

## 第十章 初期環境影響調査 (IEE)

### 10.1 目的

国際協力機構 (JICA) の環境ガイドラインによれば、初期環境影響評価 (IEE) は、開発調査に関する環境影響評価を手早く実施するためのひとつの手段であるとされている。IEE は、開発調査に係る環境配慮の初期段階であり、環境に対する影響の詳細を調べる環境影響評価 (EIA) の必要性は、通常 IEE の結果によって決定される。IEE の技術的目的は下記のとおりである。

- 計画されている事業に係る開発計画の内容を正確に把握する。
- 調査対象地及び周辺の自然環境と社会環境の現況を短期間で調査する。
- 計画された事業によって発生しうる負の影響を手早く予測する。
- 影響を特定し、EIA が必要かどうかを判断する。
- EIA が必要な場合には、業務指示書 (TOR) を作成する。

### 10.2 JICA の環境配慮

#### 10.2.1 一般手順

JICA は、各種開発セクターの一般的な環境配慮ガイドラインを持っている。その中で、本調査では「Guidelines for Environmental Considerations on Forestry (XV)<sup>1</sup>」を採用した。このガイドラインの原則は、持続可能な開発である。

IEE は通常 M/P 或いはフィージビリティ・スタディー (F/S) の初期段階に実施されるため、開発事業の初期段階に可能性の高い環境負荷を感知することができる。したがって、IEE は EIA のスコープに係る重要な情報を提供し、EIA をより効果的なものとする。

IEE の基本は、可能性のある環境影響に対するスクリーニングと、EIA のためのスコーピングを行うことである。環境スクリーニングは、必ずしも定量的データに基づく必要はなく、可能性のある環境影響に係る定性的な分析を基に、EIA の必要性を検討することを主な目的とする。

IEE によるスコーピングは、負の環境影響を引き起こす可能性の高い要因を認知するためのものであり、JICA はこの作業を適切に効果的に行うためにチェックリストの活用を推奨している。計画される開発事業によって影響を受けると考えられる環境要因を認知することは、後に実施される EIA 調査において、環境への影響度を予測するための適切な環境指標の選定に役立つものである。

<sup>1</sup> JICA (1994) Guidelines for Environmental Considerations on Forestry (XV)

### 10.3 比国における環境影響評価制度(EIS)

#### 10.3.1 概要

比国の環境影響評価制度(EIS)に係る規制、規則の担当機関は、環境天然資源省(DENR)の環境管理局(EMB)である。

EIS がフィリピンの環境政策として確立されたのは、1977年の大統領令 1151 号による。この大統領令では、環境にとって重大な影響を引き起こす可能性のある事業(ECP)や環境面から価値の高い地域(ECA)内で計画されている事業について、環境応諾証書(ECC)を取りつけることを義務付けている。この EIS は、1996年の DENR 省令 96-37 によって強化、改訂された。その主な目的は、以下の通りである。

- 可能な限り早い段階で事業に対する環境配慮を取り入れる。
- 計画、規制、管理手段としての効率性を向上させるため、現在の環境影響評価の実施手続きを簡略化する。
- 事業が社会的に受け入れられ、また可能な限りの環境配慮を行うために環境影響評価の過程で住民の参加に焦点を当てる。

#### 10.3.2 環境に影響を与える可能性の高い事業( Environmentally Critical Project: ECP)

環境に影響を与える可能性が高いと考えられる事業は、DENR 省令 96-37<sup>2</sup>の手引書に記載されている。そして林業関連事業で対象となる活動は、以下の通りである。

- 森林伐採
- 製材事業
- 国有林/民有林における動物の移入(外来種)
- 森林の占有
- マングローブ林における林産物の採取
- 放牧

#### 10.3.3 環境影響を受けやすい地域 (Environmentally Critical Area: ECA)

ECA は、大統領令第 1586 の 4 節で貴重な地域として指定を受けた地域と同じく、事業の実施等により環境影響を受けやすい地域のことで、1981年の大統領布告 2146 号に掲載されている。ECA は以下の地域を含んでいる。

- 全ての法定保護区、保全流域、野生生物保護区、鳥獣禁猟区
- 観光資源としての景勝地域
- 比国在来の野生動植物種のうち、絶滅危惧種及び希求種の生息地
- 史跡、考古学分野及び自然科学分野において貴重な地域
- 少数民族や先住民のコミュニティーが伝統的な利用を行っている地域
- 天災が頻繁に発生する地域(地理的危険、洪水、台風、噴火等)

<sup>2</sup> DAO 96-37 のための実施手引き 環境管理局(EMB) DENR

- 急傾斜地
- 農業最適地
- 再生可能な帯水層
- 重要な水源
- マングローブ林
- サンゴ礁

ECA 内に位置する事業は、DENR の地区事務所の管轄となる。したがって、全ての EIA/IEE の結果は地区事務所に提出され、審査及び評価を受けなければならない。

#### 10.3.4 一般的な作業手順

DENR 省令 96-37 に規定されている主な内容は、以下の通り手引書に記載される。

##### (1) スコーピング

スコーピングは、EIS を実施する上で、対象評価項目、事業活動、代替案、影響の範囲を規定する。可能性のある環境影響を十分に評価するためには、全ての環境配慮が適用されなければならない。

##### (2) EIS 及び IEE

環境に影響を与える可能性の高い事業(ECP)には、環境影響評価報告書を環境管理局(EMB)に提出することが、一般的に義務付けられている。しかしながら、環境影響を受けやすい地域(ECA)については、通常地区事務所に IEE 報告書を提出することになっている。IEE は、EIS と比較して、収集した情報の量と質において簡略化された環境レビューである。IEE を作成する上で、スコーピングは必須事項ではなく、ECC を発行するかどうか、また比較的短期間での EIS を実施するのかどうかによって決まる。

##### (3) EIS/IEE レビューの日程

EIS 及び IEE の審査はそれぞれ受領後、120 日及び 75 日間以内に完了するよう規定されている。

##### (4) 住民参加と社会容認

EIS における住民参加と透明性は ECC 発行の判断材料として必須条件である。DENR 省令は、特に事業によって影響を受ける地域社会等の利害関係者について十分考慮されなければならないと規定している。

##### (5) 環境モニタリングと補償基金

環境モニタリングの実施には資金を要する。環境モニタリング基金 (EMF) は、主に CEE が発行された後、事業運営のモニタリングに利用される。一方、環境補償基金(EGF)は、事業によって生じた被害に対する復旧と補償のために使われるものである。

## 10.4 初期環境影響評価(IEE)の結果

### 10.4.1 本調査におけるスクリーニング結果

本調査におけるチェックリストは、JICAの森林分野ガイドラインを参照しながら作成した。M/Pにて提案された計画やプログラム(第八章参照)の全てはスクリーニング評価の対象であり、その結果を表10.4.1に示す。ここでは明らかな負の影響は特定されなかった。本調査において、このIEEで対象となった流域管理の主要コンポーネントは、以下の通りである。

- 土地利用計画
- 森林管理計画：復旧及び再生計画
- 資源開発及び管理計画
- 水土保持計画
- 生計向上事業開発計画
- 組織・制度強化計画（DENR、地方自治体及び住民組織/先住民組織）

### 10.4.2 主な環境影響

#### (1) 自然環境

第一章に示した通り、M/Pの最も重要な目的の1つは、持続的な資源利用を達成するための流域管理計画を策定することにある。また自然環境においては、荒廃林地を造林及び復旧事業によって土壌流亡の軽減を図ることが主な目的である。しかし、本調査では、野外での実測を行っていないため、この効果を定量化することは難しい。これを実施するためには、雨量、水文、土壌流亡等のデータを系統的に実測する必要があるが、これには時間と費用を要する。したがって本調査における土壌流亡の効果は、USLE(Universal Soil Loss Equation)を応用した推定値を利用した。

M/Pでは、法定保護区の範囲を拡張することが提案している。法定保護区内における管理活動は、環境保全を基本としており、特に老齢林や蘚苔林は禁伐と天然更新を適用している。残存林の管理においては、移入種の植栽を避け、在来種を利用する林相改良(FSI)を導入することを提案している。さらに、流域の保全及び管理のため、特用林産物及び木材の採取は規制される。

法定林地内の活動は、法定保護区内の管理と異なり生計向上に焦点が当てられている。しかし、老齢林及び蘚苔林は法定保護区と同様に保全されるべきである。造林地内での伐採は許可されるが、択伐及び小規模の皆伐を採用することによって負の影響を最小限に抑えることを提案している。

造林事業は、流域の水源涵養及び土壌流亡の軽減に寄与するものである。上記の通りM/Pでは、いくつかの森林資源利用を提唱しているが、生態的に許容される範囲内に管理するよう提案している。したがって、M/Pにおけるこれらの計画は、自然環境にとって正の影響をもたらすと予測される。

#### (2) 社会環境

M/Pでは、住民移転は計画されていないが、事業についての地元住民間での話し合いが不十分であったり、参加型アプローチが適切でなかったりした場合には、住民との間に軋轢を引

き起こす可能性がある。本 M/P では、CBFM 合意書/先住共同体領有地域認定証書 (CADC) 対象地区で実施する参加型流域管理を普及させることを中心的な提案事項としているが、地域内ではバランガイ (Barangay) や郡の境界線が重複していることから、何らかの軋轢を生じる可能性がある。したがって、計画が導入される前に、住民との合意形成を得るための話し合いを十分に行うことを提案している。

その他 M/P で提唱している計画に関連して予測される環境影響は、主に正の影響である。M/P で提案されている生計向上計画では、地元住民の生活基準を向上させるが、住民の生活スタイルを改変するような負の影響は無いと予測される。

DENR/国家先住民委員会 (NCIP) や地方自治体、住民組織/先住民組織の組織強化計画では、正の影響が予測される。現在のところ、CBFM 合意書/CADC 対象地区の開発・管理の実施事業は限られており、最も重大な問題は職員能力の不足である。したがって、特に DENR 及び NCIP 職員の増強と彼らの知識・技能の強化を行うことは、CBFM/CADC 地区での事業の円滑な運営を可能とし、流域管理全体の成功に繋がるものである。



## 第十一章 結論及び提言

### 11.1 マスタープラン (M/P) の結論

#### (1) M/P 実施の緊急性

法定保護区及び法定林地における荒廃地の拡大状況から、調査対象地域における流域本来の機能を回復させるために、M/P の早期実施が強く望まれる。

特に、適切な流域管理を促進させるためには、下記の事業実現が極めて重要である。

- i) 法定保護区及び法定林地の境界の見直し
- ii) 調査対象地内の優先 19 小流域を対象とする森林セクタープロジェクト・フェーズ 2 (FSP-2) の実施
- iii) 優先小流域内の先住民共同体領有地域認定証書 (CADC) 発給地域の流域管理計画の実施。これは、現況の CADC 地区のうち 77.8% が計画法定保護区内に存在しており、マガット川及びカガヤン川の上流域としての極めて重要な役割を担っているためである。

#### (2) 流域管理基金

持続可能な流域管理の実現のためには、継続的で適切な資金・人的資源・物資の投入が必要であり、その中で比国政府にとって特に重要なのが流域管理のための資金調達であることが明確となった。資金調達のために、いくつかの可能性のある選択肢が考えられる。たとえば、国家予算の配分、ドナー国からの資金援助、エネルギー省エネルギー規則 1-94 で認められた現行の信託財産の利用、そして利害関係者らの費用分担などである。

選択肢の中で、既に合法的に認められた信託財産を含む利害関係者の費用分担については、最も持続的で適切な資金の確保が見込まれる方法と考えられる。この状況から、費用分担制度 (Cost Sharing Mechanism) の確立は、M/P の実施後の流域再生のために必要不可欠である。

### 11.2 実施に向けた提言事項

#### 11.2.1 M/P の実施に係る総合的な提言

- (1) 上記の理由から、M/P を実施するべきである。
- (2) 環境天然資源省 (DENR) は、国際協力銀行 (JBIC) の資金援助の下、FSP-2 の実施を推進するべきである。
- (3) 国家先住民委員会 (NCIP) は、先住民共同体領有地域認定証書 (CADC) 発給地域での流域管理計画の実施にあたり資金源を確保すべきである。
- (4) M/P で提案している法定保護区及び法定林地を合法化することと、十分な調査を実施してその地域の境界線を現場で設定する作業をすべきである。

## 11.2.2 M/P の実施のための環境方針の改善

### (1) 土地利用に係る軋轢

調査対象地域内の土地利用に係る軋轢の多くは、国家統合保護地域区法 (NIPAS Act: RA 7586)、比国採掘法 (Mining Act: RA 7942) 及び先住民権利法 (IPRA Law: RA 8371) の管轄地域の境界重複にみられる。同じ土地においてそれぞれの機関が次のような関心事項を持っている。i) 生物多様性及び特別景観の保護、ii) 同地域における先住民の権利、iii) 採掘によって得られる資本と収益可能性。M/P の実施にあたりこの問題を解決すべきである。

徹底的な議論や交渉は解決への一手段であるので、DENR と NCIP が鉱山地質科学局 (MGB)、先住民、採掘企業、そして一般の公共機関といった利害関係者を巻き込んで実施する必要がある。

### (2) マガット川森林保護区における生産活動

畜産は CBFM 住民組織にとって考慮する価値のある村落事業の選択肢の一つである。マガット川森林保護区内には放牧に利用されてきた地域がある。この地域で畜舎飼いを含んだ適切な改良牧畜と、放牧地域に改良牧草地管理が実施されれば、地域からの土壌流亡は軽減することが可能である。M/P ではこの点とマガット川流域の現況土地利用状況を踏まえて、現実的な観点から混牧林地 57,100 ha をマガット川森林保護区の一部を含む計画法定林地内に含める計画としている。

従って、i) 現在上程中の「国家土地利用法/持続的森林管理法」に放牧地/牧草地が法定林地の下位土地区分に含まれ、ii) 国家森林基本法 (PD705 号) は、指定流域 (critical watershed) の定義を NIPAS 法の土地区分に係る指針に合致するように改定するべきである。

### (3) 法定林地からの風倒木処理に関する方針

持続的な維持管理下で天然資源の利用を行うためには、安定した政策が重要であり、不適切な政策が行われると住民組織を混乱させてしまう。

ある州において風倒木の利用に係る違反行為が一箇所でも見つかり、全ての CBFM 合意書取得対象地区に対して、資源利用計画 (RUP) の承認手続きが停止処分を受けることがある。この処分によって、他の州の住民組織は CBFM 事業に対する意欲を失うことから、このような処分は疑いのある地域だけに施行されるべきである。

### (4) 造林地における木材の伐採及び運搬の許可

森林管理事業に関わる住民らの大半は、以前 DENR と地方自治体の指導の下、成長の早いヤマネ (*Gmelina*) などの樹種を植林してきた。また、伐採周期が最短の樹種は収入を得やすいことから、調査対象地域の全ての地域において人々はこの樹種を好んで植えている。しかしながら、立木の所有者は、CENRO からの伐採許可を取り付けるための立木の所有権を証明しなければならないが、通常この手続きは膨大な時間と手間のかかる手続きを必要とする。住民の要求に合わせ、この規則の中身を再検討し合理化すべきである。さもなければ、手続きの手間から住民は意欲を失い、DENR はその信用を失うことになると考えられる。



上記の問題を受けて提案される手順は、住民組織の代表者が立木の所有権を証明し、事業管理事務所長（PMO）によって許可証を発行することである。そうすれば、許可証取得のために必要な CENRO 事務所での手続きを簡略することができる。

DENR 大臣（Elisea Gozun）は、比国林産物生産組合（PWPA）創立 52 周年記念の式典において、私有地における造林木の生産活動を自由化するとの声明を発表した。この政策は、同様に私有地における人々の植林意欲を促進させた。CBFM 地区内の個人による植林地で、ここから生産される木材（籐や竹を含む）もまた、同政策の対象となった。

#### (5) 私有地における造林事業促進のための免税措置

また、上記式典において、DENR 大臣は DENR と地方自治体管理局（DILG）に対して、私有地で植林を行った土地所有者には税金に係るインセンティブの創出を求めた。そのインセンティブとは、5 年間の土地税の免除である。これは、私有地所有者らが調査対象地内で植林事業を実施するための原動力となるので推進すべきである。

#### (6) 流域から供給される水資源の価格に関する政策

水資源の制御、監理、利用規則、開発、及び保護に係る権限は、公共事業道路省（DPWH）の国家水資源局（NWRB）にある。国家灌漑庁（NIA）及び地方給水局（LWD）等による水利用に当たっては、国家水資源局の認可を得なければならない。しかしながら、NWRB は徴税を伴う水の価格設定は行っていない。

M/P 事業実施中に、水源を有する地方自治体への報酬のメカニズムも含めて、水の価格設定のためのシステムが開発されるべきである。それによって、地方自治体は流域の水源涵養機能を維持するためのプログラムを実施し、品質の高い水を必要な量、期間、提供する可能性が高まる。

### 11.2.3 M/P の実施に向けた制度の改善

#### (1) 地方自治体に対する小流域管理権の委譲

地方自治体に対して地域開発と資源管理に係る明確な役目が与えられれば、地方自治体はより多くの責務を負うことが可能になる。これらの責務を負うことにより、地方自治体は地域の住民のニーズに対してすばやく対応することが可能になり、そうすることにより事業の実施能力を高めることが期待できる。流域管理権の委譲によって、地方自治体は意思決定の機会を得ることで、住民に対しても主体的な説明をすることが可能となる。また、住民にとっても、地方行政への多くの参加機会を得ることが可能となる。

現在、複数の小流域の維持管理と保護が、調査対象地内の地方自治体に委譲されている。このような委譲は将来州政府または郡、バランガイ（*Barangay*）レベルに対しても行われるであろうが、委譲される自治体は、住民への対応、財務、人事に係る管理責任を伴うことになり、ことからその選定には十分注意を払う必要がある。

#### (2) 水資源の共同管理

マガット川下流域保安林 24,000 ha の管理において、DENR と Nueva Vizcaya 州政府が実施してきた共同管理はよい効果をもたらしている。

この共同管理のメカニズムは法定林地及び流域管理のアプローチのひとつであり、また DENR と地方自治体の共同作業を創出したという点において革新的な手法である。可能と判断されれば、この保安林の管理は最終的には流域管理は州レベルの地方自治体に委譲されると予測される。この流域管理の手法は、他の流域管理においても事例として参考にされる価値がある。

### (3) 遺贈樹プログラム

遺贈樹プログラムは、指定された国有地及び私有地において、個人が参加する植林プログラムである。

このプログラムは、個人に対して直接的な環境改善に参加する機会を与えるとともに、木材や果実の収穫による収入機会を創出するものである。学校に通う子供達は、自身の学費や将来の生計向上のための資金として、このプログラムを利用した植林に意欲的である。現在、Nueva Vizcaya 州及び Quirino 州でこのプログラムは導入されている。これは Isabela 州及び Ifugao 州においても同様に採用できると考えられる。また、都市部や居住区近辺での流域管理の補足的な事業として実施されていくことが期待される。

### (4) 継承された植林地、ムヨン (Muyong) 、共有林、アラア (Ala-a)

Ifugao 州には、法定林地内に一族により伝統的なシステムで管理される植林地が存在する。ムヨン (muyong) と呼ばれるこの植林地は、木材及び特用林産物の生産と、棚田に隣接した小規模な流域の保全を目的として設置されている。

伝統的な共有林(Ala-a) は Muyong ほど広範ではないが、森林資源の伝統的管理の上で重要な意味を持っている。コミュニティを形成する人々の総意の下、かれらは森林資源を分かち合い、火入れを行わずに、必要以上の採取を行わないことで、彼らの共有林を管理している。森林は、家庭用水や灌漑用水を供給する水源として保護され、木材としての利用はされていない。

これらの伝統的流域管理システムを、比国政府は Muyong や Ala-a の所有者に対して法律上保証すべきである。

管理方法を選択する際に、その土地に伝統的管理手法が存在する場合は、その手法を遂行すべきである。また、森林が伝統的な手法で育成されているところでは、苗木の提供や技術的支援が実施されるべきである。伝統的な管理が行われている森林では、環境への影響が低いにもかかわらず、利用する住民へ十分な収入をもたらす。したがって、伝統的森林管理の植林と特用林産物の利用は奨励されるべきである。

## 11.2.4 CBFM のイニシアティブ

### (1) CBFM 合意書取得対象地区の適正面積

調査対象地域内の法定保護区及び法定林地の総面積は約 660,600 ha であり、この地域に居住する世帯数は約 71,000 と推定される。この面積と人口から単純に計算すると、一世帯あたり割り当て可能な面積は 9.3 ha となる。

対象地では 38 の CBFM 合意書取得対象地区が存在し、その面積は 59,303 ha、住民組織メンバー数は 3,932 人にのぼる。メンバー 1 人当たりの平均面積は 15.1 ha となり、これは上記 1

