		140
Onion		36	175		211
Total					292,585

<sup>12</sup> Source of information: Provincial Agriculturist of Ifugao.

<sup>13</sup> Household interviews by the community forestry expert of the study team.

The data covers the entire area of the four provinces. There is no available breakdown of data by municipality that compiles information specific to the Study Area. Nonetheless, the data does identify the major annual crops grown, except for string beans which are an important crop in Ifugao and Nueva Vizcaya.

BAS data also indicates a shift away from subsistence crops and an increase in the area planted to cash crops. For example, in 1990 only 3,690 ha and 7,170 ha were planted to yellow corn in Ifugao and Quirino respectively. By 2000, this increased to 7,560 ha in Ifugao and 23,728 ha in Quirino. Other BAS data shows a general condition of low productivity. For instance, average annual coffee production is only around 800 kilograms per hectare, as compared with a verified potential of two metric tons.<sup>14</sup>

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<sup>14</sup> Source: Nestle & Co., Inc. coffee plantations in Bukidnon, Mindanao.

## **CHAPTER 3 PRESENT CONDITIONS**

### **3.1 General Scenario**

Existing data illustrates an overall scenario of: i) rapid population growth leading to forest loss; ii) large areas characterized by excessive erosion; iii) heavy reliance on annual crops with minimal investments in soil conservation; iv) low grazing intensity and degraded pastures; and v) low agricultural productivity per hectare. Balanced against these negative factors are positive examples of: i) effective terracing; and ii) previous introduction of tree species that can protect the watershed while also increasing farm income.

Moreover, one the worst observed examples of destructive land use also has positive implications. Specifically, steep hillsides near Bayombong and Sta. Fe, Nueva Vizcaya have been tilled and planted with tomatoes. The hard work required to grow sensitive annual crops on marginal land is evidence of industrious people willing to sacrifice if the results are worthwhile. These positive features provide an initial foundation for further improvement and eventual rehabilitation of the watershed.

### **3.2 Applied Technology**

Technical guidelines published by the Department of Environment and Natural Resources (DENR) present numerous options for improving watershed management while concurrently increasing agriculture, agroforestry and livestock income.<sup>15</sup> Among others, the guidelines explain how slopes can be stabilized by planting vegetative hedgerows at intervals along the contours. This makes it feasible to grow food crops and trees in the strips between hedgerows while at the same time conserving soil and moisture. Additionally, the hedgerows provide a source of firewood, along with fodder for stall-feeding of animals. The guidelines further explain how stall-feeding facilitates the accumulation of animal manure to fertilize crops. When efficiently planned and implemented, the combination of these measures can contribute to sustainable land use by maximizing the benefits of deep-rooted perennials, shallow-rooted food crops and animal husbandry in a symbiotic relationship. Generally however, land use in the Study Area is characterized by a lack of the systematic planning and implementation required for this symbiosis to be achieved. For example, farmers in Dupax, Nueva Vizcaya grow vegetables on steep land without including soil and water conservation measures. Another apparent deficiency is the almost total disregard of stall-feeding and the concomitant accumulation of animal manure for compost production, nutrient cycling and maintenance of soil fertility.

With a few exceptions, the prevailing farming/land use methods are adaptations of the centuries-old swidden<sup>16</sup> system. The principal components of traditional swidden (i.e. slash/burn/rotation) are still widely-applied in the Study Area, but with the following significant modifications:

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<sup>15</sup> ATIK – The Agroforestry Technology Kit (ATIK); ISBN: 0-942717-37-7, published jointly by DENR, the International Institute of Rural Reconstruction and Ford Foundation. Third printing- April 1998.

<sup>16</sup> Swidden- Slash-and-burn shifting cultivation.

- Rotation cycles are very short, often less than three (3) years. This does not allow sufficient time for restoration of woody vegetation and recovery of soil fertility;
- Most of the slash/burn is implemented on grasslands and brush lands that are partially degraded and generally low in organic matter or fertility;
- Slopes prone to erosion are intensively plowed or tilled using animal-drawn implements or hand tools; and
- Planting is often designed to respond to market demand (e.g. vegetables for sale) rather than the traditional emphasis on crops grown for home consumption.

### 3.3 Extension

Technology transfer via extension has focused almost exclusively on rice and corn. Improvements in rice culture are apparent. Department of Agriculture (DA) statistics indicate that 48% of all irrigated rice produced in the Philippines comes from the Cagayan Valley. Two positive factors in this regard are: i) the existence of irrigation systems; and ii) proximity to the Philippine Rice Institute (PHILRICE) in Nueva Ecija that produces certified seeds of high-yielding varieties. The Study Area provinces are also significant producers of yellow corn. One can assume that extension played a role in increased production of these two crops.

However, there is a notable lack of positive impacts from extension in respect of other annual crops. For instance, root crops are grown throughout the Study Area. But there are no gene banks of planting material for high-yielding varieties, such as those available in the Philippine's premiere center for root crop research.<sup>17</sup> Furthermore, improvement of pasture management has been almost totally neglected. One seldom sees pastures converted from cogon and themeda to para grass, guinea grass, Alabang X grass, other suitable grass species or pasture legumes.

Private sector extension initiatives for orchard crops have produced some notable improvements in citrus production. Meanwhile, Nestle and Co., Inc., in cooperation with a European Union project, is currently training coffee farmers on rejuvenation and pruning techniques. But except for these two examples, fruit tree farmers are not being served by extension agents.

DENR has focused its tree promotion activities principally on timber species. Although no comprehensive inventory has been conducted it is clear from field observation that *Gmelina arborea* has been planted extensively. However, close spacing, and the absence of thinning or pruning indicate that *Gmelina* tree planters are not being provided with advice on appropriate silvicultural practices. Furthermore, poor tree form on many farms suggests that seeds were gathered from inferior mother trees.

### 3.4 Financial Viability

In addition to the crops grown and the land use methods farmers apply, productivity and profitability are also highly-relevant to watershed management. Increased profits per

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<sup>17</sup> Visayan State College of Agriculture at Baybay, Leyte. Other sources of high-yielding planting material are at government research stations in Pili, Camarines Sur and Los Banos, Laguna.

hectare may reduce the risk that more forestland will be cleared and planted with food crops or converted into pasture. Conversely, low or marginal profits may encourage accelerated clearing of forests for subsistence or due to market-driven demand.

Financial viability is subject to a broad range of variables: e.g. topography, soil fertility, access to markets, etc. To arrive at accurate estimates, financial viability must be computed on a location-specific basis, taking into account seasonal variables such as price fluctuation. This exercise has not been carried out in the Study Area. However, the DA has compiled financial viability data on some crops as shown below:

**Estimated Profit (loss) per ha of Selected Crops**

Crop	1998	1999
Rainfed rice		
- National average	(2,473)	2,276
- CAR <sup>18</sup>	(1,045)	2,216
- Cagayan Valley <sup>19</sup>	(2,473)	2,276
White corn		
- National average	(582)	(326)
- CAR	1,501	1,879
- Cagayan Valley	(1,414)	(1,814)
Yellow corn		
- National average	4,151	5,197
- CAR	9,151	15,018
- Cagayan Valley	8,041	16,959
Pineapple	226,981	190,143
Mango	153,562	114,699
Coffee	27,599	31,105
Papaya	41,794	22,622
Calamansi	10,678	8,168
Onion	121,793	190,414
Cabbage	103,066	52,003
Eggplant	19,969	36,937
Tomato	56,738	36,169
Cassava	22,965	17,973
Ampalaya	6,477	11,129
Peanut	14,906	9,565
Mongo	9,401	8,918
Camote	8,530	7,334
Stringbeans	(327)	(8,277)

The data mentioned above has limitations. Estimates for rainfed rice, white corn and yellow corn are based on averages in the Cagayan Valley and the Cordilleras Autonomous Region (CAR), and are therefore relevant to the Study Area. But estimates for other crops are based on national averages. Thus, they may not necessarily be valid in the Study Area. For instance, DA data indicates that string beans are not a profitable crop. However, many farmers in the Study Area plant string beans. It is not likely they would continue planting if they were not satisfied with the income they derive. Furthermore, many crops important in the Study Area (e.g. bananas) are not included in the data.

<sup>18</sup> CAR- Cordilleras Autonomous Region, which includes Ifugao.

<sup>19</sup> Includes Isabela, Nueva Vizcaya, and Qurino.

The above table indicates that the only financially viable data perennial crops are mango, coffee, papaya and calamansi (*Citrus microcarpa*). In addition to these crops the extensive planting of *Gmelina* suggests that farmers consider this a profitable venture. Growth and yield estimates indicate that *Gmelina* tree farms produce approximately 80 cubic meters (m<sup>3</sup>) of saw logs per hectare in 8 to 10 years.<sup>20</sup> Current prices range from ₱1,800 to ₱3,000 per m<sup>3</sup>,<sup>21</sup> thus indicating a potential gross income per ha of between ₱140,000 to ₱240,000 or around ₱14,000 to ₱24,000 per ha per year on a 10 year rotation.<sup>22</sup>

### 3.5 Projects

Government agencies have implemented various projects in the Study Area. For example, DA has designated portions of the four provinces as Strategic Agriculture and Fisheries Development Zones (SAFDZ) where it intends to promote crop and fish production. However, SAFDZ implementation has concentrated principally on prime agricultural areas in lowlands outside the Study Area. The only noteworthy examples of SAFDZ implementation in the Study Area are water impoundments for fish culture, along with provision of fingerlings and technical assistance to owners of fish cages, mostly in the man-made lake of the Magat Dam. SAFDZ implementation has made no significant impact on development of upland farms.

In the context of watershed management, the principal projects thus far were implemented by DENR. These include the Integrated Social Forestry (ISF) program initially launched by DENR and now devolved to local government units (LGUs), and reforestation under the Forestry Sector Project (FSP) jointly financed by OECF (now JBIC) and ADB.<sup>23</sup> Tree planting has been the main component of both the ISF and FSP. Food crop production has also been included at ISF sites, but rarely at FSP sites.