世帯あたりの面積の約2倍にあたる。つまり、対象地全体では、法定保護区を含む1世帯当たりの利用可能な面積が9.3haであるのに対し、既存のCBFM合意書で付与される面積は大きすぎるといえる。

しかしながら、CBFMに係る法律や規制によると、CBFMで認められる地区の面積については何も規定されていない。したがって、住民組織が彼らの非公式ながら領域として利用している地域以上の広大な面積をCBFMの対象地として申請した場合に、政府は法律上規制することが困難である。つまり、住民組織は、伐採可能な豊かな森林を含む広大な地域をCBFM合意書取得対象地区として申請する可能性を有するのである。

こうした可能性は、将来CBFM合意書取得対象地区が数多く承認されてきた場合に、土地不足からCBFMを取得できない住民組織の出現など、軋轢を引き起こす元になる可能性を有する。したがって、1住民組織に対して承認できるCBFM合意書取得対象地区面積に制限を設けるべきである。

## (2) 適正な共同体資源管理計画 (CRMF) の策定

適正な共同体資源管理計画策定 (CRMF) に係るガイドラインはDENR省令97-12号として公布されている。既存の適正なCRMFが単に資源管理体制についての概念しか記述していないのは、これらのガイドラインに必要な定量的な計画を規定していないためである。

CBFMプログラムを実施する住民組織がCBFM合意書取得対象地区内の天然資源を持続可能な方法で保護、保全、復旧、開発そして管理していくために、CRMFにおいて定量的な目標を具体的に規定すべきである。

したがって、現在のガイドラインは、適正なCRMFが少なくとも地形条件、傾斜分布、現状の土地利用・植生、そして1万分の1の縮尺の地形図を用いて、土地利用計画が定量的な方法で策定できるように修正する必要がある。

このために、適正なCRMFの策定には社会学的手法による伝統的・地元の情報を収集するだけでは十分ではなく、同時に科学的な手法による関連情報の収集も重要となる。



表



表 2.3.1 第二地区 (Region-2) における州別現況及び将来の土地利用 (1992、2022)

Land use type	Region Total		Batanes		Cagayan		Isabela		Nueva Vizcaya		Quirino	
	1992	2022	1992	2022	1992	2022	1992	2022	1992	2022	1992	2022
<b>1. Production land use</b>	1,593,314	1,533,256	457	457	554,643	531,877	698,028	677,696	201,291	192,982	138,895	130,244
1.1 Croplands	772,859	772,859	457	457	248,397	248,397	400,054	400,054	79,764	79,764	44,187	44,187
1.2 Fisheries	9,352	17,238			9,352	9,352	2,184		1,627			4,175
1.3 Production forest	811,103	751,045			296,894	274,128	297,974	277,642	121,527	113,218	94,708	86,057
Residual dipterocarp	313,353	219,348			125,336	87,736	135,257	94,680	35,347	24,743	17,413	12,189
Grazing rangeland	400,380	220,208			151,768	83,472	135,546	74,550	55,393	30,466	57,673	31,720
Indus. forest plant'n	44,279	104,336			11,600	34,365	13,200	33,532	15,553	23,862	3,926	12,577
Agro-forestry (ISF)	53,091	113,148			8,190	30,955	13,971	34,303	15,553	23,543	3,926	24,347
Community forestry		94,005				37,600		40,577		10,604		5,224
1.4 Mining areas	128,501	155,020	20	20	20,872	25,000	51,396	62,000	29,746	36,000	26,487	32,000
<b>2. Protection land use</b>	883,052	883,052	20,323	20,323	250,112		272,515	272,515	179,942	179,942	160,160	160,160
2.1 NIPAS areas	260,552	260,552	20,323	20,323			240,229	240,229				
2.2 Non-NIPAS areas	862,729	862,729			250,112	250,112	272,515	272,515	179,942	179,942	160,160	160,160
Reserved 2 <sup>nd</sup> growth												
Forest	373,663	373,663			105,039	105,039	73,288	73,288	92,829	92,829	102,507	102,507
Mangroves	4,459	4,459			3,398	3,398	1,061	1,061				
Old growth	277,689	277,689			86,065	86,065	152,616	152,616	3,408	3,408	35,600	35,600
Mossy forest	93,466	93,466			30,500	30,500	42,006	42,006	15,560	15,560	5,400	5,400
Pine forest	1,600	1,600							1,600	1,600		
Parks	6,811	6,811			3,530	3,530	819	819	2,462	2,462		
Grassland/brush land & plantations within areas about 50% slope & 1000m elev.	105,041	105,041			21,580	21,580	2,725	2,725	64,083	64,083	16,653	16,653
<b>3. Built-up areas &amp; Infra/ utilities</b>	207,449	267,685	202	380	95,512	118,278	95,913	116,245	9,157	17,466	6,665	15,316
<b>4. Unclassified</b>	178		178									
<b>Total Area</b>	2,683,993	2,683,993	21,160	21,160	900,267	900,267	1,066,456	1,066,456	390,390	390,390	305,720	305,720

Source: Regional Physical Framework Plan, Region II, 1993-2022

表 2.3.2 CARにおける州別土地利用面積(1990年)

Land Type	Abra		Benguet		Ifugao		Kalinga Apayao		Mt. Province		Regional Total	
	ha	%	ha	%	ha	%	ha	%	ha	%	ha	%
<b>I Forestlands</b>												
1 Protection Forests	76,742	16	44,996	9	58,580	12	227,027	46	84,568	17	491,913	
(1) Old Growth	41,409		6,672		11,625		133,960		23,146		216,812	
(2) Mossy Forest	12,200		2,325		18,000		70,032		39,036		141,593	
Pine forest on the (3) Area >84% slope,	5,825		17,242		1,330		1,308		3,747		29,452	
Other vegetation on the (4) Area >50% slope,	17,251		0		24,249		20,389		16,514		78,403	
(5) Areas established by law											0	
- Critical watersheds	0		9,895		0		0		0		9,895	
- National parks	57		8,862		3,376		1,338		2,125		15,758	
<b>2 Production Forests</b>	222,393	22	132,645	13	167,789	17	397,058	40	76,914	8	996,799	
Pine forest on the (1) Area <84% slope,	6,441		113,414		475		409		14,040		134,779	
Other vegetation on the (2) Area <50% slope, EI	208,622		575		161,089		362,026		52,766		785,078	
(3) Agriculture areas	6,500		10,932		6,225		34,180		10,108		67,945	
(4) Mineral lands											0	
-Leased	830		6,441		0		443		0		7,714	
-Patented	0		1,283		0		0		0		1,283	
<b>II A&amp;D</b>	98,420	29	87,897	26	25,409	7	80,679	24	48,251	14	340,656	
Built-up Area & Others												
<b>Total</b>	397,555	22	265,538	15	251,778	14	704,764	39	209,733	11	1,829,368	

Source: DENR-CAR, ENR Regional Development Plan for the Medium Term 1993-1998, 1993



表 2.3.3 CAR における州別将来の市街地域面積(2023 年)

	Abra	Benguet	Ifugao	Kalinga	Apayao	Mt. Province	CAR
A & D lands & other lands <18% slope exclusive of agricultural lands and protection forest	45,300	13,770	5,580	9,635	11,950	9,190	95,425
Areas of the public domain 19-30% slope exclusive of agricultural lands and outside of protection forest	8,050		3,020	1,970	4,770	2,595	20,405
Areas of the public domain 31-50% slope exclusive of agricultural lands and outside of protection forest	17,450	1,600		4,550	7,650	800	32,050
Potential agricultural expansion areas for probable conversion to urban use	3,103	900	732	4,042	7,649		16,426
Total	73,903	16,270	9,332	20,197	32,019	12,585	164,306
Existing built-up areas	2,664	4,595	490	371	600	1,450	10,170
% average annual increase	13.10	4.79	11.53	15.96	15.87	8.33	10.85

Source: CAR RFPF, 1994-2023

表 2.4.1 Quirino 州の総合開発計画目標 (1999-2003年)

Objectives	Targets	Activities	Estimated Costs (of areas targeted)					Total (P'000)
			1999	2000	2001	2002	2003	
A. Protected Area and Wildlife Services 1. Manage effectively natural resources for sustainable utilization and ecological balance 2. Develop and promote eco-tourism	1. Management and protection of IPAS areas	1. Establishment of buffer zone (ha)	392	392	391	1175	1175	26,318
		2. Management of buffer zone (ha)	392	784	1175	1175	1175	8,814
		3. Prepare Mgt. Plan			1		1	200
		4. Mgt of virgin forests (ha)	46,170	45,220	44,270	43,320	42,370	
		5. Resource protection (ha)	92,730	92,740	92,720	92,720	92,710	
		6. Resource restoration (ha)	90	190	280	370	470	
B. RP-German Project	1. Upland communities as forest managers which will provide technical assistance for development alternative source of income	1. Conservation and protection of natural forest	36,137	29,362	14,316	9,384	26,833	116,032
		2. Forest plantation dev't & rehabilitation of degraded forest 3. Agro-forestry 4. Agriculture 5. Infrastructure						
C. CBENRM Project	Cover 14,975 hectares of watershed areas	1. Establishment & maintenance of on-farm agro-forestry model farms	159,780	210,320	39,520	27,360		436,980
		2. Dev't of soil and water conservation structures	328	328	328	323.5	264	1,571.50
		3. Provision of perennial tree seed & nursery materials	30	30	30	15	15	120
		4. Support of field research						
		5. Provision of farm tools & equipment						
		6. Establishment & maintenance of nurseries	50	40				90
		7. Reforestation thru ANR	132					132
		8. Infrastructure & facilities	192.16	99.16	71.62	46.68		409.68
		9. Training	480	480	480	360		1,800
	105					105		
	682.8	634.2	628			1,945		

Source: Comprehensive Development Plan of the Province of Quirino

表 3.3.1 流域管理に係る DENR (PENRO) の機能(1/3)

Offices/Bureaus	Powers/Functions	Issuances
DENR	<ol style="list-style-type: none"> <li>1. Formulate, implement, and supervise the government's policies, plans and programs pertaining to management, conservation, development, use and replenishment of natural resources</li> <li>2. Promulgate rules and regulations in accordance with law governing exploration, development, conservation, extraction, disposition, use and other commercial activities causing the depletion and degradation of natural resources</li> <li>3. Exercise supervision and control over forestlands, alienable and disposable lands, and mineral resources, and impose appropriate fees, charges, rentals and collect such revenues</li> <li>4. Establish policies and implement programs for                         <ol style="list-style-type: none"> <li>4a. the preservation of cultural and natural heritage through wildlife conservation and segregation of national parks and other protected areas</li> <li>4b. greater people participation and initiative in natural resources management</li> </ol> </li> <li>5. Promulgate rules and regulations necessary                         <ol style="list-style-type: none"> <li>5a. to harness forest resources in a sustainable manner to assist rural development, and support forest-based industries ...</li> <li>5b. on the issuance of co-production, joint venture or production sharing agreements, licenses, permits, leases, concessions ....</li> <li>5c. for the conservation of the country's genetic resources and biological diversity and endangered habitat</li> </ol> </li> </ol>	EO 192, 1987
Regional Offices	<ol style="list-style-type: none"> <li>1. Implement laws, policies, rules, regulations, plans, programs and projects to promote the sustainability and productivity of natural resources, social equity in natural resource utilization and environmental protection</li> <li>2. Provide efficient and effective delivery of services</li> <li>3. Recommend and upon approval implement programs and projects on forestry, minerals, and land management</li> <li>4. Evolve regional budget</li> <li>5. Supervise the processing of natural resources products and monitor the movement of said products</li> <li>6. Conduct field research for appropriate technologies recommended for various projects</li> </ol>	EO 192, 1987  DAO No. 1, Series of 1988
PENRO	<ol style="list-style-type: none"> <li>1. Absorb the functions of the District Offices of bureaus which are abolished</li> </ol> <ol style="list-style-type: none"> <li>1. Plans, coordinates, controls and update plans for the protection of the environment, development and conservation of natural resources</li> <li>2. Coordinate environmental and natural resources management activities in the province</li> <li>3. Enforce environment and natural resources laws, rules and regulations</li> <li>4. Investigate and recommend action to resolve claims and conflicts involving natural resources</li> <li>5. Supervise activities of holders of permits, leases, and licenses</li> <li>6. Evaluate performance of personnel in providing administrative and financial support to CENROs</li> </ol>	EO 192, 1987  DAO No. 1, Series of 1988

表 3.3.1 流域管理に係る DENR (PENRO) の機能(2/3)

Offices/Bureaus	Powers/Functions	Issuances
CENRO	<p>1. Absorb corresponding functions of District Offices of bureau which are abolished</p> <p>1. Undertake and implement projects for the development and conservation of natural resources at the community level</p> <p>2. Implement laws, rules and regulation for the protection of the environment and conservation of natural resources</p> <p>3. Maintain up-to-date data on environmental and natural resources conditions</p> <p>4. Conduct surveys of areas covered by applications for lease and permits</p> <p>5. Collect and account fees</p> <p>6. File in court criminal cases against violators of environment and natural resources laws</p> <p>7. Initiate the settlement of conflicts between or among users of natural resources</p>	<p>EO 192, 1987</p> <p>DAO 1, Series of 1988</p>
Forest Management Bureau (FMB)	<p>1. Recommend policies and programs for the effective protection, development, occupancy, management and conservation of forestlands and watersheds including grazing and mangrove areas, reforestation and rehabilitation of critically denuded forest reservations ...</p> <p>2. Advise regional offices in the implementation of above policies and/or programs</p> <p>3. Develop plans, programs, operating standards and administrative measures to promote the Bureaus objectives and functions</p> <p>4. Assist in the monitoring and evaluation of forestry and watershed development projects to ensure efficiency and effectiveness</p> <p>5. Undertake studies on the economics of forestry and forest-based industries, including supply and demand trends on the local, national and international levels, identifying investment problems and opportunities</p>	<p>EO 192, 1987; DAO 1, Series of 1988</p>
Ecosystems Research and Development Bureau (ERDB)	<p>1. Formulate and recommend an integrated research program relating to Philippine ecosystems and natural resources such as minerals, lands, forests as holistic and inter-disciplinary fields of inquiry</p> <p>2. Assist the Secretary in determining a system of priorities for the allocation of resources to various technological research programs of the department</p> <p>3. Provide technical assistance in the implementation and monitoring of aforementioned research program</p> <p>4. Generate technologies and provide scientific assistance in the research and development of technologies relevant to the sustainable uses of Philippine ecosystems and natural resources</p> <p>5. Assist the Secretary in the evaluation of the effectiveness of the implementation of the integrated research program</p>	<p>EO 192, 1987; DAO No. 1, Series of 1988</p>

表 3.3.1 流域管理に係る DENR (PENRO) の機能(3/3)

Offices/Bureaus	Powers/Functions	Issuances
Protected Areas and Wildlife Bureau (PAWB)	<ol style="list-style-type: none"> <li>1. Formulate and recommend policies, guidelines, rules and regulations for the establishment and management of Integrated Protected Areas Systems (IPAS) such as national parks, wildlife sanctuaries and refuge, marine parks and biosphere reserves</li> <li>2. Formulate and recommend policies, guidelines, rules and regulations for the preservation of biological diversity, genetic resources, the endangered Philippine flora and fauna</li> <li>3. Prepare up-to-date listing of endangered Philippine flora and fauna and recommend a program of conservation and propagation of the same</li> <li>4. Assist the Secretary in the monitoring and assessment of the management of the IPAS and provide technical assistance to the regional offices in the implementation of programs for these areas</li> </ol>	EO 192, 1987; DAO No. 1, Series of 1988
Mines and Geosciences Bureau (MGB)	<ol style="list-style-type: none"> <li>1. Recommend policies, regulations and programs pertaining to mineral resources development and geology</li> <li>2. Advise the Secretary on the granting of mining rights and contracts over areas containing metallic and non-metallic mineral resources</li> <li>3. Assist in the monitoring and evaluation of the Bureau's programs and projects to ensure efficiency and effectiveness thereof</li> <li>4. Develop and promulgate standards and operating procedures on mineral resources development and geology</li> <li>5. Supervise and control development and packaging of nationally applicable technologies on geological survey, mineral resource assessment, mining and metallurgy, the provision of geological metallurgical, chemical and rock mechanics laboratory service</li> </ol>	EO 192, 1987; DAO No. 1, Series of 1988 and RA 7942
Local Government Unit (LGU) PENRO	<ol style="list-style-type: none"> <li>1. Transformation of forest-based communities to become self-reliant through a sustainable system of production geared towards ecological stability</li> <li>2. Conservation, utilization and development of natural resources and the restoration/rehabilitation of denuded watershed and forest areas</li> <li>3. Development enforcement of environmental laws, rules and regulations devolved to the province</li> </ol>	Prov. ENRO

Sources: Executive Order 192, 1987. Providing for the Reorganization of the Department of Environment, Energy and Natural Resources, Renaming it as the Department of Environment and Natural Resources, and for other purposes

DENR Administrative Order No. 1, Series of 1988. Implementing Guidelines for the Reorganization of the Department of Environment and Natural Resources Pursuant to Executive Order No. 192

DENR AO No. 99-51, 1999. Prescribing a Detailed Definition of Functions for the Realigned Regional Divisions

Provincial Environment and Natural Resources Office, Bayombong, Nueva Vizcaya

表 3.4.1 一般及び特別プロジェクトに対するモニタリング・評価システム (1/3)

Offices/organizations Involved	DAO 99-38 SOP for Performance Monitoring	CBFMP (DAO 96-29)	DENR-CARP (DAO 99-28)	SIFMA (DAO 24 S1996)	FLGMA (DAO 99-36)	FSP (MC No. 2001-04)
People's Organization	Report monthly accomplishments to CENRO using Form O3			Member of team with LGU & CENRO with latter as team leader, regularly monitor and evaluate progress of SIFMA		1. Provides information to NGO conducting monitoring and evaluation 2. Helps assess results of evaluation, feedback NGO on results
LGU						1. Helps assess results of evaluation, feedback NGO on results
NGO				Member of team with NGO & CENRO with latter as team leader, regularly monitor and evaluate progress of SIFMA		1. Contract with Project to undertake physical validation of accomplishments, or the institutional and benefit monitoring 2. Physical validation is done 1 year after planting & at 6 months interval 3. Validation & final reports to be completed 4 months before completion of project 4. Presents results of monitoring and evaluation to PO, SUSIMO, CENRO, PENRO, Regional Office, & LGU
Operating/Implementing Unit, Project Managers	Measurement and report monthly actual performance, submit to CENRO prior to 25 <sup>th</sup> of month					
CENRO	Consolidate reports of field implementers and managers, submit to PENRO prior to 27 <sup>th</sup> day of month	Submit periodic report to PENRO for evaluation		1. Heads team with LGU and NGO monitor and evaluate progress of FLGMA 2. Submit periodic reports to PENRO for evaluation		1. Helps review evaluation, feedback NGO on results
PENRO	Prepares own report of accomplishment, submit to RED with the CENRO report prior to 30 <sup>th</sup> of month	Submit periodic reports and maintain database for all CBFMP projects in the province		1. Analyze and consolidate report and submit to RED with findings & recommendations 2. Maintain database for all SIFMAs within province		1. Helps review evaluation, feedback NGO on results

表 3.4.1 一般及び特別プロジェクトに対するモニタリング・評価システム (2/3)

<p>Offices/organizations Involved</p> <p>RED</p> <p>(Regional Coordinators for DENR-CARP)</p>	<p>DAO 99-38 SOP for Performance Monitoring</p> <p>Consolidates reports and submit to Planning and Policy Studies Office (PPSO), DENR not later than 10<sup>th</sup> of following month. Also forms validation team for quarterly inspection and validation of accomplishments</p>	<p>CBFMP (DAO 96-29)</p> <p>1. Identify division as repository for data and information</p> <p>2. Submit periodic report to Secretary thru Usec for Operations including monitoring &amp; evaluation, copy furnished FMB &amp; PAWB</p>	<p>DENR-CARP (DAO 99-28)</p> <p>1. Responsible for monitoring of all CARP related projects.</p> <p>2. Submit on specified forms all data required to CBFMO-FMB.</p> <p>3. Submit to RED physical accomplishment and fund utilization</p> <p>4. Establish database, data coming from Provincial Coordinators</p> <p>5. Regional Secretariat submits consolidated reports to the National Secretariat based on data submitted by PENROs</p> <p>6. AREDS monitor Agrarian Reform Fund</p>	<p>SIFMA (DAO 24 S1996)</p> <p>1. Submit periodic report to Secretary through the FMB</p> <p>2. FRDD is the repository of data and information of SIFMA in region</p>	<p>FLGMA (DAO 99-36)</p> <p>1. Create a team to conduct evaluation of FLGMA, yearly for new agreements and every 2 years thereafter</p> <p>2. Furnish copy of evaluation report to Secretary through the FMB</p>	<p>FSP (MC No. 2001-04)</p> <p>1. Approves starts of validation of plantation; notifies NGO to adjust schedule if there is delay in plantation development</p> <p>2. Helps review evaluation, feedback NGO on results</p>
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表 3.4.1 一般及び特別プロジェクトに対するモニタリング・評価システム (3/3)