In addition to the ISF and FSP, the DENR is also implementing its (i) Forest Land Management Program, (ii) Forest Production Project, (iii) Socialized Industrial Forest Management Program (SIFMA) and (iv) Watershed Rehabilitation Project. DENR and the Provincial Government of Nueva Vizcaya jointly manage two other projects: i.e. Tree for Legacy Program and Lower Magat Forest Management Project.

Donor-assisted projects have played a major role. The principal donor-assisted projects on the watershed are: i) Community Forestry Project in Quirino, financed by the German government; ii) Debt for Nature Swap Initiative, also in Quirino and financed by the German government; iii) the Central Cordilleras Agricultural Program (CECAP) financed by the European Union; and iv) Developing Tropical Forest Resources through Community-based Forest Management in Nueva Vizcaya, financed by the International Tropical Timber Organization (ITTO). Two other donor-assisted projects that have a marginal impact on the Study Area are: i) Carballo and Southern Cordillera Agricultural Development Programme (CASCADE), financed by the European Union; and ii) Sierra Madre Biodiversity Corridor Project, funded by PLAN<sup>24</sup>, the Netherlands and USAID<sup>25</sup>.

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<sup>20</sup> Source: Forest Management Bureau, DENR, Quezon City.

<sup>21</sup> Source: PENRO, Quirino province.

<sup>22</sup> P1,800 per m<sup>3</sup> x 80 m<sup>3</sup> ÷ 10 years = P14,000. P3,000 per m<sup>3</sup> x 80 m<sup>3</sup> ÷ 10 years = P24,000.

<sup>23</sup> Overseas Economic Cooperation Fund; Japan Bank for International Cooperation; Asian Development Bank.

<sup>24</sup> An international non-government organization (NGO).



The following table shows a summary of ISF and donor-assisted projects with agriculture and agroforestry components.

**ISF and Donor-assisted Projects with Agriculture/Agroforestry Components**

Project type	Ifugao		Isabela		N.Vizcaya		Quirino		Total	
	No.	ha.	No.	ha.	No.	ha.	No.	ha.	No.	ha.
ISF	52	8,158	7	948	126	17,993	50	19,770	235	46,868
Donor-assisted	74	n.a.					24	84,768	98	84,768

Sources: PENRO Profiles, DENR Central Office records, donor-assisted project reports.

Most of the donor-assisted projects focus primarily on tree planting and forestry. However, CECAP and CASCADE have also supported agricultural infrastructure, e.g. terrace construction, small-scale irrigation systems, and trails. In addition to tree planting, the ITTO project and the Lower Magat Forest Management Project also include agriculture and agroforestry components.

Two non-government initiatives worth noting also include agriculture and agroforestry. One is the Kalahan Foundation project in Imugan, Sta. Fe supported by the United Church of Christ. The other is the traditional Muyong system in Ifugao wherein families of indigenous ethnic groups establish claims over parcels of land where they conserve existing forests, promote natural forest regeneration, and plant fruit trees and food crops. DENR is the process of delineating and giving official recognition to these claims.

It is significant to point out that none of the projects mentioned above deal with pasture management and livestock. These are crucial areas of concern given the vast expanse of grasslands used for grazing and the severely degraded conditions on most of these grasslands.

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<sup>25</sup> United States Agency for International Development

## **CHAPTER 4 FINDINGS, ISSUES PROBLEMS, CONSTRAINTS**

Most of the prevailing land use practices in the Study Area are not sustainable. This is particularly true in the case of grassland (i.e. pasture) management which to date has received very little if any attention in government or donor-assisted projects. The absence of improvements in this regard may be attributed to several factors. One factor is an apparent overlap of functions between DENR and DA. Livestock management is part of DA's food production mandate. However, most of the land used to graze livestock falls under DENR jurisdiction. Until one of these agencies assumes principal responsibility, it may not be realistic to anticipate any major improvement in the existing conditions.

But overlapping jurisdiction is only one of the factors affecting agriculture, agroforestry and livestock production. Some of the other major problems relevant to these sectors are discussed below.

### **4.1 Extension and Technical Support Services**

At present, neither DENR nor DA has developed an effective extension service for the uplands. Thus, very few upland farmers are familiar with pruning techniques for fruit trees, integrated pest management, rhizobium inoculation and other measures that can improve production. Moreover, due to the lack of readily-available seeds and seedlings of improved plant varieties, farmers are unable to take advantage of completed research from which they can benefit.

### **4.2 Post Harvest Handling and Facilities**

Research results indicate that around 25-30% of farm production is lost due to spoilage and other damage before reaching the market place.<sup>26</sup> This national problem is very evident in the Study Area. For instance, at the major collection and trans-shipment center for vegetables<sup>27</sup> one can observe large piles of spoiled crops. Furthermore, rice and corn harvests are usually dried on the highways where the grains are subject to damage caused by passing traffic, contamination and sudden rain showers. Post harvest studies indicate that better packaging can dramatically reduce spoilage of vegetables. Crop driers could save much of the grain that is lost or degraded under present conditions. But neither of these options is available to most farmers in the Study Area.