Offices/organizations Involved	DAO 99-38 SOP for Performance Monitoring Sector Bureau and line Bureaus submit individual accomplishment reports to PPSO not later than 10 <sup>th</sup> of ensuing month	CBFMP (DAO 96-29)	DENR-CARP (DAO 99-28)	SIFMA (DAO 24 S1996)	FLGMA (DAO 99-36)	FSP (MC No. 2001-04)
FMB		1. Prepare and monitor implementation of national CBFM program of action 2. Develop and maintain improved MIS on CBFMP	1. CBFMO-FMB monitors program at national level 2. Establish database from reports submitted by Regional CARP Coordinators 3. Consolidate sector reports and submit to National Secretariat	1. Prepare simplified format to be accomplished by CENRO 2. Register all SIFMAs issued 3. Prepare and submit regular consolidated report to Secretary	1. Analyze evaluation and report to Secretary results of analysis	
NFDO						1. Process and recommends approval of NGO contracts 2. Along with SUSIMO review evaluation results
PPSO	Consolidate and analyze reports, submit to Secretary not later than 15 <sup>th</sup> of following month, furnish sector and line bureaus copy of report. Coordinate validation of reports of accomplishments; validation done during 1 <sup>st</sup> quarter of the ensuing year					
Secretary	Creates validation team for annual general inspection. Membership comes from regions other than the one whose performance is validated					

Source: The indicated issuances of DENR



表 3.5.1 過去 5 年間(1997 年~2001 年)の DENR の予算実績

	2001	2000	1999	1998	1997
<b>DENR</b>	<b>4,545,422</b>	<b>4,545,422</b>	<b>4,272,802</b>	<b>4,707,834</b>	<b>4,761,084</b>
General Administration and Support Services (GASS)	864,966	864,966	924,256	877,472	695,243
Support to Operations	432,950	432,950	381,459	457,910	411,950
1. <i>Forestry Sector</i>	<b>1,504,805</b>	<b>1,504,805</b>	<b>1,467,692</b>	<b>1,610,430</b>	<b>2,025,587</b>
2. <i>Lands Sector</i>	675,931	675,931	666,378	689,061	628,663
3. <i>Environment Sector</i>	1,750	1,750	168,601	141,975	305,403
4. <i>Research Sector</i>	229,271	229,271	228,192	257,355	146,068
5. <i>Protected Area Sector</i>	199,515	199,515	193,826	268,760	200,136
Projects	636,234	636,234	242,398	404,871	248,034
Mines and Geo-sciences Bureau <sup>1</sup>	333,795	333,795	394,906	364,210	200,184

<sup>1</sup>MGB has a separate budget appropriation

<sup>2</sup> There is no budget approved by Congress for 2001

Source: General Appropriations Act (1997-2000)<sup>2</sup>

表 4.2.1 本調査対象地における行政区分概要

code	Region	code	Province	code	Municipality	No. of Barangay	
02	Region 2	50	Nueva Vizcaya	01	Ambaguio	8	
02		50		02	Aritao	22	
02		50		03	Bagabag	17	
02		50		04	Bambang	25	
02		50		05	Bayombong	25	
02		50		06	Diadi	10	
02		50		07	Dupax del Norte	15	
02		50		08	Dupax del Sur	18	
02		50		09	Kasibu	30	
02		50		10	Kayapa	22	
02		50		11	Quezon	12	
02		50		12	Santafe	15	
02		50		13	Solano	22	
02		50		14	Villaverde	9	
02		50		15	Alfonso Castaneda	5	
02		50		<i>Sub-total</i>	255		
02		57	Quirino	01	Aglipay	24	
02		57		02	Cabarroguis	5	
02		57		03	Diffun	11	
02		57		04	Maddela	32	
02		57		06	Nagtipunan	15	
02		57			<i>Sub-total</i>	87	
02		31	Isabela	01	Angadanan	28	
02		31		09	Cordon	2	
02		31		12	Echague	25	
02		31		15	Jones	40	
02		31		27	San Agustin	23	
02		31		28	San Guillermo	21	
02		31		24	Ramon	1	
02		31			<i>Sub-total</i>	140	
14		CAR	27	Ifugao	01	Banaue	18
14	27		02		Hungduan	9	
14	27		03		Kiangnan	14	
14	27		04		Lagawe	20	
14	27		05		Lamut	18	
14	27		06		Mayoyao	27	
14	27		07		Alfonso Lista	1	
14	27		08		Aguinaldo	9	
14	27		09		Hingyon	12	
14	27		10		Tinoc	12	
14	27		11		Asipulo	9	
14	27				<i>Sub-total</i>	149	
Total					38	631	

表 4.3.1 小流域リスト

マガット川上流域の小流域

カガヤン川上流域の小流域

アダラム川上流域の小流域

No. of sub-watershe	ID_1	ID_2	Size of Area (ha)	No. of sub-watershe	ID_1	ID_2	Size of Area (ha)	No. of sub-watershed	ID_1	ID_2	Size of Area (ha)
1	M	1-a	6,646	62	C	1-a	8,455	116	A	1-a	7,139
2	M	1-b	4,788	63	C	1-b	5,877	117	A	1-b	4,827
3	M	1-c	5,244	64	C	1-c	7,787	118	A	1-c	6,371
4	M	1-d	12,206	65	C	1-d	6,833	119	A	2-a	5,858
5	M	1-e	6,258	66	C	1-e	6,620	120	A	2-b	6,100
6	M	1-f	7,314	67	C	2-a	5,976	121	A	2-c	4,782
7	M	1-g	6,791	68	C	2-b	4,965	122	A	2-d	6,138
8	M	1-h	7,600	69	C	2-c	7,117	123	A	2-e	5,609
9	M	1-i	7,900	70	C	2-d	5,223	124	A	2-f	5,910
10	M	1-j	7,489	71	C	3-a	5,678	125	A	3-a	4,218
11	M	2-a	8,022	72	C	3-b	8,332	126	A	3-b	5,907
12	M	2-b	6,788	73	C	3-c	5,425	127	A	3-c	5,370
13	M	2-c	5,631	74	C	3-d	6,859	128	A	3-d	6,719
14	M	2-d	8,039	75	C	3-e	5,221	129	A	3-e	5,989
15	M	2-e	6,699	76	C	4-a	2,881	130	A	3-f	6,109
16	M	2-f	4,332	77	C	4-b	3,946	131	A	3-g	4,130
17	M	2-g	5,649	78	C	4-c	5,022	132	A	4-a	10,586
18	M	2-h	7,304	79	C	4-d	4,927	133	A	4-b	13,010
19	M	2-i	7,613	80	C	5-a	6,044	Total		114,773	
20	M	2-j	9,064	81	C	5-b	4,024				
21	M	2-k	9,488	82	C	5-c	8,744				
22	M	2-l	7,863	83	C	5-d	6,064				
23	M	3-a	21,347	84	C	5-e	7,833				
24	M	3-b	12,024	85	C	6-a	8,901				
25	M	3-c	4,569	86	C	6-b	5,491				
26	M	4-a	5,782	87	C	6-c	6,654				
27	M	4-b	7,454	88	C	6-d	4,507				
28	M	4-c	5,521	89	C	6-e	7,050				
29	M	4-d1	6,809	90	C	7-a	8,154				
30	M	4-d2	7,402	91	C	7-b	5,585				
31	M	4-e	10,179	92	C	7-c	10,177				
32	M	4-f	7,220	93	C	8-a	7,704				
33	M	4-g	10,732	94	C	8-b	7,073				
34	M	5-a	7,503	95	C	8-c	5,140				
35	M	5-b	3,422	96	C	8-d	7,631				
36	M	5-c	6,682	97	C	8-d	5,507				
37	M	5-d	7,689	98	C	8-e	5,608				
38	M	5-e	3,090	99	C	8-f	5,349				
39	M	5-f	4,050	100	C	8-h	8,290				
40	M	5-g	3,046	101	C	8-i	4,824				
41	M	6-a	3,604	102	C	9-a	3,804				
42	M	6-b	4,667	103	C	9-b	5,685				
43	M	6-c	6,833	104	C	9-c	5,829				
44	M	6-d	8,296	105	C	9-d	6,237				
45	M	6-e	4,690	106	C	9-e	3,693				
46	M	6-f	5,269	107	C	9-f	4,574				
47	M	6-g	5,758	108	C	9-g	5,227				
48	M	6-h	3,697	109	C	10-a	9,386				
49	M	7-a	6,246	110	C	10-b	6,420				
50	M	7-b	5,367	111	C	10-c	5,282				
51	M	7-c	6,183	112	C	10-d	5,374				
52	M	7-d	7,065	113	C	10-e	8,248				
53	M	7-e	6,254	114	C	10-f	4,656				
54	M	8-a	6,033	115	C	11-a	14,255				
55	M	8-b	4,448	Total			342,166				
56	M	8-c	6,899								
57	M	8-d	4,862								
58	M	8-e	8,035								
59	M	8-f	8,654								
60	M	8-g	7,894								
61	M	8-h	3,658								
Total			417,663								

表 4.3.2 月別平均降雨量

Station	Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1. Baligatan	1976-85	29.4	10.7	37.6	98.7	206.8	177.0	234.2	213.1	231.0	202.9	160.2	50.9	1,652.5
2. Banga-An	1963-78	27.2	7.6	22.0	78.8	218.7	274.8	302.4	375.6	274.5	148.8	115.3	26.4	1,872.1
3. Barat, Bambang	1968-80	23.8	10.1	35.8	90.0	226.7	224.8	271.4	323.1	302.7	337.8	156.4	104.9	2,107.5
4. Baretbet (Dumayup)	1977-85	21.1	12.5	58.9	128.1	262.7	184.7	231.4	194.9	254.4	250.8	125.1	49.4	1,774.0
5. Barlig	1963-85	134.4	41.0	92.9	95.2	309.7	402.6	394.7	411.6	372.1	407.8	499.5	326.3	3,487.8
6. Bauko	1963-80	6.5	7.5	43.8	169.1	284.5	304.8	371.0	421.4	313.4	188.7	67.9	54.4	2,233.0
7. Bontoc	1963-85	17.9	11.9	46.6	127.6	263.8	294.5	390.5	267.9	302.8	204.8	152.5	54.4	2,135.2
8. Casiguran	1961-84	234.2	113.8	176.5	136.3	242.3	229.4	284.7	251.9	592.5	421.7	628.8	402.9	3,715.0
9. Consuelo, Santa Fe	1956-85	33.5	18.0	44.0	70.9	221.5	252.6	380.4	331.0	325.5	263.9	211.8	60.5	2,213.6
10. Dakgan	1972-82	18.4	11.3	29.8	23.1	134.5	158.8	234.2	176.5	216.5	273.1	274.6	68.9	1,619.7
11. Echague	1976-85	17.5	9.1	18.2	91.7	114.5	97.1	148.8	259.9	189.6	272.8	128.0	142.3	1,489.5
12. Gabong	1952-72	38.6	13.0	25.5	33.4	128.5	179.9	251.5	216.7	229.0	230.0	284.9	90.3	1,721.3
13. Hapid, Lamut	1976-85	15.4	21.7	42.8	115.2	222.5	167.9	209.4	173.7	241.4	213.4	109.4	29.9	1,562.7
14. Ilagan	1965-84	59.1	20.9	32.3	62.6	155.4	172.8	144.7	186.0	172.2	291.1	315.9	191.1	1,804.1
15. Lagawe	1968-82	176.0	88.5	65.2	190.1	171.3	265.0	362.0	319.9	341.4	331.6	394.3	146.3	2,851.6
16. Mt. Data, Benguet	1950-78	27.2	25.0	74.6	187.9	357.0	413.5	619.4	563.3	465.2	296.3	220.4	78.2	3,328.0
17. Mt. Polis, Banague	1963-80	160.4	134.0	110.1	157.7	337.3	457.1	516.8	553.5	453.0	378.1	370.9	246.6	3,875.5
18. Nayon, Lamut	1968-80	63.4	25.5	69.9	89.5	217.2	200.4	207.8	243.6	220.4	240.2	185.7	99.3	1,862.9
19. Poblacion Lagawe	1976-85	44.9	37.5	62.7	117.9	240.1	183.3	284.8	267.4	230.1	250.7	136.3	64.3	1,920.0
20. Sto Domingo	1976-85	28.6	14.6	29.7	115.3	113.9	161.7	193.5	157.3	232.7	245.3	116.3	44.8	1,453.7

Source: Feasibility Study of the Flood Control for the Lower Cagayan River (JICA)

表 4.3.3 月別平均最高気温 (°C)

Station	Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1. Baretbet	1981-84	26.1	28.2	31.2	31.0	30.1	29.9	29.1	28.8	29.8	28.4	27.8	25.9	28.9
2. Consuelo	1981-84	25.5	28.7	30.3	30.9	31.7	31.1	29.2	27.6	28.6	27.4	27.1	24.8	28.6
3. Echague	1980-97	27.1	29.4	32.3	34.5	34.9	34.4	33.2	33.3	32.2	31.5	29.5	27.2	31.6
4. Hapid, Lamut	1981-84	23.7	24.6	25.7	27.3	28.5	28.2	27.7	26.8	28.2	26.7	25.5	23.0	26.3
5. Lagawe	1981-84	29.1	29.0	28.9	28.8	29.7	30.2	29.7	29.9	29.7	29.7	29.6	28.4	29.4
6. San Isidro	1976-80	27.3	28.2	30.6	33.1	33.0	31.9	31.7	31.6	31.3	29.2	27.3	26.2	30.1
7. Sto Domingo	1981-84	27.7	29.1	28.9	31.0	32.2	32.7	31.9	30.1	30.0	29.4	30.1	27.2	30.0

出典: Feasibility Study of the Flood Control for the Lower Cagayan River (JICA)

表 4.3.4 月別平均最低気温 (°C)

Station	Period	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean
1. Baretbet	1981-84	21.7	23.1	23.3	24.3	24.5	24.4	24.2	24.8	25.0	24.0	23.8	22.5	23.8
2. Consuelo	1981-84	20.4	21.5	23.7	24.2	25.4	25.2	24.0	23.4	23.6	22.9	22.0	21.1	23.1
3. Echague	1980-97	19.8	20.1	20.6	22.7	23.7	24.0	23.6	23.7	23.4	22.9	22.0	19.0	22.1
4. Hapid, Lamut	1981-84	21.2	20.5	21.1	22.7	23.3	24.1	23.8	23.2	23.0	23.4	22.0	20.5	22.4
5. Lagawe	1981-84	20.5	19.0	22.0	21.7	21.2	22.1	20.6	21.8	21.5	21.8	22.0	21.1	21.3
6. San Isidro	1976-80	21.3	21.1	23.0	24.9	25.4	25.7	25.6	25.5	24.6	24.1	22.8	21.6	23.8
7. Sto Domingo	1981-84	19.6	20.1	19.5	20.2	22.2	22.0	21.2	20.4	20.1	18.7	19.1	18.9	20.2

出典: Feasibility Study of the Flood Control for the Lower Cagayan River (JICA)

表 4.5.1 過去5年間の第二地区 (Region-2) における林産物生産

	Round Logs, m <sup>3</sup>	Lumber m <sup>3</sup>	Rattan, unsplit (lm)	Rattan, split (kg)	Almaciga resins (kg)	Bamboo (pieces)
<b>National</b>						
2000	800,087	149,624	32,335,617	97,289	518,191	2,341,593
1999	730,170	288,317	15,551,924	47,799	297,830	1,038,710
1998	633,797	221,988	10,463,538	5,114	260,605	447,616
1997	555,917	350,634	19,519,185	1,906	310,474	198,607
1996	771,322	3,122,652	24,612,882	17,426	890,383	671,074
<b>Region II</b>						
2000	17,472	1,447	1,292,898			
1999	16,189	1,051	2,493,189	1,590	5,000	
1998	11,545	3,374	1,715,578		15,000	
1997	10,903	8,950	2,447,260		12,000	550
1996	8,602	2,072	4,281,842	15,000		
<b>CAR</b>						
2000						
1999			504,189			18,744
1998			64,470			4,325
1997						
1996	379					
<b>Ifugao</b>						
2000						
1999						365
1998						
1997						
1996						328
<b>Isabela</b>						
2000	17,282	1,429	43,000			
1999	16,007	1,051	241,790	1,590	5,000	
1998	11,545	3,374	792,600			
1997	4,528	8,950	2,065,760		12,000	550
1996	6,664	2,072	368,600	15,000		
<b>N Vizcaya</b>						
2000			125,800			
1999			87,000			
1998						
1997						
1996	50		187,000			
<b>Quirino</b>						
2000	190					
1999			183,850			
1998						
1997						
1996			615,343			

出典: The Philippine Forestry Statistics, FMB, DENR, 1999

表 4.5.2 Nueva Vizcaya 州における伐採許可所有者リスト

Name of CS-holder	Location	Date Approved	CSC Number	Harvesting Permit No.	Volume Approved M <sup>3</sup>
1. Rodolfo Yoro	Calaoacan, Quezon	June 5, 2000	022411449	025	6.18
2. Bobby Donato	Calaoacan, Quezon	May 22, 2000	022411447	024	14.49
3. Genaro Omarito	Mandiangat, Quezon	March 6, 2000		019	1.27
4. Ruben Ducusin	Danubba, Quezon	June 13, 2000	022411262	021	8.40
5. Joaquin Cablinan	Ocapan, Villaverde	April 22, 2000	022414885	022	47.65
6. Rafael de la Cruz	Kinacao, Bagabag	July 14, 2000	02411006	026	21.35
7. Mariano Ancheto	-do-	June 19, 2000	02240611	013	9.52
8. Christina Marcos	-do-	May 4, 2000	11-2413199	023	6.13
9. Ernesto Divina	Bintauan, Villaverde	October 2, 2000	520585	028	20.34
10. Joseph Dulman, Jr.	Ampakleng, Diadi	October 17, 2000	022406929	029	64.99
11. Olpiano Reyes	-do-	Nov. 7, 2000	022405188	030	23.30
12. Severino Galasinao	-do-	Jan. 25, 2001	022411937	031	10.93
13. Marcela Valdez	-do-	March 13, 2001	022414979	032	24.26
14. Macario Carbonel	-do-	May 7, 2001	11-2413160	033	7.25
15. Julie Corpuz	-do-	June 13, 2001	022406923	034	47.30
16. Catalina Pascua	-do-	June 19, 2001	022414978	035	41.16
17. Fidel Duka	-do-	July 18, 2001	022411285	036	70.03
18. Editha Biag	-do-	July 18, 2001	11-2413269	037	15.73
19. Joseph Dalnuan, Jr	-do-	August 9, 2001	022414890	038	11.91
20. Joaquin Cablinan	Ocapan, Villaverde	Sept 12, 2001	022414885	039	22.57
Total					460.27

表 4.6.1 土地利用/植生区分名及び定義

Item	Characteristics
Old-growth forest	Highly productive forests with many fully-grown trees. Dipterocarpaceae is the dominant families. It is located in hilly areas. Little felling so far has ensured a high density. Tree height ranges from 15-25m. Forest with high redness from reflection of near infrared rays and smooth texture on the images were classified in this category.
Mossy forest	Forests with tree height of up to around 5m that are located in areas of high elevation higher than 1000m and which are often covered by epiphyte. Within areas of high elevation, those sections displayed as a red-black color on the images were classified in this category.
Residual forest	Forests with fully-grown trees but low density due to felling. These forests are distributed in areas of lower elevation than Old-growth forests. Species of trees are the same as for Old-growth forest. Tree height ranges from approximately 10-20m. Among forest areas, those forests with a rough texture on the images were classified in this category.
Sub-marginal forest	Forests with restrained or stunted tree growth due to soil and/or weather conditions. These forest conditions are deemed to be brought about largely by the limestone topography soil conditions and meteorological conditions such as the wind blowing from the sea.
Pine forest	Forest with pine trees as the dominant species. Areas with high density are shown on the images in a distinctive color. However, areas with low density are shown in a similar color as Reproduction brush and grass land on the images, so there is a possibility that Pine forest may have been classified into either of these two categories. Tree height ranges from around 15-25m.
Mangrove forest	N.A. (Mangrove forest is not distributed in the Study Area.)
Reproduction brush	Reproduction brush mainly comprises secondary forests incorporating brush and grass land and is distributed along the foothills of Residual forest areas and near roads. Tree species include Leguminosae and Dipterocarpaceae, and tree height ranges from approximately 1m up to 15m.
Coconut plantation	There is some distribution of Coconut plantation in the continental areas.
Other orchard	This category includes fruit plantation such as mango, banana and jackfruit. Vegetation along roads and rivers was also included in this category.
Grass land	Grass land is distributed in plain and mountain areas and is used as grazing land. The color scheme of this category on the images resembles that of Agricultural areas with little vegetation.
Agricultural land	In addition to paddy fields, sugar cane, corn and vegetable fields were classified in this category. With regard to paddy fields, the reflection quantity of near infrared rays had a wide range, and the state of growth of rice plants and the state of paddy fields before/after harvest affected the images greatly. Harvested paddy field resembles the color of Grass land and Bare/Rocky land, while the color of plants in full growth resembles that of forest. Paddy fields and sugar cane fields were distributed mainly in plain areas, while other fields were distributed in mountainous regions.
Bare/Rocky land	Bare land including collapsed areas, dry riverbeds and beaches. It also includes cultivated lands without vegetation cover.
Built-up area	Urban areas, areas of development and areas containing large numbers of man-made structures such as roads and airports were classified in this category. The color scheme of this category is similar to that of Bare/Rocky land, so the following procedure was used in this Study. First both areas were classified as Bare/Rocky land, and then areas that showed clear evidence of man-made structures were classified into this category.
Water area	Rivers and lakes including fishponds were classified into this category. The water areas covered by this category were not counted in the Forest Register.
Cloud	Clouds that could not be removed by cloud removal techniques.
Shadow	Cloud shadow that could not be removed by cloud-removal techniques.