### **4.3 Access to Markets**

Bad roads (in some places no roads) make it difficult and expensive to transport farm products. The end result is low farm-gate prices which discourage investment of time and labor on improved technology.

### **4.4 Tenure Security**

As mentioned earlier (**Section 2.2**), around 406,000 people reside in forestlands and protected areas, i.e. on government property. Various types of instruments can be issued

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<sup>26</sup> Findings from the National Post Harvest Institute (NAPHIRE).

<sup>27</sup> Bambang, Nueva Vizcaya.

to grant secure tenure in forestlands. Secure tenure can help encourage long-term investments such as tree planting, terracing, and other soil conservation measures.

However, the issuance of tenure documents is hindered by bureaucratic procedures that impede the process. For example, CSC issuance involves filing of applications, inspection and verification, delineation surveys, approval of the surveys and clearance from the barangay captain. This often takes years to complete. Delays are due principally because PENROs and CENROs seldom have sufficient budgets for accomplishing their responsibilities in this regard.

In the context of tenure security relevant to this study, the principal mechanism at present is issuance of Community-based Forest Management Agreements (CBFMA). Conservation of natural forests and development of plantations are major objectives of CBFMA issuance. In addition to the emphasis on forestry, CBFMA implementation also envisions development of agroforestry, pasture and agriculture. The Community-based Forest Management Program (CBFMP) is intended to promote comprehensive, environmentally-sound land use to simultaneously improve watershed management conditions and rural income.

While CBFMA issuance has contributed to tenure security in a general sense, problems have emerged due to insufficient time and resources for effective implementation. For example, at the Balligui pilot site in Quirino, the principal beneficiaries of CBFMA issuance were lowland residents. Most of the families living on the upland forested portions of the area (most crucial in terms of watershed management) were not members of the CBFMA organization. This situation was corrected during the pilot project. However, there is a high probability that a situation similar to the pre-pilot site condition at Balligui is prevalent elsewhere in portions of the Study Area already covered by existing CBFMAs.

#### **4.5 Lack of Continuity and Frequent Change of Major Programs**

New programs and projects are launched frequently, with new rules, new procedures, and new agendas, thus limiting the resources available for on-going projects. These changes are often accompanied by different sets of tenure instruments, thus adding further complications and confusion.

#### **4.6 Regulatory Disincentives**

In theory, government programs are designed encourage tree planting. In reality however, the regulatory environment creates significant disincentives. For instance, in order to harvest trees and sell the wood legally, tree farmers are required to go through complicated procedures of registration, application for permits to cut the trees they have planted, obtain permits to transport and so forth. Most of these transactions have to be completed in government offices. Thus, farmers must spend for transportation, lodging and other expenses while waiting for papers to be processed. Under these conditions, promotion efforts may continue to meet resistance and skepticism, especially from farmers whose small scale of operations will not justify the expense and time required to comply with procedures.

## CHAPTER 5 DEVELOPMENT PLAN

### 5.1 Macro-perspective

The proposed development plan takes into account the following major factors:

- Present land use categories and current impacts on the watershed;
- Proposed future land use categories focusing on watershed rehabilitation;
- Slope in relation to probable soil erosion;
- Proposed rehabilitation and soil conservation activities based on slope categories;
- The intention to operate within the context of the Community-based Forest Management Program (CBFMP); and
- The need to improve the livelihood of residents.

Although the Study Area includes approximately 209,600 ha of alienable and disposable (A&D) lands<sup>28</sup>, the plan focuses only on the Protected Areas and Forestlands. It is in these two land categories that potential negative impacts on the watershed are most likely to occur due to slope conditions and the corresponding risk of soil erosion. At present, land use for agriculture, agroforestry and livestock in Protected Areas and Forestlands covers approximately 168,500 ha as follows:

**Present Area Extent of Plantation, Grassland and Agricultural land in Protected Area and Forestland**

Category	Protected Area	Forestland	Total
Other Plantation	302	9,429	9,731
Grass land	7,313	97,653	104,966
Agricultural land	3,262	50,514	53,776
Total	10,877	157,596	168,473

Source: Section 3.4.1 of Appendix 1

The proposed plan recognizes the need to work toward a change in the present land use. This will need to be pursued through both institutional and on-site initiatives. The two proposed activities most relevant to this report are agroforestry and silvi-pasture development. These two headings encompass a broad range of potential activities that can be adapted to site-specific variables. The plan is designed to help achieve change on a scale large enough to have a measurable positive impact on the watershed. Towards this end, the development plan proposes agroforestry and silvi-pasture rehabilitation/restoration measures on approximately 54% of the 168,500 ha noted above, equivalent to about 90,800 ha accounting for 33,700 ha for agroforestry and 57,100 ha for silvi-pasture as indicated hereunder.