表 4.7.1 調査対象地内におけるCBFM事業地区リスト

No.	Name of PO	Responsible GENRO	Municipality	Barangay	PO registration	CBFMA signed(3)	Agreement NO.	Other Tenual Instruments				CBFM Area	No. of member	Ave ha per memb	
								ISA(CSC)	CFSA	CADC	Yes(1) No(0)				Yes(1) No(0)
	<b>Nueva Vizcaya</b>														
	<b>CBFMA</b>														
1	Gadagad Vegetable and Fruit Tree Growers Association	Aritao	Santa Fe	Bailing	10/31/00	20119014						70	28	2.50	
2	Bakir Pagbigan ti Pagilian CBFM Association	Aritao	Quezon	Rumuno	12/4/00	20119015						222	42	5.29	
3	Lalar Ilocano Minority Farmers Association Inc.	Aritao	Aritao	Lalar	12/10/99	20019007						438	52	8.41	
4	Buyasayas Iwak Tribal Council	Aritao	Kayapa	Buyasayas	11/23/00	20219013						1,021	120	8.51	
5	Yaway Farmers Multi-Purpose Cooperative Inc.	Aritao	Yaway	Yaway	2/1/95	20219012						1,342	58	23.13	
6	Association of Upland Farmers of Singian Nueva Vizcaya Inc.	Bayombong	Bagabag	Pogonsino	8/25/00	20119010						64	42	1.52	
7	Singian Agro-Forest Association	Bayombong	Bagabag	Tuao South	10/17/00	20119011						85	61	1.39	
8	Socio-Economic and Environmental Development Cooperative Inc.	Bayombong	Quezon	Dagupan	12/9/99	20019008						2,200	100	22.00	
9	Federation of Vista Hills, Kakomkong and Kakilingan Upland Farmers	Bayombong	Bayombong	Buena Vista	3/29/99	20019005						3,000	207	14.49	
10	Mabasa Tree Planters and Growers Association, Inc.	Dupax	Dupax del Norte	Mabasa	1/27/98	20019001						20	25	0.80	
11	Banila Community-Based Association Inc.	Dupax	Dupax del Sur	Banila	7/12/99	20019006						225	68	3.31	
12	Bitrong Guijo Greeners Association Inc.	Dupax	Dupax del Norte	Bitrong	3/23/99	20019004						328	86	3.81	
												<b>9,014</b>	<b>889</b>	<b>10.14</b>	
	<b>Quirino</b>														
1	San Manuel-Victoria Forest Developers Cooperative	Aglipay	Aglipay	San Manuel, Victoria	6/19/96	20218301						3,176	156	20.36	
2	Alicia Sustainable Resource Development (ASREDECO)	Aglipay	Aglipay	Alicia	9/17/97	20218305						1,844	124	14.87	
3	Balligui Community Forestry and Development Cooperative Inc	Aglipay	Maddela	Balligui, Jose Ancheta	6/24/97	20218302						4,400	74	59.46	
4	Gomez Farmers Multi-Purpose Cooperative, Inc	Nagtipunan	Cabarogapis	Gomez	9/3/00							620	40	15.50	
5	Ilitogot Livelihood Association Inc (ILAI)	Nagtipunan	Nagtipunan	Landigan	1/28/92	20218304						1,752	63	27.81	
6	Nuh-uh-ubhaan Inc	Nagtipunan	Nagtipunan	Asaklat	3/8/94	20218307						2,600	56	46.43	
7	Kadikitan Association for Community Development (KACADI)	Nagtipunan	Nagtipunan	Kadikitan, Landigan	12/14/93	20218303						4,958	176	28.17	
8	Anak Intercultural Organization	Nagtipunan	Nagtipunan	Anak	4/30/96	20219960						5,315	117	45.43	
9	Wasid Ilitogot Tribe Association Inc (WITAI)	Nagtipunan	Nagtipunan	Wasid	6/17/94	20219953						6,420	59	108.81	
10	Sangbay Anak Integrated Farmers Association Inc.	Nagtipunan	Nagtipunan	Sangbay	8/27/97	20218309						134	32	4.19	
11	Villa Ventura Multi-Purpose Cooperative Inc.	Petro Quirino	Aglipay	Victoria	10/23/95	20218313						776	35	22.17	
12	Rafael Palma Multi-Purpose Cooperative, Inc.	Petro Quirino	Diffun	Rafael Palma	9/1/00	20218311						149	44	3.38	
13	Hugao Village Apochoan Multi-Purpose Cooperative (IVAMCO)	Petro Quirino	Diffun	Hugao Village	6/7/00	20218310						1,000	30	33.33	
14	Baguio Village Intercultural Association	Petro Quirino	Diffun	Baguio Village	4/4/94	20218308						1,990	120	16.58	
15	Don Mariano Perez Farmers Multi-Purpose Cooperative	Petro Quirino	Diffun	Don Mariano Perez	3/24/94	20218306						3,100	137	22.63	
16	Salmong T. Campamento Association Inc	Petro Quirino	Diffun	Campamento	-	20218314						416	100	4.16	
												<b>38,649</b>	<b>1,363</b>	<b>28.36</b>	
	<b>Hugao</b>														
1	Bannao Community Organization Inc.	Lamat	Bannao	Bannao	-							200	70	2.86	
2	Fed of Responsive Assosn for Magat Ecology, Inc	Lamat	Lamat	Binal, Jolowon, Nayon	-							3,027	407	7.44	
3	Dalligan Multipurpose Development Association	Lamat	Kiangon	Dalligan	11/19/99	5037	on process					274	25	10.97	
4	Hapid Agro-forestry Developers Association Inc.	Lamat	Lamat	Hapid	12/24/00	5054						101	56	1.81	
5	Lingay Farmers Association	Lamat	Kiangon	Lingay	11/19/99	5036						107	32	3.34	
6	Mayoyao Environment Development Association Inc.	Alfonso Lista	Mayoyao	Mayoyao	-	5025						2,000	836	2.39	
7	Nunthabatan Greeners Livelihood Association Inc.	Lamat	Lamat	Hapid	3/29/99	5023						241	50	4.82	
												<b>5,950</b>	<b>1,476</b>	<b>4.03</b>	
	<b>Isabela</b>														
1	Rizal Integrated Development Multi-Purpose Cooperative Inc.	Cauayan	San Guillermo	Rizal & Burgos	5/1/97							5,000	100	50.00	
2	Ayangan Dappig Agro-Forestry Development Association	San Isidro	San Agustin	Dappig	-	20216660						488	67	7.28	
3	Taleb Upland Farmers Multi-Purpose Coop. Inc.	San Isidro	Taleb, Dallao	Taleb, Dallao	12/22/98							203	37	5.49	
												<b>5,691</b>	<b>204.00</b>	<b>27.89</b>	
												<b>59,304</b>	<b>3,932</b>	<b>15.08</b>	

表 4.7.2 調査対象地内におけるCBFM事業の資金源リスト

	Name of PO	CBFM	DENR	%	Foreign	Foreign-	%	Assit	On-	Currency	
		Area	funded area		agencies	funded area		Perd.	going	forgn funded	%
		(ha)	(ha)			(ha)				(ha)	
	<b>Nueva Vizcaya</b>										
1	Gadagad Vegetable and Fruit Tree Growers Ass.	70.00	70.00		-				0		
2	Bakir Pagbiagan ti Pagilian CBFM Association	222.00	222.00		-				0		
3	Latar Ilocano Minority Farmers Ass.	437.50	437.50		-				0		
4	Buyasyas Iwak Tribal Council	1,021.00			CASCADE, SECAR	1,021.00			1	1,021.00	
5	Yaway Farmers Multi-Purpose Cooperative Inc.	1,341.50	1,341.50		-				0		
6	Association of Upland Farmers of Singian	64.00	64.00		-				0		
7	Singian Agro-Forest Association	84.82	84.82		-				0		
8	S.E.E.D.Coop. Inc.	2,200.00			ADB	2,200.00			0		
9	Federation of Vista Hills Upland Farmers Inc.	3,000.00			ITTO	3,000.00		98-01	0	3,000.00	
10	Mabasa Tree Planters and Growers Ass.	20.00			ADB	20.00		91-93	0		
11	Banila Community-Based Association Inc.	225.00			ADB	225.00			0		
12	Bitnong Guijo Greeners Association Inc.	328.00			ADB	328.00		91-93	0		
12	Sub-total	9,013.82	2,219.82	24.63%		6,794.00	75.37%			4,021.00	44.61%
	<b>Quirino</b>										
1	San Manuel-Victoria Forest Developers Coop	3,176.00			ADB II	3,176.00		93-00	0		
2	Alicia Sustainable Resource Development	1,844.14			USAID	1,844.00		95-02	1	1,844.00	
3	Balligui Community For. Dev. Coop Inc	4,400.00			RP-Ger.	4,400.00		97-01	1	4,400.00	
4	Gomez Farmers Multi-Purpose Cooperative, Inc	620.00	620.00		-						
5	Ilongot Livelihood Association Inc (ILAI)	1,752.00			WB	1,752.00		92-99			
6	Nuh-uh-uhhaan Inc	2,600.00			RP-Ger.	2,600.00		97-01	1	2,600.00	
7	Kadikilan Association for Com Dev	4,958.00			ADB II	4,958.00		93-00	0		
8	Anak Intercultural Organizatioin	5,315.00			RP-Ger.	5,315.00		97-01	1	5,315.00	
9	Wasid Ilongot Tribe Association Inc (WITAI)	6,420.00			USAID	6,420.00		95-02	1	6,420.00	
10	Sangbay Anak Integrated Farmers Ass	134.00			ADB II	134.00		93-00	0		
11	Villa Ventura Multi-Purpose Cooperative Inc.	776.00	776.00		OECF-CARP	776.00			0		
12	Rafael Palma Multi-Purpose Coop	148.83			-				0		
13	Ifugao Village Multi-Purpose Coop	1,000.00			RP-Ger.	1,000.00		97-01	1	1,000.00	
14	Baguio Village Intercultural Association	1,990.00			RP-Ger.	1,990.00		97-01	1	1,990.00	
15	Don Mariano Perez Farmers MP Coop	3,100.00			RP-Ger.	3,100.00		97-01	1	3,100.00	
16	Salinong T. Campamento Association Inc.	415.50	415.50		-						
16	Sub-total	38,649.47	1,811.50	4.69%		37,465.00	96.94%			26,669.00	69.00%
	<b>Ifugao</b>										
1	Bannao Community Organization Inc.	200.00			ADB	200.00		91-93	0		
2	Fed of Responsive Assosn for Magat Ecology, Inc	3,027.00			JBIC	3,027.00		95-03	0	3,027.00	
3	Dalligan Multipurpose Development Ass	274.26			WB	274.26		92-99	0		
4	Hapid Agro-forestry Developers Ass.	101.15			ADB	101.15		91-93	0		
5	Lingay Farmers Association	106.77			WB	106.77		92-99	0		
6	Mayoyao Environment Development Ass.	2,000.00			JBIC	2,000.00		95-03	0	2,000.00	
7	Nunhabatan Greeners Livelihood Ass	241.00			ADB	241.00		91-93	0		
7	Sub-total	5,950.18	0.00	0.00%		5,950.18	100.00%			5,027.00	84.48%
	<b>Isabela</b>										
1	Rizal Integrated Development MP Coop	5,000.00			WB	5,000.00		92-99	0		
2	Ayangan Dappig Agro-Forestry Dev Ass	487.50	487.50		-				0		
3	Taleb Upland Farmers Multi-Purpose Coop. Inc.	203.00							0		
3	Sub-total	5,690.50	487.50	8.57%		5,000.00	87.87%			0.00	0.00%
38	<b>Total</b>	<b>59,303.97</b>	<b>4,518.82</b>	<b>7.62%</b>		<b>55,209.18</b>	<b>93.10%</b>		<b>9</b>	<b>35,717.00</b>	<b>60.23%</b>

Sources:

- (1) DENR internal document. PROFILE CBFM PROJECTS CY 2001. (2) DENR internal document. List of CBFM Project in Region 02, As of July 2000  
 (3) Date data taken from original CBFMA document. (4) Date Established, data taken from PROFILE CBFM PROJECTS CY 2001

表 4.7.3 調査対象地内における既存の PLA、FLGLA 及び FLGMA 地区リスト

Province	Lessee	Lease No.	Expiry Date	Area (ha)	Location	
<b>Nueva Vizcaya</b>	1. Barrairo <sup>2)</sup>	132	10/30/09	500	Bagabag	
<b>Ifugao</b>	1. Virgilio Lam-ag	439	12/31/12	70	Aguinaldo	
	2. Porferia Acosta	311	12/31/10	90	Lamut	
	3. Adriano Abella	346	12/31/11	110	Alfonso Lista	
	4. Ricardo Abella	274	12/31/10	65	Alfonso Lista	
	5. Felino Diego	133	12/31/09	175	Alfonso Lista	
	6. Guillermo Fernando	300	12/31/10	55	Alfonso Lista	
	7. Rufino Terte	297	12/31/10	97	Alfonso Lista	
	8. Erenio Salvador	275	12/31/10	75	Alfonso Lista	
	9. Mauro Domingo	741	12/31/22	51	Alfonso Lista	
	10. Rufus Malecdan	743	12/31/22	50	Alfonso Lista	
	11. Zosimo Paredes <sup>2)</sup>	746	12/31/22	332	Lamut	
	12. Leoncio Borromeo	270	12/31/10	67	Alfonso Lista	
	13. Elisea Callangan	584	12/31/15	360	Alfonso Lista	
	14. Calizo Bongat <sup>2)</sup>	572	12/31/15	50	Alfonso Lista	
	15. Francisco Paredes	146	12/31/11	235	Lamut	
	16. Felix Campos	192	12/31/09	420	Alfonso Lista	
	17. Apolinario dela Cruz	269	12/31/10	85	Alfonso Lista	
	<b>Sub-Total of Ifugao</b>			<b>2,387</b>		
<b>Quirino</b>	1. Jesus Antonio Sulto	292	12/31/10	226	Cabbarroguis	
	2. Esteban Cumlat	488	12/31/13	120	Nagtipunan	
		<b>Sub-Total of Quirino</b>			<b>346</b>	
<b>Isabela</b>	1. Miguel Ponce	394	12/31/11	70	Angadanan	
	2. Marcelina vda. De Reyes	310	12/31/10	48	Angadanan	
		<b>Sub-total of the 3<sup>rd</sup> District</b>			<b>118</b>	
	3. Renerio Agatep	31	12/31/01	158	Cordon	
	4. Felipe Bangui	117	12/31/08	300	Cordon	
	5. Felimon remigio <sup>1)</sup>	429	12/31/21	70	Cordon	
	6. Delmar Bartolome <sup>1)</sup>	143	12/31/15	196	Ramon	
	7. Mariano Andres, Jr. <sup>1)</sup>	753	12/31/22	60	Cordon, Daelao	
	8. Filemon Remigio <sup>1)</sup>	429	12/31/21	70	Dallao & Aguinaldo	
	9. Jose Agustin <sup>1)</sup>	748	12/31/23	52	Villa Miemban	
	10. Mariano Andres <sup>1)</sup>	753	12/31/22	60	Dallo, Cordon	
	11. Delmar Bartolome <sup>1)</sup>	143	12/31/15	150	Ramon	
	<b>Sub-total of the 4<sup>th</sup> District</b>			<b>1,116</b>		
	<b>Sub-Total of Isabela</b>			<b>1,234</b>		
<b>Grand Total</b>				<b>4,467</b>		

1) FLGLA: 法定林地内放牧地賃貸契約書(Forest Land Grazing Lease Agreement)

2) FLGMA: 法定林地放牧管理合意書(Forestland Grazing Management Agreement)

表 4.7.4 鉱物採掘権リスト

Name of Company	Application Number	Date Filed	Area (ha)	Location	Mineral
<b>A. FTAA</b>					
1. Dalton Pacific Resources	R02-000006	Jan 27, '95	40,509	Conwap	Gold, copper
2. Dalton Pacific Resources	R02-000012	Jan 27, '95	36,064	Caraballo	Gold, copper
3. Socorro Mineral Exploration Corp	R02-000016	Oct 13, '95	47,606 <sup>1</sup>	Casiguran	Gold, copper
4. Arimco Mining Corp	R02-000001	Jan 20, '92	28,758	Malabing	Gold, copper
5. TVI-Miracle Mile Mining Corp	R02-000007	Jan 2, '94	86,634	N. Vizcaya	
6. Nelda Mineral Exploration Corp	R02-000015	Oct 13, '95	41,506	Dinajawan	
7. Batulao Mineral Corp	R02-000019	Jan 31, '96	4,940	Solano	
8. Eagle Cement Corp	R02-000020	Jan 31, '96	13,446		
9. Royal Cement & Mining Corp	R02-000021	Jan 31, '96	23,490	Echague	
<b>B. MPSA</b>					
1. Acacia Aqua-Culture Inld. Inc	R02-000035	Dec 8, '94	7,904	Palasian	Limestone
2. Levitco Tuquero	R02-000056	Dec 11, '95	825	Caliat	Gold
3. Agos Mining Corp	R02-000079	Jan 8, '97	5,925	Solano	Gold, copper
4. Sagem Mining & Dev't Corp	R02-000082	Feb 26, '97	2,225	Monguia	Gold, copper
5. Deltec Corp	R02-000083	Apr 24, '97	8,327	Madella	Gold, copper
6. Golden Fields Mining & Realty Dev Corp	R02-000087	Jul 29, '97	6,432	Bantiwan	Limestone
7. Anton Natividad - Connaught	R02-0000__		741	Pao, Kasibu	
8. Cabanglasan Mining Expl. Co.	R02-0000__		1,442	Cordon, Diadi	Gold, copper
9. Orophilippiine Ventures Inc.	R02-000015	Nov 6, '92	10,555		Gold
10. Vulcan Indus. & Mining Corp	R02-000021	May 13, '93	6,633		
11. Anaconda Mining & Dev	R02-000049	Sept 1, '95	3,956	Madella & Nagtipunan	Gold, copper
12. Placer Mining & Indus. Corp	R02-000090	Sept 11, '97	1,319	Madella	Gold, copper
<b>C. EPA</b>					
1. Sulong Mining & Dev Corp			864		
2. Occ. Pacific-Climax Mining			14,986		
3. Aberdeen Mining & Dev. Corp	R02-000001	Oct 5 '95	2,885	Aritao	Gold
4. Omni Mines Dev Corp	R02-000002	Oct 16 '95	15,652	Madella	Gold
5. Aurora Copper Gold Resources & Mgt Corp	R02-000003	Oct 26 '95	16,463	Echague	Gold
6. Maria Aurora Consolidated Mining Corp	R02-000004	Nov 13 '95	16,442	Madella	Gold
7. Diteki Mines Dev Corp	R02-000005	Nov 23 '95	16,451	Echague	Gold
8. Buena Suerte Mining Corp	R02-000006	Jan 26 '96	16,491	Kasibu	Gold
9. Marcopper Mining Corp	R02-000007	Jan 26 '96	5,029	NV & Qui	Gold
10. Dalton Pacific Resources Corp	R02-000008	Feb 26 '96	10,305	Kasibu	Gold, copper
11. Crimson Ridge-Climax Mining	R02-000010	Apr 18 '96	16,463	NVizcaya	Gold, copper
12. Red Gibber-Climax Mining	R02-000011	Apr 18 '96	16,556	NVizcaya	Gold, copper
13. Climax Australia-Phil, Inc. I	R02-000016	Sept 9 '96	9,384	NV & Qui	Gold, copper
14. Climax Arimco Mining Corp	R02-000017	Sept 11 '96	17,231	NV & Qui	Gold, copper
15. El Caras Mining Corp	R02-000023	Oct 4 '96		Diadi	Gold
16. Aurum Peak-Climax Mining Corp	R02-000026	Jan 7 '97	16,478	Aritao	Gold, copper
17. Copper Fields Resource Corp	R02-000028	Jan 7 '97	16,460	NVizcaya	Gold, copper
18. Ancan Mgt Corp	R02-000029	Jan 13, '97		NVizcaya	Gold, copper
19. St. Patrick Mining & Dev Corp	R02-000031	Feb 20 '97	6,920	Madella	Gold
20. Climax Australia-Phil Inc. II	R02-000016	Sept 9 '96	16,841	NV & Qui	Gold, copper
21. Chelsea Mining Corp	R02-000035	Apr 23, '97	7,288	Palanan	Gold
22. Coolabah Mining Corp	R02-000037	Apr 23, '97	13,619	Quirino	Gold, copper

<sup>1</sup>A large part in Aurora Province

表 4.7.5 森林造成に用いられる樹種リスト

Province	Tree Species
1. Nueva Vizcaya	<ul style="list-style-type: none"> <li>- Alibangbang (<i>Bauhinia monandra</i>)</li> <li>- Mahogany (<i>Swietenia macrophylla</i>)*</li> <li>- Narra (<i>Pterocarpus</i> spp.)*</li> <li>- Palosanto (<i>Triplaris cumingiana</i>)</li> <li>- Talisai (<i>Terminalia catappa</i>)</li> <li>- Teak (<i>Tectona grandis</i>)</li> <li>- Yakal (<i>Hopea astylosa</i>)</li> <li>- Yemane (<i>Gmelina arborea</i>)*</li> </ul>
2. Ifugao	<ul style="list-style-type: none"> <li>- Agoho (<i>Casuarina equisetifolia</i>)</li> <li>- Akleng Parang (<i>Semalbizia</i> spp)</li> <li>- Almaciga (<i>Agathis dammara</i>)</li> <li>- Alnus (<i>Alnus formosana</i> or <i>japonica</i>)*</li> <li>- Bagras = Kamerere (<i>Eucalyptus deglupta</i>)*</li> <li>- Benguet Pine (<i>Pinus kesiya</i>)*</li> <li>- Mahogany (<i>Swietenia macrophylla</i>)*</li> <li>- Narra (<i>Pterocarpus indicus</i>)*</li> <li>- Rain tree (<i>Samanea saman</i>)</li> <li>- Talisai (<i>Terminalia catappa</i>)</li> <li>- Teak (<i>Tectona grandis</i>)</li> <li>- Yemane (<i>Gmelina arborea</i>)*</li> <li>- White Lauan (<i>Pentacme contorta</i> or <i>Shorea squamata</i>)</li> </ul>
3. Quirino	<ul style="list-style-type: none"> <li>- Bagras (<i>Eucalyptus deglupta</i>)</li> <li>- Ipil-ipil (<i>Leucanena leucocephala</i>)</li> <li>- Mahogany (<i>Swietenia macrophylla</i>)*</li> <li>- Narra (<i>Pterocarpus indicus</i>)*</li> <li>- Yemane (<i>Gmelina arborea</i>)*</li> </ul>
4. Isabela	<ul style="list-style-type: none"> <li>- Alibangbang (<i>Bauhinia monandra</i>)</li> <li>- Mahogany (<i>Swietenia macrophylla</i>)*</li> <li>- Narra (<i>Pterocarpus indicus</i>)*</li> <li>- Palosanto (<i>Triplaris cumingiana</i>)</li> <li>- Rain tree (<i>Samanea saman</i>)*</li> <li>- Talisai (<i>Terminalia catappa</i>)</li> <li>- Teak (<i>Tectona grandis</i>)*</li> <li>- Tindalo (<i>Pachyrrhizus rhomboidea</i>)</li> <li>- Yemane (<i>Gmelina arborea</i>)*</li> </ul>

\*) Popular species for planting



表 4.11.1 PO/NGOsの運営管理能力の評価結果 (2/4)

Name of PO/NGOs	Address	Year of Establishment	# of Members	Activities										Total of 4, 5, 6, 14						
				A	B	C	D	E	F	G	H	I	J							
<b>IFUGAO (with CBFMA)</b>				2.00	2.33	2.33	2.50	1.33	2.50	2.50	2.50	2.67	2.00	2.00	0.67	2.33	3.17	2.20	30.17	12.17
1 Buanao Community Organizations Inc.	Buanao	20-Mar-97	70	3	3	3	3	0	3	3	3	3	1	2	0	3	4	3	34	15
2 Buanao Multi-Purpose Devel. Assn.	Kiangan	1991	25	2	0	2	3	0	2	2	2	2	2	2	0	2	3	2	24	11
3 Lingay Farmer's Assn	Lingay	Apr-96	32	2	1	1	2	0	2	2	2	2	2	2	0	2	3	2	22	7
4 Federation of Responsive Association for Magat Ecology, Inc.	Lanut	20-Aug-97	407	3	3	3	3	4	3	3	3	3	3	3	2	3	3	2	39	16
5 Hapao Agro-Forestry Developers Assn.	Hapao	1996	56	1	2	3	3	3	3	3	3	3	2	2	0	2	3	2	32	14
6 Numbuhitan Greener Livelihood Assn.	Lanut	Apr-97	50	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	30	10
7 Numbuhitan Environmental & Development Association, Inc.	Numbuhitan																			
<b>IFUGAO (Non-CBFMA)</b>																				
1 Golongan MPC	Golongan	Aug-97	300	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	42	15
2 Nauwana Irrigator's Association	Alfonso Lisa	1971	30	3	2	2	3	2	3	3	3	3	3	3	0	3	2	2	32	15
3 Nauwana Women's Association	Alfonso Lisa	1995	24	3	1	0	2	0	2	3	3	3	2	2	0	2	3	2	28	11
4 Panubutan MPC	Asipulo	Sep-92	72	2	2	2	2	0	2	2	2	2	2	2	0	2	3	2	27	11
5 Hailap MPC	Asipulo	Mar-97	107	3	3	3	3	4	3	3	3	3	3	4	3	4	3	3	45	17
6 Atubhan MPC	Atubhan	Aug-95	52	2	3	3	3	3	3	3	3	2	3	2	4	2	3	2	38	14
7 Cambulu People's Development	Cambulo	1990	246	2	2	2	2	2	3	3	3	3	2	2	0	2	2	2	28	12
8 Viewpoint Credit & Savings Devel. Coop.	Viewpoint	Mar-97	67	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	34	13
9 Apocian Parent's Association	Pobletion	1997	500	2	3	2	3	3	3	3	3	3	3	3	2	2	3	2	36	13
10 Buanao Savings and Credit Cooperative, Inc	Buanao	1982	4,500	2	4	4	4	2	4	3	4	3	3	3	3	3	3	3	45	16
11 Buanao Public Vendors Association Inc	Buanao	May-96	48	0	2	2	2	2	2	2	2	2	4	2	2	3	3	2	31	12
12 Tun-An MPC	Tun-An	1990	3,250	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	50	20
13 Phiwong MPC	Phiwong	Apr-85	15	0	4	4	4	3	4	3	3	3	3	3	4	3	4	3	44	16
14 O-ong Clayote Plankers Association	O-ong	May-98	11	2	0	1	2	0	2	2	2	2	2	2	2	1	3	2	23	8
15 Hapao Irrigation Service Association	Hapao	Oct-70	79	1	3	2	3	3	3	3	3	3	2	2	0	3	2	3	33	14
16 Hapao MPC	Hapao	18-Mar-88	722	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	49	18
17 Pag-asa MPC	Islog	1986	66	3	3	3	3	3	3	3	3	3	4	3	3	3	3	3	34	9
18 Kiangan Community Multipurpose & Development Coop	Pobletion	2-Dec-72	2,339	3	4	4	4	3	4	3	4	3	4	3	4	2	4	4	47	14
19 Kiangan Kalyegon MPC	Kiangan	1-Oct-85	180	2	2	3	2	2	2	2	2	2	2	2	2	2	3	2	31	12
20 Hucab Irrigators Association	Hucab	May-99	24	2	3	3	3	0	3	2	2	2	2	0	0	2	1	2	26	10
21 Higo Coffee Greener MPC	Higo	1995	98	3	3	3	3	3	3	3	3	3	3	3	1	1	2	3	32	13
22 Naluwolan MPC	Cudog	1996	118	2	3	3	3	3	3	3	3	2	2	2	2	3	3	3	37	14
23 Bulwong Development Cooperative	Bulwong	1994	185	2	2	2	2	2	2	2	2	2	2	2	2	2	4	3	41	16
24 Burney Savings Cooperative	Burney	Apr-97	138	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	33	11
25 Lufa Upland Farmer's Assn.	Lufa	Mar-85	79	3	3	3	3	3	3	3	3	3	3	2	2	2	3	3	39	15
26 Tungogod Rural Improvement Club	Tungogod	Mar-92	22	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	21	9
27 Binlap Women's Saves Organization	Binlap	1995	77	2	2	2	2	1	3	2	2	2	2	0	0	2	2	2	28	13
28 Alupagan MPC	Lanob	10-May-90	81	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	38	14
29 Pugol Women's Organization	Pugol	14-Jul-94	43	3	2	2	2	2	2	2	2	2	2	2	2	2	3	3	36	12
30 Tarap Women's Organization	Lanog	1983	21	3	2	2	2	2	2	2	2	2	2	2	2	2	3	2	27	11
31 Sanate Progressive Women's Association	Sanate	Nov-97	34	3	2	2	2	3	3	3	3	2	2	2	2	2	3	2	34	13
				2.23	2.61	2.77	2.80	2.83	2.88	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	2.87	35.13	13.26







表 4.12.1 第二地区 (Region-2) における各セクターへの予算配分実績

	2001			2000			1999			1998			1997		
	PS	MOE	CO	PS	MOE	CO	PS	MOE	CO	PS	MOE	CO	PS	MOE	CO
Region II	214598	34810	8036	217323	39005	7423	221791	34674	11213	217342	50676	14868	169456	49012	1551
GASS <sup>1</sup>	35238	2414		35238	2604		42602	1588	2600	40692	5261	8500	31415	3872	
Support to Operations	5316	1132		5316	1489		5316	1002		5688	1002		4300	1002	
Forest Management Service	120839	17089	4233	120839	15748	7423	117371	13915	8613	113716	15651	6368	90885	21001	1138
Land Management Service	41720	3689	3123	44247	6726		42556	5402		45100	8076		33756	6929	
Protected Area and Wildlife Service	2180	4093		2180	5425		2146	6565		4863	6116		3439	8345	413
Environmental Management Service	2826	3740	680	3076	2834		4963	2524		1498	2690		1209	2782	
Ecosystems Research and Development Service	6419	2653		6427	4179		6837	3678		5785	11880		4452	5081	
% FMS to total MOE		49.09			40.37			40.13			30.88			42.85	

<sup>1</sup>General Administration and Support Services

PS = Personal Services

MOE = Maintenance and Operating Expenses

CO = Capital Outlay

Source: Budget Section, Finance Division, DENR Regional Office #2

表 4.12.2 第二地区 (Region-2) における森林管理部 (FMS) の管理運営活動予算実績

	2001	2000 (%)	1999 (%)	1998 (%)	1997 (%)
Region II					
FMS	17089	15746	13915	15651	21001
□ Forest Management Service	821 4.8%	1116 7.09%	946 6.80%	1725 11.02%	1212 5.77%
□ Plantation establishment and maintenance and protection	573 3.35%	478 3.04%	434 3.12%	434 2.77%	551 2.62%
□ Forest protection	3897 22.8%	5221 33.16%	4717 33.90%	5668 36.22%	7558 35.99%
□ Community-based forestry program	1556 9.11%	3667 23.28%	3253 23.37%	3257 20.81%	5391 25.68%
□ Soil conservation and watershed management	2172 12.71%	4945 31.40%	4308 30.96%	4310 27.54%	6003 28.58%
□ Forestland Subclassification (Support to Banner program)	8070 47.23%	319 2.03%	257 1.85%	257 1.64%	286 1.36%

<sup>1</sup>General Administration and Support Services

出典: Budget Section, Finance Division, DENR Regional Office #2

表 4.12.3 第二地区 (Region-2) の本調査対象地域に係る PENRO 及び CENRO 予算配分実績(1/2)

	IFUGAO				ISABELA				NUEVA VIZCAYA				QUIRINO			
	PENRO	Lamut	A. Lista	Sn. Isidro	PENRO	Cauayan	PS/MOE	MOE+PS	PENRO	Aritao	Dupax	PENRO	Aglipay	Nagtipunan		
A. GASS	MOE+PS	MOE	MOE	PS/MOE	MOE+PS	MOE	MOE	MOE+PS	MOE	MOE	MOE	PS+MOE	MOE	MOE		
□ 2001	3699	137	123	21.95	5168	20.56	4556	4556	345.7	33.2	19449.84	28.56	33.6			
□ 2000	3699	137	123	21.95	5168	20.56	4556	4556	345.7	33.2	19449.84	28.56	33.6			
□ 1999	3979	115	115	9.3	18	9.8	10314	10314	39.7	39.7	17297.74	17.63	31.65			
□ 1998	2921	107	80	10.5	22	10.5	26	26	21	21	15572.22	21.9	21.9			
□ 1997	2592	120	120	14.24	5916.56	14.24	25	25	16	16	13836	20.5	20.5			
B. SUPPORT TO OPERATION	MOE+PS	MOE	MOE	PS/MOE	MOE+PS	MOE	MOE	MOE	MOE	MOE	MOE	PS+MOE	MOE	MOE		
□ 2001	92	19	31	6.5	14	5	49	49	10.25	10.25	30.13	11.23				
□ 2000	92	19	31	6.5	14	5	49	49	10.25	10.25	30.13	11.23				
□ 1999	84	25	22	4.73	10.82	3.5	38	38	5.33	7.83	24.8	8.5	7.5			
□ 1998	222	7	9	5.86	10.84	4.15	2.5	2.5	3.5	3.5	22	8.5	10			
□ 1997	173	15	14	6.78	21.56	6.77	20.25	20.25	11.6	9.05	17	12.5	9.5			
C. Forest Management Sector	MOE	MOE/CO	MOE/CO	MOE+CO	MOE+CO	MOE+CO	MOE	MOE	MOE+PS+CO	MOE+PS+CO	MOE	PS+MOE	MOE	MOE		
□ 2001	409	903/1583	765/1572	571.64	1497	419	432	432	737	812	827.002	433.999	420.999			
□ 2000	409	903/1583	765/1572	571.64	1497	419	432	432	737	812	827.002	433.999	420.999			
□ 1999	842	1176/288	975/289	253.38	164.01	182.67	163.24	163.24	3206.75	1001.25	903.8	438.8	577.5			
□ 1998	331	749/162	352/163	726.71	397.4	508.22	241.6	241.6	401.52	483.42	292.7	434.5	682.8			
□ 1997	360	7821.5/1636	679.5/1295	594.27	676.67	258.45	241.6	241.6	652.33	606.93	186	414.5	849.191			
D. Land Management Sector	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE		
□ 2001	67	28	30	34.83	274.02	99.53	783.9	783.9	53	59	224.2	72.9	30.9			
□ 2000	67	28	30	34.83	274.02	99.53	783.9	783.9	53	59	224.2	72.9	30.9			
□ 1999	35	16	21	7.3	77.3	7.9	1104	1104	15.95	11.65	92.4	71.5	12			
□ 1998	428	16	16	10.67	304.45	11.17	105	105	93	130	335.4	71.3	17.3			
□ 1997	48	54	91	12.75	45.8	12.75	97	97	341.26	11.87	14	16.5	16.5			

表 4.12.3 第二地区 (Region-2) の本調査対象地域に係る PENRO 及び CENRO 予算配分実績(2/2)

	IFUGAO		ISABELA		NUJEVA VIZCAYA			QUIRINO				
	PENRO MOE	Lamut MOE	A. Lista MOE	PENRO MOE	Cauayan MOE	Sn Isidro MOE	PENRO MOE	Aritao MOE	Dupax MOE	PENRO	Aglipay	Nagtipunan
F. Environmental Mgt. Sector												
□ 2001	0	48	5	50.6								
□ 2000	0	48	5	50.6								
□ 1999	39	73	77	77.54	30.95	21.6	40.8	22.3				
□ 1998	27	48	47		51.04	49.55		27.56				
□ 1997	40	18	17					32.44				
G. Ecosystems Research				MOE							MOE	
□ 2001											190	
□ 2000											190	
□ 1999				23								
□ 1998				50.3								
□ 1997												

Source: Provincial DENR Office

<sup>1</sup> FY 2001 budget is the same as FY2000

表 4.12.4 PENRO及びCENROのCBFM事業予算実績(2001年)

Object Class	Ifugao			Isabela			Nueva Vizcaya			Quirino		
	PENRO	CENRO		PENRO	CENRO		PENRO	CENRO		PENRO	CENRO	
		Lamut	Lista		Cauayan	Sn Isidro		Aritao	Dupax		Aglipay	Nagipuman
TOTAL	101,000	125,000	116,000	197,845	8,000	107,300	41,900	138,000	152,800	28,600	46,600	
02-Traveling Expenses	17,000	26,000	25,000	46,003	4,500	30,000	15,000	29,000	30,000	3,000	3,000	
03-Communication Services				2,947		16,000	7,000	3,000	13,800	3,600	17,600	
04-Repair & Maint. of Equip.						3,000	2,000	0	3,000			
05-Repair & Maint. Of Equip.	2,000		1,000			5,000	1,000	2,000	5,000			
06-Transportation Services												
07-Supplies & Materials	9,000	7,000		19,302	2,500	10,000	3,000	19,000	3,000	2,000	2,000	
08-Rentals									10,000			
014-Water,illumination & Power						64,000	4,000	5,000	8,000	8,000	8,000	
017-Training & Seminar						5,000	1,000	2,000	5,000			
023-Gasoline, Oil & Lubricants	16,000	2,000	2,000	5,267		14,300	3,900	34,000	52,000	10,000	12,000	
024-Fidelity bond & insurance Prem.						39,000	5,000	4,000	10,000			
029-Other Services	57,000	90,000	88,000	122,326	1,000	6,000	0	40,000	13,000	2,000	4,000	

Source: PENRO/CENRO Planning or Budget Officers

表 9.1.1 マガット川及びカガヤン川上流域内の小流域管理優先順位 (1/2)