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<sup>28</sup> Section 3.4.1 of Appendix 1

**Proposed Agroforestry and Silviculture in Proposed Protected Area and Forestland**

Present Land Use	Slope (%)	Protected Area		Forestland	
		Land Use	Area (ha)	Land Use	Area (ha)
Reproduction Brush	18 - 29	Agroforestry	6,700	Agroforestry	13,600
	< 18	Agroforestry	3,800	Silvi-pasture	11,000
Grass land	30 - 50			Silvi-pasture	23,900
	18 - 29			Silvi-pasture	22,200
Agricultural land	30 - 50			Agroforestry	9,600

Source: Section 6.1.2 of Appendix 1

## 5.2 Objectives

In order to be sustainable, development plan objectives should be consistent with objectives of the intended beneficiaries. Measures promoted by the plan must be perceived by the beneficiaries as worthwhile, particularly in terms of higher income and more stable living conditions. The specific objectives below are discussed in that context, while also targeted toward watershed rehabilitation/restoration.

### 5.2.1 Increase Productivity of Annual Crops

The development plan will promote more productive use of land that is already being cultivated. The goal is to increase production without expanding the size of clearings. Initially, this objective may focus on provision of better quality seeds coupled with appropriate agricultural extension. Wherever feasible, new or improved marketing opportunities may be identified, including the promotion of existing crops with good market potential. For instance, there is a strong demand for the purple yam (*Ube-Dioscorea alata var. purpurea*) that many farmers already plant. But at present, the crop is not grown in sufficient quantity to attract wholesale buyers from factories that process the yam into food coloring for export.

Productivity can also be enhanced through introduction of improved fallow systems on the brush lands where farmers currently practice *swidden*. These systems are simple and inexpensive involving principally the sowing of cover crop legumes<sup>29</sup>. Improved fallow systems will expedite restoration of soil fertility much faster than the traditional rotation methods farmers presently use.

Other practical options that can be promoted include (i) expansion of the indigenous “gen-gen” system<sup>30</sup> which provides a good entry point for promotion of soil conservation and (ii) utilizing the leaves of wild sunflower (*Tithonia diversifolia*) and kakawate (*Gliricidia sepium*) as green manure thus reducing the need to buy chemical fertilizer. Through a sustained extension effort, communities can also be encouraged to practice the SALT method of soil conservation. This needs to be supported by development of nurseries to produce hedgerow planting material that is not readily available at present (e.g. Vetiver grass, *Flamengia congesta*, *Desmodium renzonii*).

<sup>29</sup> Centrosema pubescens, Pueraria javanica, and Croton juncea are a few examples.

<sup>30</sup> In this system, vegetation is piled on contours across the slope.

### 5.2.2 Increase area planted to perennial crops

As noted earlier (**Section 2.6**) at least 33 species of fruit trees are already being planted in the Study Area. Clearly, farmers are interested in fruit trees. The challenge is to stimulate and support this interest.

Data collected by the study team indicates that income from fruit trees is negligible.<sup>31</sup> Among others, this suggests the need for: i) provision of seedlings and scions<sup>32</sup> from high-yielding, high-quality varieties; ii) training in better technology to increase production; iii) improved access to markets; and iv) processing to increase shelf-life and reduce post-harvest losses. Two organizations are already processing fruits on a limited scale<sup>33</sup>. Furthermore, both the Department of Trade and Industry (DTI) and the Department of Science and Technology (DOST) provide assistance to small-scale processors. Linkage with these organizations can be explored to promote application of all the above options.

### 5.2.3 Improve pasture management

The proposed development plan includes a tentative target of 57,100 ha for silvi-pasture. This comprises part of the estimated 171,000 ha of grasslands in the Study Area (**Section 2.1**). Study team recommendations suggest conversion of some grassland to man-made forest. Undoubtedly however, many farmers will still use large areas for pasture. Given the negative impacts of present pasture management, there is an urgent need for improvement. But bringing about a change in present methods will be difficult and relatively costly. Several approaches can be considered.

Some livestock owners have planted small patches of pasture grass species such as African Star grass (*Cynodon plectostachsus*) and legumes (e.g. *Stylosanthes guyanensis*). Interviews with other livestock owners imply that they would plant fodder trees if they are provided with suitable seedlings. Several fodder tree and bush species are suitable for conditions in the Study Area including kakawate (*Gliricidia sepium*), ipil-ipil (*Leucaena leucocephala*), mulberry (*Morus alba*), alibangbang (*Bauhinia malabarica*), *Flamengia congesta* and *Desmodium renzonii*. Suitable species for that purpose are as follows.

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<sup>31</sup> Page 6-96, Main Text, Progress Report, October 2001.

<sup>32</sup> Scions – budwood and other vegetative propagation material.

<sup>33</sup> Kalahan Educational Foundation and a cooperative linked to the Nueva Viscaya Institute of Technology (NVSIT).