Ranking	ID	Basin Area (ha)	Changed Area (ha)	Erodible Layer Reduction (mm/year)	Area (Man+ Agro) (ha)	Ref. Area Ratio (%)	Soil loss reduction (m3/yr)	Natural Score			Social Score	Synthesized Score	CADC (ha) DfR	CADC /Basin DfR	Remarks
								Layer	Area Ratio	Reduction					
1	M1-h	7,600	5,019	6,580	3,452	45	330,203	7	7	7	7	7	0	SAPI <sup>1)</sup>	
2	M2-i	7,613	2,396	7,336	2,104	28	175,706	7	7	7	7	7	7,031	92%	
3	M2-h	7,306	2,449	5,070	2,021	28	124,195	7	7	7	7	7	6,243	85%	
4	M1-f	7,316	2,350	6,992	1,979	27	164,368	7	7	7	7	7	0	Rice Terrace	
5	M5-d	7,689	5,533	5,441	4,297	56	301,143	7	7	7	6	7	0	SAPI	
6	M1-i	7,900	5,600	4,457	2,809	36	249,582	6	7	7	7	7	0	SAPI	
7	M2-d	8,038	3,352	7,334	2,441	30	245,820	7	7	7	6	7	16	0%	
8	M4-d1	6,810	1,888	5,094	1,567	23	96,150	7	6	7	7	7	6,757	99%	
9	M1-d	12,208	4,517	4,645	2,676	22	209,873	6	6	7	7	7	0	FSP (2,317ha) <sup>2)</sup>	
10	M1-g	6,790	2,194	6,172	1,789	26	135,378	7	6	7	6	7	0	Rice Terrace	
11	M5-e	3,089	2,161	5,282	1,656	54	114,141	7	7	7	5	7	0	SAPI	
12	M4-c	5,522	1,119	7,101	925	17	79,461	7	5	7	7	7	25	0%	
13	M2-e	6,698	2,635	3,089	2,106	31	81,358	5	7	7	6	6	2,053	31%	
14	M2-c	5,631	3,497	2,897	1,571	28	101,331	4	7	7	7	6	120	2%	
15	M2-g	5,649	1,425	5,339	1,070	19	76,092	7	6	7	5	6	0		
16	M4-a	5,781	3,364	3,218	1,944	34	108,240	5	7	7	5	6	0	SAPI/ITTO <sup>3)</sup>	
17	M5-c	6,683	5,017	2,341	3,877	58	117,448	4	7	7	5	6	0	National Park	
18	M1-e	6,258	1,573	2,793	1,199	19	43,942	4	6	6	7	6	0	SAPI	
19	M2-l	7,863	1,276	3,762	906	12	48,015	5	5	6	7	6	0	SAPI	
20	M2-f	4,332	957	6,538	802	19	62,588	7	5	6	5	6	0	SAPI	
21	C7-a	8,153	942	8,371	578	7	78,851	7	4	7	5	6	8,153	100%	
22	M4-g	10,732	4,676	1,048	3,830	36	48,984	3	7	6	6	6	0	SAPI	
23	M4-e	10,177	3,463	2,126	2,647	26	73,589	4	6	6	6	6	98	1%	
24	M6-c	6,835	2,898	2,125	2,012	29	61,603	4	7	6	5	6	6,331	93%	
25	M2-b	6,787	3,419	1,406	1,335	20	48,085	3	6	6	7	6	2,251	33%	
26	M1-b	4,787	3,579	1,228	1,176	25	43,959	3	6	6	7	6	0	FSP (1,032ha)	
27	M6-a	3,604	2,184	3,207	1,046	29	70,064	5	7	6	4	6	1,151	32%	
28	C9-f	4,573	1,418	4,290	920	20	60,830	6	6	6	4	6	4,384	96%	
29	M5-g	3,046	1,479	3,494	881	29	51,662	5	7	6	4	6	29	1%	
30	C10-d	5,374	1,222	5,249	452	8	64,149	7	4	6	5	6	3,568	66%	
31	M4-b	7,454	1,581	2,617	1,256	17	41,379	4	5	5	7	5	0		
32	M2-j	9,064	2,742	1,391	2,097	23	38,151	3	6	5	6	5	3,298	36%	
33	C11-a	14,253	4,458	1,025	2,036	14	45,672	3	5	6	6	5	0	SAPI/RP-G <sup>4)</sup>	
34	M2-k	9,487	1,761	1,712	1,307	14	30,104	3	5	5	7	5	5,384	57%	
35	M1-c	5,243	3,934	0,974	1,189	23	38,308	2	6	5	7	5	0		
36	M4-d2	7,401	1,518	2,487	1,161	16	37,760	4	5	5	6	5	6,180	84%	
37	M6-e	4,691	2,065	3,030	853	18	62,587	5	5	6	4	5	864	18%	
38	A3-e	5,991	360	7,141	253	4	25,693	7	3	5	5	5	166	3%	
39	M6-d	8,296	3,436	1,597	2,040	25	54,898	3	6	6	4	5	6,560	79%	
40	M1-j	7,490	5,202	0,880	1,207	16	45,771	2	5	6	6	5	0		
41	M6-b	4,666	2,085	2,099	1,177	25	43,774	4	6	5	4	5	3,414	73%	
42	M1-a	6,643	4,005	0,698	1,121	17	27,961	2	5	5	7	5	0		
43	M5-f	4,051	1,367	1,837	990	24	25,099	3	6	5	5	5	3,327	82%	
44	C9-e	3,692	930	2,439	718	19	22,663	4	6	5	4	5	3,692	100%	
45	M5-b	3,421	2,255	2,465	559	16	55,564	4	5	6	4	5	0		
46	C10-f	4,656	1,006	4,708	393	8	47,365	6	4	6	3	5	4,655	100%	
47	A3-d	6,719	809	2,623	309	5	21,203	4	3	5	7	5	0		
48	C10-c	5,281	577	4,805	229	4	27,744	6	3	5	5	5	779	15%	
49	M4-f	7,222	2,519	2,557	1,912	26	64,418	4	6	6	2	5	677	9%	
50	M5-a	7,504	4,455	2,676	609	8	119,222	4	4	7	3	5	0		
51	C9-g	5,228	1,101	3,451	424	8	37,992	5	4	5	4	5	5,212	100%	
52	A3-b	5,908	305	4,061	207	4	12,395	6	2	4	6	5	0		
53	M7-e	6,255	3,453	0,576	1,084	17	19,904	2	5	5	5	4	0		
54	A3-c	5,371	417	2,441	221	4	10,193	4	3	3	7	4	0		
55	A3-f	6,110	439	3,109	196	3	13,660	5	2	4	6	4	5,671	93%	
56	M7-d	7,066	3,964	0,543	2,214	31	21,511	2	7	5	2	4	0	SAPI	
57	M6-f	5,269	2,351	0,609	1,109	21	14,333	2	6	4	4	4	1,276	24%	
58	M3-c	4,571	2,088	0,834	882	19	17,411	2	6	4	4	4	0	ITTO	
59	M8-g	7,894	658	1,591	494	6	10,455	3	3	4	6	4	0		
60	C7-c	10,177	535	3,303	410	4	17,685	5	3	4	4	4	6,654	65%	
61	M8-h	3,659	479	1,681	402	11	8,049	3	4	3	6	4	0		
62	C7-b	5,585	488	2,939	352	6	14,347	4	4	4	4	4	5,377	96%	
63	C8-c	5,139	377	4,847	317	6	18,273	6	3	4	3	4	5,138	100%	
64	C6-c	6,653	461	6,371	253	4	29,360	7	2	5	2	4	6,653	100%	
65	C10-e	8,250	438	7,180	235	3	31,458	7	2	5	2	4	8,231	100%	
66	C5-c	8,746	434	4,115	220	3	17,880	6	2	4	4	4	0		
67	C6-a	8,901	392	3,284	199	2	12,857	5	2	4	5	4	792	9%	
68	A3-g	4,130	271	2,389	188	5	6,461	4	3	3	6	4	3,843	93%	
69	C5-d	6,064	161	6,294	117	2	10,133	7	2	3	4	4	4,697	77%	

表 9.1.1 マガット川及びカガヤン川上流域内の小流域管理優先順位 (2/2)

Ranking	ID	Basin Area (ha)	Changed Area (ha)	Erodible Layer Reduction (mm/year)	Area (Man+ Agro) (ha)	Ref. Area Ratio (%)	Soil loss reduction (m3/yr)	Natural Score			Social Score	Synthesized Score	CADC (ha) DFR	CADC /Basin DFR	Remarks
								Layer	Area Ratio	Reduction					
70	C6-b	5,490	367	3.570	94	2	13,103	5	2	4	5	4	5,398	98%	
71	C6-e	7,050	37	9.594	29	0	3,603	7	1	2	6	4	7,003	99%	
72	M6-g	5,759	2,707	0.216	1,977	34	5,861	2	7	3	3	4	795	14%	SAPI
73	C8-g	5,507	2,128	0.187	1,799	33	6,477	2	7	3	3	4	5,452	99%	
74	M8-e	8,035	3,603	0.438	1,021	13	15,784	2	5	4	4	4	0		
75	A2-e	5,609	1,645	0.205	893	16	3,366	2	5	2	6	4	800	14%	
76	A2-c	4,783	1,673	0.260	780	16	4,337	2	5	2	6	4	823	17%	
77	C8-a	7,705	495	3.614	390	5	17,875	5	3	4	3	4	7,518	98%	
78	A1-c	6,370	739	0.988	383	6	7,276	2	3	3	7	4	0		
79	M2-a	8,024	3,221	0.379	296	4	12,196	2	2	4	7	4	0		
80	C5-b	4,024	282	2.950	179	4	8,315	4	3	3	5	4	0		
81	M3-b	12,026	1,746	0.650	972	8	11,385	2	4	4	4	4	0		
82	A2-f	5,909	1,529	0.351	662	11	5,357	2	5	2	5	4	826	14%	
83	M8-b	4,448	2,355	0.372	343	8	8,757	2	4	3	5	4	0		
84	C9-b	5,684	834	3.857	298	5	32,134	5	3	5	1	4	5,684	100%	
85	A3-a	4,217	591	1.277	288	7	7,553	3	4	3	4	4	0		
86	C9-a	3,805	342	4.458	180	5	15,252	6	3	4	1	4	3,803	100%	
87	C10-a	9,385	214	3.379	130	1	7,216	5	1	3	5	4	0		RP-G
88	C10-b	6,419	161	3.702	98	2	5,962	5	2	3	4	4	0		
89	C8-b	8,291	1,557	0.603	1,409	17	9,396	2	5	3	3	3	7,308	88%	
90	C8-i	4,825	1,524	0.104	1,241	26	1,565	2	6	2	3	3	995	21%	
91	M8-f	8,655	1,490	0.653	937	11	9,732	2	4	3	4	3	0		
92	M8-c	6,899	4,432	0.446	722	10	19,778	2	4	5	2	3	0		
93	C9-c	5,829	673	0.629	562	10	4,223	2	4	2	5	3	5,789	99%	
94	M7-b	5,366	1,852	0.609	538	10	11,281	2	4	4	3	3	0		
95	C8-b	7,074	472	2.178	387	5	10,281	4	3	4	2	3	6,052	86%	
96	A2-a	5,857	737	0.531	205	3	3,931	2	2	2	7	3	0		
97	C3-c	5,425	116	1.620	78	1	1,881	3	2	2	6	3	0		
98	C6-d	4,507	50	12.377	45	1	6,149	7	1	3	2	3	4,507	100%	
99	C8-d	7,630	1,538	0.421	910	12	3,965	2	5	2	3	3	6,875	90%	
100	A2-d	6,137	1,096	0.417	648	11	4,583	2	4	2	4	3	0		
101	M7-e	6,183	2,049	0.554	440	7	11,350	2	4	4	2	3	0		
102	C8-e	5,609	359	1.760	256	5	6,332	3	3	3	3	3	5,604	100%	
103	C5-e	7,834	194	2.223	126	2	4,317	4	2	2	4	3	5,544	71%	
104	C1-d	6,832	827	0.445	261	4	3,674	2	3	2	4	3	0		
105	M6-h	3,697	1,103	0.853	244	7	9,398	2	4	3	2	3	0		
106	A1-a	7,136	1,798	-0.009	196	3	-158.573	2	2	1	6	3	0		
107	C1-e	6,619	595	0.246	96	1	1,471	2	2	2	5	3	0		
108	C3-e	5,221	102	1.254	79	2	1,276	3	2	1	5	3	0		
109	C4-c	5,024	82	3.849	53	1	3,148	5	1	2	3	3	0		
110	C3-d	6,860	33	7.505	27	0	2,470	7	1	2	1	3	0		
111	M3-a	21,345	2,921	0.148	1,404	7	4,364	2	4	2	2	3	0		
112	M7-a	6,246	1,069	0.613	391	6	6,551	2	3	3	2	3	0		
113	A1-b	4,828	540	0.877	314	6	4,742	2	4	2	2	3	0		
114	M8-d	4,863	2,093	0.373	251	5	7,802	2	3	3	2	3	0		
115	A4-b	13,010	641	0.299	151	1	1,908	2	1	2	5	3	0		
116	C2-d	5,223	620	-0.072	77	1	-441	2	2	1	5	3	0		
117	C5-a	6,044	138	1.028	55	1	1,424	3	1	2	4	3	0		
118	C3-a	5,680	430	-0.147	42	1	-631	2	1	1	6	3	0		
119	C4-d	4,926	14	5.849	11	0	788	7	1	1	1	3	67	1%	
120	C8-f	5,349	878	-0.253	645	12	-2,235	1	5	1	2	2	4,746	89%	
121	M8-a	6,033	3,214	0.038	235	4	1,233	2	3	1	3	2	0		
122	A2-b	6,101	369	0.365	144	2	1,356	2	2	1	4	2	0		
123	C1-c	7,787	311	0.144	46	1	450	2	1	1	5	2	0		
124	C4-b	3,946	28	1.980	15	0	561	3	1	1	4	2	0		
125	C1-b	5,878	155	-0.187	0	0	-287	2	1	1	5	2	0		
126	C9-d	6,237	127	0.991	95	2	1,275	2	2	1	3	2	6,237	100%	
127	C3-b	8,332	299	0.187	54	1	555	2	1	1	4	2	0		
128	C4-a	2,881	74	-0.250	2	0	-179	1	1	1	5	2	0		
129	C2-a	5,976	19	-0.017	0	0	0	2	1	1	4	2	0		
130	A4-a	10,586	70	0.300	14	0	188	2	1	1	3	2	0		
131	C2-c	7,118	60	-0.153	1	0	-95	2	1	1	3	2	0		
132	C2-b	4,966	96	-0.092	0	0	-88	2	1	1	2	2	0		
133	C1-a	8,454	0	0.000	0	0	0	2	1	1	1	1	0		
TOTAL		874,602	210,992		111,222								23,257,550		

- 1) SAPI: SWS is included in FSP-2 by Special Assistance for Project Implimentation
- 2) FSP: Ther is a Sub-project sit of Forestry Sector Project
- 3) ITTO: Ther is a CBFM project funded by International Timber Trading Organization
- 4) RP-G: There is a CBFM project funded by RP-German Debt-for-Nature-Swap Initiative Program



表 9.1.2 マガット川及びカガヤン川上流域内小流域の復旧・管理主体 (1/2)

Ranking	ID	Basin Area (ha)	Area (Man+ Agro) (ha)	Ref. Area Ratio (%)	CADC (ha) DfR	CADC /Basin (%) DfR	Remarks	SUSIMO	
								DENR	NCIP
		(1)	(2)	(3)=(2)/(1)	(4)	(5)=(4)/(1)			
5	M5-d	7,689	4,297	56			SAPI <sup>1)</sup>	○	
17	M5-c	6,683	3,877	58			National Park	○	
22	M4-g	10,732	3,830	36			SAPI	○	
1	M1-h	7,600	3,452	45			SAPI	○	
6	M1-i	7,900	2,809	36			SAPI	○	
9	M1-d	12,208	2,676	22			FSP (2,317ha)	○	
23	M4-e	10,177	2,647	26	98	1%	SAPI	○	
7	M2-d	8,038	2,441	30	16	0%	SAPI	○	
56	M7-d	7,066	2,214	31			SAPI	○	
13	M2-e	6,698	2,106	31	2,053	31%		○	○
2	M2-i	7,613	2,104	28	7,031	92%			○
32	M2-j	9,064	2,097	23	3,298	36%		○	○
39	M6-d	8,296	2,040	25	6,560	79%			○
33	C11-a	14,253	2,036	14			SAPI/RP-G <sup>3)</sup>	○	
3	M2-h	7,306	2,021	28	6,243	85%			○
24	M6-c	6,835	2,012	29	6,331	93%			○
4	M1-f	7,316	1,979	27			Rice Terrace	○	
72	M6-g	5,759	1,977	34	795	14%	SAPI	○	
16	M4-a	5,781	1,944	34			SAPI/ITTO <sup>4)</sup>	○	
49	M4-f	7,222	1,912	26	677	9%		○	
73	C8-g	5,507	1,799	33	5,452	99%			○
10	M1-g	6,790	1,789	26			Rice Terrace	○	
11	M5-e	3,089	1,656	54			SAPI	○	
14	M2-c	5,631	1,571	28	120	2%	SAPI	○	
8	M4-d1	6,810	1,567	23	6,757	99%			○
89	C8-h	8,291	1,409	17	7,308	88%			○
111	M3-a	21,345	1,404	7				○	
25	M2-b	6,787	1,335	20	2,251	33%	FSP (1,032ha)	○	○
34	M2-k	9,487	1,307	14	5,384	57%		○	○
31	M4-b	7,454	1,256	17				○	
90	C8-i	4,825	1,241	26	995	21%		○	○
40	M1-j	7,490	1,207	16				○	
18	M1-e	6,258	1,199	19			SAPI	○	
35	M1-c	5,243	1,189	23				○	
41	M6-b	4,666	1,177	25	3,414	73%		○	○
26	M1-b	4,787	1,176	25			SAPI	○	
36	M4-d2	7,401	1,161	16	6,180	84%			○
42	M1-a	6,643	1,121	17				○	
57	M6-f	5,269	1,109	21	1,276	24%	SAPI	○	○
53	M7-e	6,255	1,084	17				○	
15	M2-g	5,649	1,070	19				○	
27	M6-a	3,604	1,046	29	1,151	32%		○	○
74	M8-e	8,035	1,021	13				○	
43	M5-f	4,051	990	24	3,327	82%			○
81	M3-b	12,026	972	8				○	
91	M8-f	8,655	937	11				○	
12	M4-c	5,522	925	17	25	0%	SAPI	○	
28	C9-f	4,573	920	20	4,384	96%			○
99	C8-d	7,630	910	12	6,875	90%			○
19	M2-l	7,863	906	12			SAPI	○	
75	A2-e	5,609	893	16	800	14%		○	
58	M3-c	4,571	882	19			ITTO	○	
29	M5-g	3,046	881	29	29	1%	SAPI	○	
37	M6-e	4,691	853	18	864	18%		○	
20	M2-f	4,332	802	19			SAPI	○	
76	A2-c	4,783	780	16	823	17%		○	
92	M8-c	6,899	722	10				○	
44	C9-e	3,692	718	19	3,692	100%			○
82	A2-f	5,909	662	11	826	14%		○	
100	A2-d	6,137	648	11				○	
120	C8-f	5,349	645	12	4,746	89%			○
50	M5-a	7,504	609	8				○	
21	C7-a	8,153	578	7	8,153	100%			○
93	C9-c	5,829	562	10	5,789	99%			○
45	M5-b	3,421	559	16				○	
94	M7-b	5,366	538	10				○	
59	M8-g	7,894	494	6				○	
30	C10-d	5,374	452	8	3,568	66%		○	○
101	M7-c	6,183	440	7				○	
51	C9-g	5,228	424	8	5,212	100%			○
60	C7-e	10,177	410	4	6,654	65%		○	○
61	M8-h	3,659	402	11				○	
46	C10-f	4,656	393	8	4,655	100%			○

表 9.1.2 マガット川及びカガヤン川上流域内小流域の復旧・管理管理主体 (2/2)

Ranking	ID	Basin Area (ha)	Area (Man+ Agro) (ha)	Ref. Area Ratio (%)	CADC (ha) DfR	CADC /Basin (%) DfR	Remarks	SUSIMO	
								DENR	NCIP
		(1)	(2)	(3)=(2)/(1)	(4)	(5)=(4)/(1)			
112	M7-a	6,246	391	6				○	
77	C8-a	7,705	390	5	7,518	98%			○
95	C8-b	7,074	387	5	6,052	86%			○
78	A1-c	6,370	383	6				○	
62	C7-b	5,585	352	6	5,377	96%			○
83	M8-b	4,448	343	8				○	
63	C8-c	5,139	317	6	5,138	100%			○
113	A1-b	4,828	314	6				○	
47	A3-d	6,719	309	5				○	
84	C9-b	5,684	298	5	5,684	100%			○
79	M2-a	8,024	296	4				○	
85	A3-a	4,217	288	7				○	
104	C1-d	6,832	261	4				○	
102	C8-e	5,609	256	5	5,604	100%			○
64	C6-c	6,653	253	4	6,653	100%			○
38	A3-e	5,991	253	4	166	3%		○	
114	M8-d	4,863	251	5				○	
105	M6-h	3,697	244	7				○	
65	C10-e	8,250	235	3	8,231	100%			○
121	M8-a	6,033	235	4				○	
48	C10-c	5,281	229	4	779	15%	RP-G	○	
54	A3-c	5,371	221	4				○	
66	C5-c	8,746	220	3				○	
52	A3-b	5,908	207	4				○	
96	A2-a	5,857	205	3				○	
67	C6-a	8,901	199	2	792	9%	RP-G	○	
55	A3-f	6,110	196	3	5,671	93%			○
106	A1-a	7,136	196	3				○	
68	A3-g	4,130	188	5	3,843	93%			○
86	C9-a	3,805	180	5	3,803	100%			○
80	C5-b	4,024	179	4				○	
115	A4-b	13,010	151	1				○	
122	A2-b	6,101	144	2				○	
87	C10-a	9,385	130	1			RP-G	○	
103	C5-e	7,834	126	2	5,544	71%		○	○
69	C5-d	6,064	117	2	4,697	77%		○	○
Sub-total		727,953	110,212		209,364			81	40
88	C10-b	6,419	98	2					
107	C1-e	6,619	96	1					
126	C9-d	6,237	95	2	6,237	100%			
70	C6-b	5,490	94	2	5,398	98%			
108	C3-e	5,221	79	2					
97	C3-c	5,425	78	1					
116	C2-d	5,223	77	1					
117	C5-a	6,044	55	1					
127	C3-b	8,332	54	1					
109	C4-c	5,024	53	1					
123	C1-c	7,787	46	1					
98	C6-d	4,507	45	1	4,507	100%			
118	C3-a	5,680	42	1					
71	C6-e	7,050	29	0	7,003	99%			
110	C3-d	6,860	27	0					
124	C4-b	3,946	15	0					
130	A4-a	10,586	14	0					
119	C4-d	4,926	11	0	67	1%			
128	C4-a	2,881	2	0					
131	C2-c	7,118	1	0					
125	C1-b	5,878	0	0					
129	C2-a	5,976	0	0					
132	C2-b	4,966	0	0					
133	C1-a	8,454	0	0					
Sub-total		146,649	1,010		23,211				
TOTAL		874,602	111,222		232,576			81	40