**Recommended Fodder Crops and Their Propagation Methods**

Scientific name	Common Name	Propagation method
<b>A. FODDER TREES</b>		
<i>Bauhinia monandra</i>	Bauhinia; fringo-morado	Seeds, seedlings
<i>Calliandra calothyrsus</i>	Calliandra	Seeds, seedlings
<i>Cajanus cajan</i>	Kadios	Seeds
<i>Desmodium renzonii</i>	Rensoni	Seeds, potted cuttings
<i>Flamingia macrophylla</i>	Flamingia	Seeds
<i>Gliricidia sepium</i>	Kakauate	Cuttings, seeds, seedlings
<i>Leucaena leucocephala</i> ; <i>L. diversifolia</i>	Ipil-ipil	Seeds, seedlings
<i>Pileostigma malabaricum</i>	Alibangbang	Seeds, seedlings
<i>Sesbania grandiflora</i>	Sesbania	Seeds, cuttings
<b>B. GRASSES</b>		
<i>Brachiaria decumbens</i>	Signal grass	Root stocks, seeds
<i>Brachiaria mutica</i>	Para grass	Stem cuttings
<i>Chloris gayana</i>	Rhodes grass	Root stocks, seeds
<i>Cynodon plectostachys</i>	African star grass	Stem cuttings
<i>Dicanthum asistatum</i>	Alabang X	Seeds, root stocks, stem cuttings
<i>Digitaria decumbens</i>	Pangola grass	Stolons
<i>Panicum maximum</i>	Guinea grass	Root stocks, seeds
<i>Pennisetum clandestinum</i>	Kikuyu	Rhizomes, runners
<i>Pennisetum purpureum</i>	Napier; Elephant grass	Stem cuttings
<b>C. VINES AND HERBS</b>		
<i>Centrosema pubescens</i>	Centro	Seeds
<i>Macroptilium atropurpureum</i>	Siratro	Seeds
<i>Stylosanthes guyanensis</i>	Stylo	Seeds

If planted in contoured hedgerows, these deep-rooted, protein-rich fodder species will reduce soil erosion and help restore fertility, while also improving animal nutrition. Production and distribution of seeds, seedlings and other planting material may motivate farmers to improve their pasture areas.

However, for efficient development pasture areas should be fenced to prevent grazing for one or two years so that newly planted forage crops have time to become well established. Most of the beneficiaries will not be able to afford barbed wire fencing due to the high cost. Therefore, the project will promote establishment of live fences with suitable species such as Dapdap (*Erythrina orientalis*).

Additionally, these areas must be protected against fire. Fire prevention entails a radical change in present pasture management methods. To encourage this change, the development plan proposes implementation of a “no fire bonus” system. Hopefully, livestock owners will be convinced that pasture improvement and stopping the practice of annual burning are beneficial to them, and will replicate these measures in the future without external assistance.

### **5.3 Strategy and Processes**

It is imperative to gain the confidence of intended beneficiaries and establish the credibility of external agencies/people that will work with them. This is particularly relevant in agriculture, agroforestry and livestock where many different farmers will ultimately make the land use decisions. In general, farmers are highly individualistic. Furthermore, they usually want to see evidence that something will work before risking time and labor on new methods. The following paragraphs suggest strategic approaches and processes that focus on credibility-building and gaining confidence.

#### **5.3.1 Start where the People Are**

Development workers are often tempted to immediately introduce a new crop or method. However, a more prudent approach is to study and understand what the farmers are already doing and gradually help them make improvements. For instance, planting corn and vegetables on steep slopes is not advisable from a watershed management perspective. But it is a general practice in the Study Area. Rather than attempting to convince farmers to plant something else, provision of better seeds is likely to be a more effective way to capture their interest and gain their confidence. Encouraging small-scale planting trials with improved seeds can demonstrate the potential for better harvests. Once new seed varieties are accepted and proven beneficial, farmers will want to use these new varieties. This can be a first step in moving onward to other improvements such as green manuring, hedgerows, contour planting and crop rotation.

#### **5.3.2 Small scale infrastructure**

The development plan proposes implementation of small-scale infrastructure for three principal reasons: i) it is needed and useful; ii) implementation will enable farmers to earn income from wages, thus helping alleviate poverty; and iii) working together on small projects will create a focal point for organization and collaboration that can carry over into other development activities. While conditions will vary from site to site, some of the more common needs will likely be: i) construction of graded trails; and ii) small-scale irrigation systems. Normally these activities involve provision of materials by a project, some paid labor, and some voluntary labor.

#### **5.3.3 Identify key farmer leaders**

Construction of small-scale infrastructure provides an opportunity to identify key leaders that other residents respect and follow. The development plan strategy assumes that key farmer-leaders will eventually play an important role in convincing their neighbors to adopt new land use methods such as improved fallow systems, SALT technology and so forth. Another role may be convincing community members to allocate part of their site as protection areas for springs and water systems.



#### **5.3.4 Cross visits**

Results from earlier projects<sup>34</sup> clearly validate that farmer-to-farmer technology transfer is an effective strategy for promoting improved land use methods. One practical way to achieve this transfer is to bring key farmer-leaders to other communities where residents are already applying improved methods. Thereafter, exchange visits can be arranged to strengthen the linkage and the technology transfer process. Cross visits are proposed as an important part of the development plan strategy.

#### **5.3.5 Demonstration farms**

In the past, most demonstration farms have been developed as “show windows” financed by government agencies. While farmers may appreciate what they see on these farms, they seldom replicate the methods by themselves. Generally, this reluctance is due to a perception that they cannot apply the methods because they are poor, or because they fear ridicule from their neighbors if they fail. Furthermore, application of new methods is often perceived to be risky. Farmers who live at or near the subsistence level cannot afford to take risks. Thus, the traditional demonstration farm approach rarely achieves its intended results.

The development plan proposes a modified approach emphasizing “on-farm” demonstration trials. Cross-visits (see previous paragraph) can help generate interest in new land use methods. Farmers who are willing to experiment with new methods on a limited scale may be supplied with seeds, seedlings and technical assistance from extension agents. For example, a corn farmer may be encouraged to try green manuring on a few square meters of his land. Similarly, a coffee farmer may be encouraged to prune and rejuvenate a few of his trees.

Extension assistance will need to be provided effectively and on a sustained basis until the desired results are achieved. Recognizing this need, and the presently under-developed extension capabilities of relevant government agencies, cost estimates proposed in this report envisage hiring of small teams of extension specialists who will live at project sites for 2-3 years, working daily in the field with the beneficiaries.

This proposed approach will be slower than the traditional approach to development of demonstration farms. In most cases, achievement of measurable results may take 2-3 years. However, once positive results are apparent, farmers may realize that despite their lack of financial resources, improvements are still possible. Methods they have already successfully applied in their small-scale experiments can then be expanded without external assistance. Other neighboring farmers will see that it is also possible for them to replicate what their peers have already accomplished. In effect, the proposed approach has the potential to be more sustainable and cost-effective.

#### **5.3.6 Community mapping**

Beneficiaries will generally make their own individual land use decisions. However, the quality of those decisions will be improved if all concerned parties (stakeholders) have a clear understanding of prevailing conditions. The community mapping process has been

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<sup>34</sup> E.G. – Rainfed Resources Development Project (RRDP), World Neighbors Soil and Water Conservation Project.

used effectively by DENR and other organizations<sup>35</sup> to help achieve that goal and concurrently work toward consensus on environmental issues relevant to watershed management. Procedures developed and refined through years of experience are already available<sup>36</sup> and practitioners have been trained to assist the process.

In addition to helping beneficiaries situate their decisions within the broad context of their physical and social environment, community mapping may also be used to derive information that is useful in project implementation including: i) agricultural census to identify preferred crops and assess the status of livestock; ii) identification of extension, training and technical assistance needs; and iii) identification of sub-projects that create incentives for community organization (e.g. graded trails and irrigation systems). Community mapping is proposed as a fundamental component of the development plan. The extension teams mentioned above would facilitate the community mapping process.

## 5.4 Project Site Perspective

The two headings in the macro targets cited earlier (agroforestry/silvi-pasture) are general concepts. Obviously, there are numerous land use methods/options that can be used to apply these concepts. The appropriate method/option will depend on site-specific conditions. Ultimately, individual farmers will choose which option to apply. A farmer may decide to implement some components of one or two options, or even combine components taken from several options. For instance, many farmers in the Study Area prefer to plant mangos. However, others may want to plant Tamarind (*Tamarindus indica*) or *Gmelina*. Alternatively, a farmer may choose to plant erosion control hedgerows that improve production of annual crops and supply fodder for animals. But he/she might not be interested in planting trees.

For illustrative purposes six land use models are briefly discussed herein. These are one hectare (1 ha) models. There are five for agroforestry, and one for silvi-pasture model. Four of the agroforestry models and the silvi-pasture model assume implementation over three years. One of the agroforestry models is for implementation in one year. In actual practice however, the speed of implementation will depend on the farmer's interest and resources, the external assistance he/she is able to obtain and the quality of extension services that are provided. These models are summarized below.

### 5.4.1 Agroforestry Models

#### (1) Agroforestry Model No. 1 – Mango/fruit tree inter-planting

In this model, mangos would be planted at 10 x 10 m spacing (i.e. 100 trees per ha) and inter-planted with approximately 300 other compatible fruit tree species at 5 x 6 m spacing. Inter-plantings would consist of species that produce fruit earlier than the mangos but are eventually shaded out as the mango canopies expand (e.g. papaya). Initial plantation establishment, including replanting as needed, would be completed in three years. The inter-planted species would begin to bear fruit earlier than the mangos, thus providing income for maintenance after the initial three year establishment phase.

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<sup>35</sup> E.G. – Philippine Working Group (PWG), Regional Community Forestry Training Center (RECOFTC), Bangkok.

<sup>36</sup> Community Mapping Manual of DENR, produced by the Natural Resources Management Project (NRMP).

## **(2) Agroforestry Model No. 2 – Mango/fuel wood inter-planting**

In this model, mangos would be planted at 10 x 10 m spacing (i.e. 100 trees per ha) and inter-planted with approximately 1,000 fast-growing fuel wood species (e.g. Kakawate-*Gliricidia sepium*) at 2 x 2 m spacing. The inter-plantings would be shaded out as the mango canopies expand. Initial plantation establishment, including replanting as needed, would be completed in three years. Fuel wood harvests would begin in the second year and provide income to help defray maintenance costs after the initial three year establishment phase.