- 1) SAPI: SWS is included in FSP-2 by Special Assistance for Project Implimentation
- 2) FSP: Ther is a Sub-project sit of Forestry Sector Project
- 3) RP-G: There is a CBFM project funded by RP-German Debt-for-Nature-Swap Initiative Program
- 4) ITTO: Ther is a CBFM project funded by International Timber Trading Organization

表 9.4.1 単価表 (1/2)

<b>I. Rehabilitation Plan</b>		<b>Unit Cost (Round)</b>	<b>Unit/year</b>	<b>Unit Cost (P1,000)</b>
<b>I-1</b>	<b>Rehabilitation w/CBFM</b>			
	a) Assisted natural regeneration (ANR)	6,200.00	Php/ha	6.2
	b) Forest stand improvement (FSI)	4,500.00	Php/ha	4.5
	c) Timber stand improvement (TSI)	5,200.00	Php/ha	5.2
	d) Reforestation	16,100.00	Php/ha	16.1
	e) Agroforestry	14,900.00	Php/ha	14.9
	f) Silvopastoral	15,300.00	Php/ha	15.3
	<b>Total of Plantation Establishment</b>			
<b>I-2</b>	<b>Protection and Maintenance Components</b>			
	a1) Assisted natural regeneration (ANR) (1st year)	6,200.00	Php/ha	6.2
	a2) Assisted natural regeneration (ANR) (2nd year)	4,700.00	Php/ha	4.7
	b1) Forest stand improvement (FSI) (1st year)	3,200.00	Php/ha	3.2
	b2) Forest stand improvement (FSI) (2nd year)	2,000.00	Php/ha	2.0
	c1) Timber stand improvement (TSI) (1st year)	1,600.00	Php/ha	1.6
	c2) Timber stand improvement (TSI) (2nd year)	1,100.00	Php/ha	1.1
	d1) Reforestation (1st year)	12,700.00	Php/ha	12.7
	d2) Reforestation (2nd year)	6,800.00	Php/ha	6.8
	d3) Reforestation (3rd year)	3,200.00	Php/ha	3.2
	e1) Agroforestry (1st year)	5,900.00	Php/ha	5.9
	e2) Agroforestry (2nd year)	8,200.00	Php/ha	8.2
	e3) Agroforestry (3rd year)	2,800.00	Php/ha	2.8
	f1) Silvopastoral (1st year)	6,700.00	Php/ha	6.7
	f2) Silvopastoral (2nd year)	1,400.00	Php/ha	1.4
	f3) Silvopastoral (3rd year)	200.00	Php/ha	0.2
<b>I-3</b>	<b>Infrastructure for Nursery</b>			
	a) Assisted natural regeneration (ANR)	600.00	Php/ha	0.6
	b) Reforestation	1,800.00	Php/ha	1.8
	c) Agroforestry	1,200.00	Php/ha	1.2
<b>IV-4</b>	<b>Community based Enterprise Development</b>	100,000.00	nos.	100.0
<b>II</b>	<b>PO/IPO Capacity Building</b>	<b>Unit Cost</b>	<b>Unit/year</b>	<b>Unit Cost (P1,000)</b>
<b>II-1</b>	<b>Community Organizing and PO Formulation</b>			
	a) POs/IPOs with Rehabilitation Plan III (112)	546,800.00	Php/POorIPO	546.8
	b) POs/IPOs without Rehabilitation Plan III (296)	41,100.00	Php/POorIPO	41.1
<b>II-2</b>	<b>Participatory Planning</b>			
	a) POs/IPOs with Rehabilitation Plan III	2,500.00	Php/POorIPO	2.5
	b) POs/IPOs without Rehabilitation Plan III	600.00	Php/POorIPO	0.6
<b>II-2</b>	<b>PO/IPO Capacity Building</b>			
	a) POs/IPOs with Rehabilitation Plan III	3,272,200.00	Php/POorIPO	3,272.2
	b) POs/IPOs without Rehabilitation Plan III	695,800.00	Php/POorIPO	695.8

表 9.4.1 単価表 (2/2)

<b>III Institutional Strengthening</b>		<b>Unit Cost</b>	<b>Unit/year</b>	<b>Unit Cost (P1,000)</b>
<b>III-1</b>	SUSIMO (DENR/NCIP) Building Construction	200,000.00	Php/unit	200.0
<b>III-2</b>	Vehicle			
	For DENR/NCIP			
	Pick-up	1,050,000.00	Php/unit	1,050.0
	For PMOs			
	Pick-up	1,050,000.00	Php/unit	1,050.0
	Motorcycle	90,000.00	Php/unit	90.0
	For SUSIMO (DENR/NCIP)			
	Pick-up	1,050,000.00	Php/unit	1,050.0
	Motorcycle	90,000.00	Php/unit	90.0
<b>III-3</b>	Equipment			
	For DENR/NCIP			
	Computer set	85,000.00	Php/unit	85.0
	Laser printer	40,000.00	Php/unit	40.0
	Photo copier	350,000.00	Php/unit	350.0
	Others	1,525,000.00	Php/unit	1,525.0
	For PMO (DENR/NCIP)			
	Computer set	85,000.00	Php/unit	85.0
	Laser printer	40,000.00	Php/unit	40.0
	Photo copier	350,000.00	Php/unit	350.0
	GPS	20,000.00	Php/unit	20.0
	Others	505,000.00	Php/unit	505.0
	For SUSIMO (DENR/NCIP)			
	Computer set	85,000.00	Php/unit	85.0
	Laser printer	40,000.00	Php/unit	40.0
	Surveying equipment	110,000.00	Php/unit	110.0
	GPS	20,000.00	Php/unit	20.0
	Others	245,000.00	Php/unit	245.0
<b>III-4</b>	Capacity building			
	Informal training (short training)	540,000.00	Php in total	540.0
	Formal training (MS scholarship)	716,000.00	Php in total	716.0
	Field visit (ASEAN)	990,000.00	Php in total	990.0
<b>III-5</b>	Str'ng tech. acq'n and transfer	1,020,000.00	Php in total	1,020.0
<b>IV</b>	<b>Watershed Management Council and Cost Sharing Mechanism Establishment for FSP-2</b>	<b>Unit Cost</b>	<b>Unit/year</b>	<b>Unit Cost (P1,000)</b>
<b>IV-1</b>	<b>Initiative for WM councils establishment</b>			
		1,800,000.00	Php	1,800.0
<b>IV-2</b>	<b>Initiative for Cost Sharing Mechanism</b>			
		1,300,000.00	Php	1,300.0

表 9.4.2 M/P事業費概算

		(unit: million pesos)
	Items	Total
<b>I.</b>	<b>Preparatory Wokk</b>	<b>215.1</b>
<b>II.</b>	<b>PO Formation &amp; CBFMA Acquisition / IPO Formation</b>	<b>73.4</b>
	II-1 Pos/IPOs with Rehabilitation Plan	61.2
	II-2 Pos/IPOs without Rehabilitation Plan	12.2
<b>III.</b>	<b>Participatory Planning</b>	<b>0.5</b>
	III-1 Pos/IPOs with Rehabilitation Plan	0.3
	III-2 Pos/IPOs without Rehabilitation Plan	0.2
<b>IV.</b>	<b>Rehabilitation of Degraded Protecteed and Forestland</b>	<b>5,791.9</b>
	IV-1 Plantation Establishment	2,697.2
	IV-2 Infrastructure	184.9
	IV-3 Protection and Maintenance	2,909.9
<b>V.</b>	<b>Community based Enterprise Development</b>	<b>40.8</b>
<b>VI.</b>	<b>PO/IPO Capacity Building</b>	<b>573.3</b>
	VI-1 Pos/IPOs with Rehab. Plan III above	366.5
	VI-2 Pos/IPOs without Rehab. Plan III above	206.8
<b>VII.</b>	<b>Institutional Strengthening</b>	<b>690.7</b>
	VII-1 SUSIMO Building Construction	24.2
	VII-2 Vehicle	323.0
	VII-3 Equipment	151.6
	VII-4 Capacity building	179.6
	VII-5 Strengthening technical. acquisition and transfer	12.2
<b>VIII.</b>	<b>Initiative for WM councils establishment</b>	<b>1.8</b>
<b>IX.</b>	<b>Initiative for Cost Sharing Mechanism</b>	<b>1.3</b>
<b>X.</b>	<b>SUB-TOTAL</b>	<b>7,388.8</b>
<b>XI.</b>	<b>TA Consultant (8% of X)</b>	<b>591.1</b>
<b>XII.</b>	<b>Contingency (10 % of X-XI)</b>	<b>798.0</b>
<b>XIII.</b>	<b>Administrative Cost ( 6% of X-XI)</b>	<b>478.8</b>
	<b>Grand Total</b>	<b>9,256.6</b>

表 9.5.1 M/P実施計画

Activities	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1 Preparatory Works	■	■	■	■	■	■	■	■	■	■	■	■
2 PO Formation and CBEMA Acquisition/IPO Formation		■	■	■	■	■	■	■	■	■	■	■
3 Participatory Planning			■	■	■	■	■	■	■	■	■	■
4 Rehabilitation of Degraded Protected Area and Forestland			■	■	■	■	■	■	■	■	■	■
4.1 Nursery preparation			■	■	■	■	■	■	■	■	■	■
4.2 Plantation Establishment			■	■	■	■	■	■	■	■	■	■
4.3 Protection and maintenance (regular survival rate survey/replanting)			■	■	■	■	■	■	■	■	■	■
4.4 Community Based Enterprise Development			■	■	■	■	■	■	■	■	■	■
5 PO/IPO Capacity Building (POCB) by AO			■	■	■	■	■	■	■	■	■	■
5.1 Capacity building for preparatory work			■	■	■	■	■	■	■	■	■	■
5.2 Capacity building for participatory planning			■	■	■	■	■	■	■	■	■	■
5.3 Capacity building for project implementation			■	■	■	■	■	■	■	■	■	■
6 Institutional Strengthening			■	■	■	■	■	■	■	■	■	■
6.1 Human resource development			■	■	■	■	■	■	■	■	■	■
6.2 Construction of SUSIMO offices			■	■	■	■	■	■	■	■	■	■
6.3 Mobility improvement (procurement of vehicles and motorcycles)			■	■	■	■	■	■	■	■	■	■
6.4 Provision of office equipment and furniture			■	■	■	■	■	■	■	■	■	■
7 Initiative for Watershed Management Council			■	■	■	■	■	■	■	■	■	■
7.1 Creation of a task force			■	■	■	■	■	■	■	■	■	■
7.2 Formulation of action plan			■	■	■	■	■	■	■	■	■	■
7.3 Dissemination and consensus building			■	■	■	■	■	■	■	■	■	■
7.4 Preparation of draft documents			■	■	■	■	■	■	■	■	■	■
7.5 Workshop to refine the draft documents by stakeholders			■	■	■	■	■	■	■	■	■	■
7.6 Authorization of creation of the council			■	■	■	■	■	■	■	■	■	■
7.7 General Assembly Meeting			■	■	■	■	■	■	■	■	■	■
8 Initiative for Cost Sharing Mechanism			■	■	■	■	■	■	■	■	■	■
8.1 Creation of a task force			■	■	■	■	■	■	■	■	■	■
8.2 Formulation of action plan			■	■	■	■	■	■	■	■	■	■
8.3 Dissemination and consensus building			■	■	■	■	■	■	■	■	■	■
8.4 Drafting the mechanism			■	■	■	■	■	■	■	■	■	■
8.5 Workshop to refine the draft documents by stakeholders			■	■	■	■	■	■	■	■	■	■
8.6 Legislative process of the mechanism			■	■	■	■	■	■	■	■	■	■

表 9.5.2 M/P年次実施計画 (1/3)

Items	unit	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
I. Preparatory Work		LS	LS	LS	LS	LS								
II. PO Formation & CBFMA Acquisition / IPO Formation	ha													408
II-1 POs with Rehabilitation Plan		112	112	112	112									112
II-2 POs without Rehabilitation Plan							296	296	296	296				296
III. Participatory Planning	ha													408
III-1 POs with Rehabilitation Plan														112
III-2 POs without Rehabilitation Plan							296	296	296	296				296
IV. Rehabilitation of Degraded Protected and Forestland	ha													181,000
IV-1 Plantation Establishment														119,300
a) Assisted natural regeneration (ANR)	ha											8,000		8,000
b) Forest stand improvement (FSI)	ha											2,100		2,100
c) Timber stand improvement (TSI)	ha											2,500		2,500
d) Reforestation	ha				11,086	11,086	11,086	11,086	11,086	11,086	11,086			77,600
e) Agroforestry	ha				4,814	4,814	4,814	4,814	4,814	4,814	4,814			33,700
f) Silvopastoral	ha				8,157	8,157	8,157	8,157	8,157	8,157	8,157			57,100
IV-2 Infrastructure														8,000
a) Assisted natural regeneration (ANR)	ha				11,086	11,086	11,086	11,086	11,086	11,086	11,086			77,600
d) Reforestation	ha				4,814	4,814	4,814	4,814	4,814	4,814	4,814			33,700
e) Agroforestry	ha													530,400
IV-3 Protection and Maintenance														8,000
a1) Assisted natural regeneration (ANR) (1st year)	ha											8,000		8,000
a2) Assisted natural regeneration (ANR) (2nd year)	ha												8,000	8,000
b1) Forest stand improvement (FSI) (1st year)	ha											2,100		2,100
b2) Forest stand improvement (FSI) (2nd year)	ha												2,100	2,100
c1) Timber stand improvement (TSI) (1st year)	ha												2,500	2,500
c2) Timber stand improvement (TSI) (2nd year)	ha												2,500	2,500
d1) Reforestation (1st year)	ha				11,086	11,086	11,086	11,086	11,086	11,086	11,086			77,600
d2) Reforestation (2nd year)	ha				11,086	11,086	11,086	11,086	11,086	11,086	11,086			77,600
d3) Reforestation (3rd year)	ha													77,600
e1) Agroforestry (1st year)	ha				4,814	4,814	4,814	4,814	4,814	4,814	4,814			33,700
e2) Agroforestry (1st year)	ha				4,814	4,814	4,814	4,814	4,814	4,814	4,814			33,700
e3) Agroforestry (1st year)	ha				4,814	4,814	4,814	4,814	4,814	4,814	4,814			33,700
f1) Silvopastoral (1st year)	ha				8,157	8,157	8,157	8,157	8,157	8,157	8,157			57,100
f2) Silvopastoral (2nd year)	ha				8,157	8,157	8,157	8,157	8,157	8,157	8,157			57,100
f3) Silvopastoral (3rd year)	ha													57,100
V. Community based Enterprise Development	nos.				75	37						148	148	408
VI. PO/IPO Capacity Building														408
VI-1 Pos/IPOs with Rehab. Plan III above	nos.			112	112	112	112	112	112	112				112
VI-2 Pos/IPOs without Rehab. Plan III above	nos.			6	6	6	6	6	6	6	6	6	6	296

表 9.5.2 M/P年次実施計画 (2/3)

Items	unit	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
<b>VII. Institutional Strengthening</b>														
<b>VII-1 SUSIMO Building Construction</b>														
a) SUSIMO DENR	nos.		54	27										81
b) SUSIMO NCIP	nos.		27	13										40
<b>VII-2 Additional Manpower Input for PMOs</b>														
a) FMO DENR														
Project Manager (1)	persons	4												4
Technical staff (3)	persons	12												12
Administrative staff (1)	persons	4												4
Driver and Utility (1)	persons	4												4
b) PMO NCIP														
Project Manager (1)	persons	4												4
Technical staff (3)	persons	12												12
Administrative staff (1)	persons	4												4
Driver and Utility (1)	persons	4												4
<b>VII-3 Additional Manpower Input for SUSIMOs</b>														
a) SUSIMO DENR														
Office Manager (1)	persons	54	27											81
Unit Head (3)	persons	162	81											243
Technical staff (5)	persons	270	135											405
Clerk (1)	persons	54	27											81
Driver (1)	persons	54	27											81
b) SUSIMO NCIP														
Office Manager (1)	persons	27	13											40
Unit Head (3)	persons	81	39											120
Technical staff (5)	persons	135	65											200
Clerk (1)	persons	27	13											40
Driver (1)	persons	27	13											40
<b>VII-4 Additional Manpower Input for Regular Organization</b>														
a) PENRO/CENRO														
Forester I (1)_FPU	persons	8												0
Forester II (1)_FPU	persons	4												8
Forest Ranger_FPU	persons	25												4
Forest Guard_FPU	persons	36												25
Forester I (1)_WMU	persons	21												36
Forester II (1)_WMU	persons	1												21
Forester I (2)_PA&WU	persons	1												1
Forester II (2)_PA&WU	persons	1												1
PA Guard_PA&WU	persons	4												1
b) ENROs														
Forester I (1)_CBFMU	persons	2												4
Forester I (1)_WMU	persons	2												0
														7
														8



表 9.5.2 M/P年次実施計画 (3/3)

Items	unit	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
<b>VII-5 Vehicle</b>														
a) For DENR/NCIP														
Pick-up	nos.	4						4						8
b) For PMOs														
Pick-up	nos.	8						8						16
c) For SUSIMOs DENR														
Pick-up		81						81						162
Motorcycle		162						162						324
d) For SUSIMOs NCIP														
Pick-up		40						40						80
Motorcycle		81						81						162
<b>VII-6 Equipment</b>														
a) For DENR/NCIP														
Computer set	nos.	7						7						14
Laser printer	nos.	7						7						14
Photo copier	nos.	2						2						4
Others	set	2						2						4
b) For 4 PMOs DENR and 4 PMOs NCIP														
Computer set	nos.	32						32						64
Laser printer	nos.	24						24						48
Photo copier	nos.	8						8						16
GPS	nos.	8						8						16
Others	set.	8						8						16
c) For SUSIMOs DENR														
Computer set	nos.	81						81						162
Laser printer	nos.	81						81						162
Surveying equipment	nos.	81						81						162
GPS	nos.	81						81						162
Others	nos.	81						81						162
d) For SUSIMOs NCIP														
Computer set	nos.	40						40						80
Laser printer	nos.	40						40						80
Surveying equipment	nos.	40						40						80
GPS	nos.	40						40						80
Others	nos.	40						40						80
<b>VII-7 Capacity building</b>														
a) Informal training (short training)	times	9	9	9	9	9	9	9	9	9	9	9	9	72
b) Formal training (MS scholarship)	person		9	18	18	18	18	12	6	6	3			108
c) Field visit (ASEAN)	person		16		16		16		16					64
VII-8 String techn. acqu'n and transfer	nos.	1	1	1	1	1	1	1	1	1	1	1	1	12
VIII Initiative for WM councils establishment	LS			1	1	1	1	1	1	1	1	1	1	1
VIII Initiative for Cost Sharing Mechanism	LS			1	1	1	1	1	1	1	1	1	1	1