## **(3) Agroforestry Model No.3. – Fruit orchard**

This model would consist of 400 fruit trees planted at 5 x 5 m spacing. Additionally, five erosion control hedgerows would be planted following the contour of the land and spaced about 20 m apart. The fruit trees would be planted between the hedgerows. Initial plantation establishment, including replanting as needed, would be completed in three years. Meanwhile, hedgerow establishment would reduce soil erosion thereby creating conditions favorable for planting of short-term cash crops between the trees (e.g. corn, peanut). Cash crops could be grown for several years while canopies of the fruit trees are still small. Thus, beneficiaries would have a source of income to help defray maintenance costs after the initial three year establishment phase.

## **(4) Agroforestry Model No 4. – Erosion control hedgerows**

The principal objective of this model would be to prevent soil erosion and loss of moisture in fields planted to short-term cash crops. Twenty erosion control hedgerows would be planted at 5 m intervals on contours across the slope. Implementation would be completed in one year.

## **(5) Agroforestry Model No 5. – Improved fallow**

Introduction of improved fallow systems would upgrade the methods now used to restore fertility on idle land that will be planted in the future. Perennial legumes<sup>37</sup> would be planted at 2 x 2 m spacing (2,500 hills per ha). This would be combined with lodging of cogon (*Imperata cylindrica*) and other fire-prone grasses, and payment of a “no-fire” bonus. Implementation would cover a period of three years.

### **5.4.2 Silvi-pasture Model**

This model is designed to increase the grazing capacity per hectare, while concurrently contributing to rehabilitation/restoration of the watershed. Mixtures of pasture grass and legumes would be planted at 2 x 2 m spacing (2,500 per ha). Vegetative planting materials (slips, runners, tillers) would be used to establish the grasses. The pasture legumes would be planted by direct seeding. In both cases, the planting would be done in cultivated spots from which all rhizomes of cogon, themedra, talahib and similar low quality grasses would be removed. Additionally, fodder tree and bush species would be planted in five erosion control hedgerows at 20 m spacing along the contour of the land.

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<sup>37</sup> Centrosema pubescens, Pueraria javanica, Macroptilium atropurpurea, Calopogonium munocoides, Stylosanthes guyanensis.

Live fences would be planted on the boundaries of one-hectare (1 ha) plots that can be grazed alternatively, thus allowing time for the pastures to recover after grazing. To encourage fire prevention, a “no-fire” bonus system would be put in place. Implementation of this model is estimated to take three years.

## **5.5 Support Services**

All six models summarized above have the potential to increase farm income, and improve watershed conditions. It is important to point out that labor will be the principal input for implementation. In the interests of sustainability and replicability, labor should (if it is realistic) be contributed by the beneficiaries, either as individuals or communally through the traditional *bayanihan* system<sup>38</sup>. However, external support will be needed and is proposed for the following:

- Extension services for agriculture, agroforestry and livestock management including pasture development;
- Seeds and seedlings of improved varieties, produced in nurseries directly managed by the project;
- Small-scale infrastructure, including part of the wages necessary for implementation, with the balance provided by the beneficiaries as counterpart through volunteer labor;
- Training and cross-visits; and
- Community mapping.

The proposed plan recommends organization of teams of extension agents (specialists) to work at project sites. These teams would provide the services and accomplish the activities indicated above. Additionally, the teams would develop community capacity to continue promoting improved land use technology, and/or the ability to access technology from government and non-government agencies. The teams would spend approximately three years at each site, and subsequently rotate to another site.

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<sup>38</sup> Mutual labor exchange by community members.

## **CHAPTER 6 CONCLUSION**

There herein proposed plan is only one component of a much larger plan that includes forest management, soil conservation infrastructure, social development and strengthening of government and non-government institutions. In the next few months, discussions with GOP officials, PO leaders and members and other stakeholders will help refine the plan.

But at this stage, it is essential to point out that even if all proposed targets are achieved, this would only begin the restoration/rehabilitation process. Moreover, many of the underlying factors contributing to non-sustainable land use must be addressed outside the watershed. For instance, the lack of alternative employment opportunities will likely continue to propel lowland-to-upland migration in the near term.

The employment issue goes beyond the immediate purview of this plan. However, if proposals designed to increase productivity in the uplands are applied in the A&D lowlands, this would help diminish pressure on the watershed. Most of the proposals are equally valid in both lowland and upland situations. In fact, due to fewer problems with terrain, comparatively better soil and closer access to markets and services, the anticipated results of measures proposed herein would likely be easier to achieve in the A&D lands. Furthermore, higher productivity on the A&D lands is perhaps the most feasible option for alleviating unemployment at present. This has been recognized in recent government pronouncements identifying the agriculture sector as the principal engine of economic growth in the foreseeable future.

Hopefully therefore, the proposals presented in this document will be considered by lowland planners and decision-makers, in addition to stakeholders in the uplands. From the perspective of people's participation, coordinated implementation in both the uplands and the lowlands would respond to a situation that is often overlooked. Seasonal migration from uplands to the lowlands happens continuously. In other words, many people spend part of their time working in each of these locations. Wherever land improvement measures are effectively applied, people and their organizations stand to benefit. In the process, the goals of watershed restoration and rehabilitation will come closer to being realized.