表 9.5.3 森林セクタープロジェクトフェーズ2 (FSP-2) 実施計画

Activities	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
<b>Prudg of the loan (by JBIC)</b>	●										
<b>Loan Agreement Period - 10 years (expected)</b>											
<b>Consulting Services</b>											
<b>Assisting Organization (AO)</b>											
<b>1 Preparatory Works</b>											
1.1 Organizing PMOs & SUSIMOs											
1.2 Procurement of TA Consultants											
1.3 Preparation of digital topographic maps (1:10,000)											
1.4 Socio-economic Baseline Survey											
1.5 Preliminary Study on Livelihood/Enterprise Development											
1.6 Selection of POCB (CO) Contractors											
1.7 Silvo-pasture Development Study (sub-contract)											
<b>2 PO Formation and CBFMA Acquisition</b>											
2.1 Preliminary identification of CBFM target sites											
2.2 CBFM campaign											
2.3 Consultation with the communities / potential PO members											
2.4 PO registration											
2.5 Recruitment of PO members and consensus building											
2.6 Identification and Approval of CBFM areas by PO											
2.7 Perimeter survey of the selected CBFM areas											
2.8 CBFMA acquisition											
2.9 Evaluation on the PO Formation for Implementation											
<b>3 Participatory Planning</b>											
3.1 Social survey on CBFM area users/occupants/claimants											
3.2 Planning of Sub-projects											
<b>4 Site Development</b>											
4.1 Conclusion of site development contracts											
4.2 Nursery preparation											
4.3 Plantation Establishment											
4.4 Protection and maintenance (regular survival rate survey/replanting)											
4.5 Survey on survival rate by a third party (sub-contract)											
4.6 Community Based Enterprise Development											
4.7 Formulation and approval of RUP											
<b>5 Rural Infrastructure Development</b>											
5.1 Planning											
5.2 Detailed engineering design and cost estimate											
5.3 Procurement of civil work contractors											
5.4 Construction work											
5.5 Maintenance (by LGUs and POs)											
<b>6 PO Capacity Building (POCB) by AO</b>											
6.1 Assistance in PO formation and CBFMA acquisition											
6.2 Assistance in participatory planning											
6.3 Assistance in organizational structure improvement											
6.4 Assistance in managerial capacity development											
6.5 Assistance in PO enterprise development											
6.6 Assistance in technical capacity development											
6.7 Assistance in Annual review and updating of I/P											
<b>7 Institutional Strengthening</b>											
7.1 Human resource development											
7.2 Construction of SUSIMO offices											
7.3 Mobility improvement (procurement of vehicles and motorcycles)											
7.4 Provision of office equipment and furniture											
<b>8 Initiative for Watershed Management Council</b>											
8.1 Creation of a task force											
8.2 Formulation of action plan											
8.3 Dissemination and consensus building											
8.4 Preparation of draft documents											
8.5 Workshop to refine the draft documents by stakeholders											
8.6 Authorization of creation of the council											
8.7 General Assembly Meeting											
<b>9 Initiative for Cost Sharing Mechanism</b>											
9.1 Creation of a task force											
9.2 Formulation of action plan											
9.3 Dissemination and consensus building											
9.4 Drafting the mechanism											
9.5 Workshop to refine the draft documents by stakeholders											
9.6 Legislative process of the mechanism											
<b>10 Terminal and Ex Post Project Evaluation</b>											
10.1 Socio-economic Survey for Evaluation (sub-contract)											
10.2 Terminal evaluation and phase in/out planning											
10.3 Aerial Validation of the Plantation											

Source : Implementation Program for Forestry Sector Project Phase 2

表 9.5.4 M/P年次別事業費積算 (1/4)

Items	unit	Unit Price	(unit: million Pesos)												Total		
			2,004	2,005	2,006	2,007	2,008	2,009	2,010	2,011	2,012	2,013	2,014	2,015			
<b>I. Preparatory Work</b>			43.0	43.0	43.0	43.0	43.0										215.1
<b>II. PO Formation &amp; CBFMA Acquisition / IPO Formation</b>	<b>Total</b>																73.4
II-1 POs with Rehabilitation Plan		20		20.4	20.4	20.4	20.4										61.2
II-2 POs without Rehabilitation Plan		4					4.1	4.1	4.1	4.1							12.2
<b>III. Participatory Planning</b>	<b>Total</b>																0.5
III-1 POs with Rehabilitation Plan		0.1		0.1	0.1	0.1	0.1										0.3
III-2 POs without Rehabilitation Plan		0.1					0.1	0.1	0.1	0.1							0.2
<b>IV. Rehabilitation of Degraded Protected and Forestland</b>	<b>Total</b>																5,791.9
<b>IV-1 Plantation Establishment</b>																	2,697.2
a) Assisted natural regeneration (ANR)	ha	0.006													49.6		49.6
b) Forest stand improvement (FSI)	ha	0.005													9.5		9.5
c) Timber stand improvement (TSI)	ha	0.005													13.0		13.0
d) Reforestation	ha	0.016				178.5	178.5	178.5	178.5	178.5	178.5	178.5					1,249.4
e) Agroforestry	ha	0.015				71.7	71.7	71.7	71.7	71.7	71.7	71.7					502.1
f) Silvopastoral	ha	0.015				124.8	124.8	124.8	124.8	124.8	124.8	124.8					873.6
<b>IV-2 Infrastructure</b>																	184.9
a) Assisted natural regeneration (ANR)	ha	0.001													4.8		4.8
d) Reforestation	ha	0.002				20.0	20.0	20.0	20.0	20.0	20.0	20.0					139.7
e) Agroforestry	ha	0.001				5.8	5.8	5.8	5.8	5.8	5.8	5.8					40.4
<b>IV-3 Protection and Maintenance</b>																	2,909.9
a1) Assisted natural regeneration (ANR) (1st year)	ha	0.006													49.6		49.6
a2) Assisted natural regeneration (ANR) (2nd year)	ha	0.005													37.6		37.6
b1) Forest stand improvement (FSI) (1st year)	ha	0.003													6.7		6.7
b2) Forest stand improvement (FSI) (2nd year)	ha	0.002													4.2		4.2
c1) Timber stand improvement (TSI) (1st year)	ha	0.002													4.0		4.0
c2) Timber stand improvement (TSI) (2nd year)	ha	0.001													2.8		2.8
d1) Reforestation (1st year)	ha	0.013				140.8	140.8	140.8	140.8	140.8	140.8	140.8					985.5
d2) Reforestation (2nd year)	ha	0.007				75.4	75.4	75.4	75.4	75.4	75.4	75.4					527.7
d3) Reforestation (3rd year)	ha	0.003				35.5	35.5	35.5	35.5	35.5	35.5	35.5					248.3
e1) Agroforestry (1st year)	ha	0.006				28.4	28.4	28.4	28.4	28.4	28.4	28.4					198.8
e2) Agroforestry (1st year)	ha	0.008				39.5	39.5	39.5	39.5	39.5	39.5	39.5					276.3
e3) Agroforestry (1st year)	ha	0.003				13.5	13.5	13.5	13.5	13.5	13.5	13.5					94.4
f1) Silvopastoral (1st year)	ha	0.007				54.7	54.7	54.7	54.7	54.7	54.7	54.7					382.6
f2) Silvopastoral (2nd year)	ha	0.001				11.4	11.4	11.4	11.4	11.4	11.4	11.4					79.9
f3) Silvopastoral (3rd year)	ha	0.000				1.6	1.6	1.6	1.6	1.6	1.6	1.6					11.4

表 9.5.4 M/P年次別事業費積算 (2/4)

Items	unit	Unit Price	(unit: million Pesos)											Total
			2,004	2,005	2,006	2,007	2,008	2,009	2,010	2,011	2,012	2,013	2,014	
<b>V. Community based Enterprise Development</b>	nos.	0.1					7.5	3.7				14.8	14.8	40.8
<b>VI. PO/IPO Capacity Building</b>	nos.	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1	61.1			573.3
VI-1 Pos/IPOs with Rehab. Plan III above														366.5
VI-2 Pos/IPOs without Rehab. Plan III above		0.1	0.8	0.8	0.8	0.8	0.8	0.8	0.9	40.9	40.9	40.9	40.9	206.8
<b>VII. Institutional Strengthening</b>														690.7
<b>VII-1 SUSIMO Building Construction</b>														24.2
a) SUSIMO DENR	nos.	0.2	10.8	5.4										16.2
b) SUSIMO NCIP	nos.	0.2	5.4	2.6										8.0
<b>VII-2 Additional Manpower Input for PMOs</b>														0.0
a) PMO DENR														0.0
Project Manager (1)	persons	0.0	0.0											0.0
Technical staff (3)	persons	0.0	0.0											0.0
Administrative staff (1)	persons	0.0	0.0											0.0
Driver and Utility (1)	persons	0.0	0.0											0.0
b) PMO NCIP														0.0
Project Manager (1)	persons	0.0	0.0											0.0
Technical staff (3)	persons	0.0	0.0											0.0
Administrative staff (1)	persons	0.0	0.0											0.0
Driver and Utility (1)	persons	0.0	0.0											0.0
<b>VII-3 Additional Manpower Input for SUSIMOs</b>														0.0
a) SUSIMO DENR														0.0
Office Manager (1)	persons	0.0	0.0	0.0										0.0
Unit Head (3)	persons	0.0	0.0	0.0										0.0
Technical staff (5)	persons	0.0	0.0	0.0										0.0
Clerk (1)	persons	0.0	0.0	0.0										0.0
Driver (1)	persons	0.0	0.0	0.0										0.0
b) SUSIMO NCIP														0.0
Office Manager (1)	persons	0.0	0.0	0.0										0.0
Unit Head (3)	persons	0.0	0.0	0.0										0.0
Technical staff (5)	persons	0.0	0.0	0.0										0.0
Clerk (1)	persons	0.0	0.0	0.0										0.0
Driver (1)	persons	0.0	0.0	0.0										0.0

表 9.5.4 M/P年次別事業費積算 (3/4)

		(unit: million Pesos)													
Items		unit	2,004	2,005	2,006	2,007	2,008	2,009	2,010	2,011	2,012	2,013	2,014	2,015	Total
<b>VII-4 Additional Manpower Input for Regular Organization</b>															
a) PENRO/CENRO															
	Forester I (1)_FPU	persons	0.0	0.0											0.0
	Forester II (1)_FPU	persons	0.0	0.0											0.0
	Forest Ranger_FPU	persons	0.0	0.0											0.0
	Forest Guard_FPU	persons	0.0	0.0											0.0
	Forester I (1)_WMU	persons	0.0	0.0											0.0
	Forester II (1)_WMU	persons	0.0	0.0											0.0
	Forester I (2)_PA&WU	persons	0.0	0.0											0.0
	Forester II (2)_PA&WU	persons	0.0	0.0											0.0
	PA Guard_PA&WU	persons	0.0	0.0											0.0
b) ENROs															
	Forester I (1)_CBFMU	persons	0.0	0.0				0.0							0.0
	Forester I (1)_WMU	persons	0.0	0.0				0.0							0.0
<b>VII-5 Vehicle</b>															
a) For DENR/NCIP															
	Pick-up	nos.	1	4.2					4.2						8.4
b) For PMOs															
	Pick-up	nos.	1.1	8.4					8.4						16.8
c) For SUSIMOs DENR															
	Pick-up	nos.	1.1	85.1					85.1						170.1
	Motorcycle	nos.	0.1	14.6					14.6						29.2
d) For SUSIMOs NCIP															
	Pick-up	nos.	1.1	42.0					42.0						84.0
	Motorcycle	nos.	0.1	7.3					7.3						14.6
<b>VII-6 Equipment</b>															
a) For DENR/NCIP															
	Computer set	nos.	0.09	0.6					0.6						1.2
	Laser printer	nos.	0.04	0.3					0.3						0.6
	Photo copier	nos.	0.35	0.7					0.7						1.4
	Others	set	1.5	3.1					3.1						6.1
b) For 4 PMOs DENR and 4 PMOs NCIP															
	Computer set	nos.	0.09	2.7					2.7						5.4
	Laser printer	nos.	0.04	1.0					1.0						1.9
	Photo copier	nos.	0.35	2.8					2.8						5.6
	GPS	nos.	0.02	0.2					0.2						0.3
	Others	set.	0.5	4.0					4.0						8.1

表 9.5.4 M/P年次別事業費積算 (4/4)

Items	unit	Unit Price	(unit: million Pesos)												Total
			2,004	2,005	2,006	2,007	2,008	2,009	2,010	2,011	2,012	2,013	2,014	2,015	
<b>c) For SUSIMOs DENR</b>															
Computer set	nos.	0.09	6.9							6.9					13.8
Laser printer	nos.	0.04	3.2							3.2					6.5
Surveying equipment	nos.	0.11	8.9							8.9					17.8
GPS	nos.	0.02	1.6							1.6					3.2
Others	nos.	0.2	19.8							19.8					39.7
<b>d) For SUSIMOs NCIP</b>															
Computer set	nos.	0.09	3.4							3.4					6.8
Laser printer	nos.	0.04	1.6							1.6					3.2
Surveying equipment	nos.	0.11	4.4							4.4					8.8
GPS	nos.	0.02	0.8							0.8					1.6
Others	nos.	0.2	9.8							9.8					19.6
<b>VII-7 Capacity building</b>															
a) Informal training (short training)	times	0.5	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
b) Formal training (MS scholarship)	person	0.7	12.9	12.9	12.9	12.9	12.9	12.9	12.9	8.6	4.3	4.3	2.1	2.1	77.3
c) Field visit (ASEAN)	person	1.0	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	63.4
VII-8 String tech. acq'n and transfer	nos.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	12.2
VIII Initiative for WM councils establishment	LS	0.20		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.8
IX. Initiative for Cost Sharing Mechanism	LS	0.16		0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	1.3
X. TA Consultant (8% of I-IX)			23.0	13.6	12.2	62.7	70.5	71.7	92.7	69.4	68.5	68.8	30.1	7.7	591.1
XI SUB-TOTAL			310.0	183.3	164.6	846.9	952.2	968.0	1,252.4	937.3	925.5	929.5	406.0	103.8	7,979.8
XII Contingency (10% of XI)			31.0	18.3	16.5	84.7	95.2	96.8	125.2	93.7	92.6	93.0	40.6	10.4	798.0
XIII Administrative Cost (6% of XI)			18.6	11.0	9.9	50.8	57.1	58.1	75.1	56.2	55.5	55.8	24.4	6.2	478.8
<b>TOTAL (XI-XIII)</b>			<b>360</b>	<b>213</b>	<b>191</b>	<b>982</b>	<b>1,105</b>	<b>1,123</b>	<b>1,453</b>	<b>1,087</b>	<b>1,074</b>	<b>1,078</b>	<b>471</b>	<b>120</b>	<b>9,257</b>

表 10.3.1 フィリピン国環境関連法規リスト (1/5)

<p><b>Framework Laws</b></p> <ul style="list-style-type: none"> <li>• Constitution of the Republic of the Philippines - various provisions</li> <li>• PD 1151, Philippine Environmental Policy (6 June 1977)</li> <li>• PD 1152, Philippine Environmental Code - Natural Resource Management and Conservation (6 June 1977)</li> <li>• PD 1067, Water Code of the Philippines</li> <li>• Commonwealth Act No. 141, The Public Land Act (An Act to Amend and Compile the Laws relative to Lands of the Public Domain)</li> <li>• Executive Order No. 192, the Reorganization Act of the Department of Environment and Natural Resources (1987)</li> <li>• RA 6657, The Comprehensive Agrarian Reform Law of 1988 (10 June 1988)</li> <li>• EO 15/1992, Creating the Philippine Council for Sustainable Development (PCSD)</li> <li>• DAO 30/1992, Providing Guidelines for the Transfer and Implementation of DENR Functions to the Local Government Units</li> <li>• DAO 36/1992, Assignment and Supervision of the DENR-Non Governmental/People's Organisation (NG/PO) Desk</li> <li>• DAO 32/1994, Creation of an Office to Coordinate DENR Commitments to Inter-Agency Committees, Commissions, Task Forces and Special Projects</li> <li>• DAO 35/1994, Guidelines Governing the Implementation and Monitoring of the DENR National Crime Reporting System</li> <li>• EO 291, Creating Environmental Units in National Government Agencies (1996)</li> </ul>
<p><b>Environmental Impact Assessment (EIA) Legislation</b></p> <ul style="list-style-type: none"> <li>• PD 1586, Establishing an Environmental Impact Statement System, Including Other Environmental Management Related Research and for Other Purposes (11 June 1978)</li> <li>• Proclamation 2146, Proclaiming Certain Areas and Types of Projects as Environmentally Critical and Within the Scope of the</li> <li>• Environmental Impact Statement System Established under PD 1586</li> <li>• DENR Office Circular No. 3, Series of 1983, Technical Definitions and Scope of the Environmentally Critical Projects and Areas Enumerated in Proclamation 2146</li> <li>• EO 291, Improving the Environmental Impact Statement (EIS) System (12 January 1996)</li> <li>• DAO 37/1996, Revising DAO 21/1992 to Further Strengthen the Implementation of the Environmental Impact Statement (EIS) System</li> <li>• EO 342, Declaring Golf Courses as Environmentally Critical Projects and Creating the Golf Course Committee for Environmental Protection Programs (1996)</li> <li>• Golf Course Committee Resolution 1 of 1997, Rules and Standards in Reviewing Proposed Golf Course Projects</li> </ul>
<p><b>Pollution Control and Hazardous Substances</b></p> <ul style="list-style-type: none"> <li>• PD 984, National Pollution Control Decree, Providing for the Revision of RA 3931 Commonly Known as the Pollution Control Law and for Other Purposes</li> <li>• EO 374, Creating the Presidential Task Force on Water Resource Development and Management (to provide a harmonious and coordinated approach to water resources management)</li> <li>• DAO 14/1993, Revising Chapter II, Sections 57-66 of the 1978 Implementing Rules and Regulations for PD 984 (revision of air quality standards)</li> <li>• DAO 14A/1993, Amending DAO 14/1993 and Clarifying its Scope and Coverage</li> <li>• PD 1181, Providing for the Prevention, Control and Abatement of Air Pollution from Motor Vehicles and for Other Purposes (Anti Smoke-Belching Law of 1977)</li> <li>• DAO 12/1996, Prescribing Organisational and Management Arrangement of the Pasig River Rehabilitation Program</li> <li>• Laguna Lake Development Authority Resolution No. 33 of 1996, Prescribing Use of Environmental User Fees for Facilities under the Jurisdiction of the Laguna Lake Development Authority</li> <li>• Resolution No. 1-C of 1997 of the Pollution Adjudication Board (PAB), revising Procedural Rules of the PAB in Pollution Cases</li> <li>• DAO 5/1997, Procedures in the Retention of Areas within Certain Distances along the Banks of Rivers, Streams and Shores of Seas, Lakes and Oceans for Environmental Protection</li> </ul>

表 10.3.1 フィリピン国環境関連法規リスト (2/5)

<ul style="list-style-type: none"> <li>• RA 6969, Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990</li> <li>• DAO 29/1992, Implementing Rules and Regulations of RA 6969</li> <li>• DAO 28/1994, Interim Guidelines for the Importation of Recyclable Materials Containing Hazardous Substances</li> <li>• DAO 38/1997, Chemical Control Order for Mercury and Mercury Compounds</li> <li>• DAO 39/1997, Chemical Control Order for Cyanide and Cyanide Compounds</li> </ul>
<p><b><u>Protected Areas and Wildlife</u></b></p> <ul style="list-style-type: none"> <li>• RA 7586, National Integrated Protected Areas System Act of 1992 (NIPAS)</li> <li>• DENR Memorandum Circular No. 20/1990, Guidelines on the Restoration of Open and Denuded Areas within National Parks and Other Protected Areas for the Enhancement of Biological Diversity</li> <li>• DAO 13/1992, Regulations Governing the Establishment of Buffer Zones within Forest Lands</li> <li>• DAO 25/1992, National Integrated Protected Areas System (NIPAS) Implementing Rules and Regulations (29 June 1992)</li> <li>• DENR Memorandum Circular No. 45/1992, Clarifications on Some Provisions of RA 7586, DAO 25/1992 and Other Related Guidelines</li> <li>• DAO 13/1993, Guidelines in the Conduct of Census and Registration of Protected Area Occupants (12 March 1993)</li> <li>• DENR Memorandum Circular No. 16/1993, Guidelines on the Establishment and Management of Buffer Zones for Protected Areas (13 May 1993)</li> <li>• DENR Memorandum Circular No. 22/1994, Delegation of Authority Regarding the Implementation of Foreign Assisted Integrated Protected Area Projects (IPAS)</li> <li>• DAO 3/1995, Procedural and/or Documentary Requirements, Guidelines and/or Criteria to be Observed and/or Followed in the Selection of Local Government Units, Non-Governmental Organizations and People's Organizations to the Protected Areas Management Board (PAMB)</li> <li>• DAO 5/1995, Guidelines for the Selection, Awards, Monitoring and Evaluation of Host Non-Government Organizations in the Conservation of Protected Area Projects</li> <li>• DENR Memorandum Order No. 8/1995, Clarifications on the Provisions of the NIPAS Law regarding the Modification of Boundary of the Protected Area and Its Buffer Zone</li> <li>• DAO 31/1996, Amendment of Section 61 of DAO 25/1992 Re: Implementing Rules and Regulations of RA 7586 (National Integrated Protected Areas Act of 1992)</li> <li>• DAO 142/1989, Guidelines on the Disposition of Confiscated Wildlife Species</li> <li>• DAO 36/1991, Guidelines Governing the Confiscation, Seizure and Disposition of Wild Flora and Fauna Illegally Collected, Gathered, Acquired, Transported and Imported including Paraphernalia</li> </ul>
<p><b><u>Forestry</u></b></p> <ul style="list-style-type: none"> <li>• PD 705, Revised Forestry Code of the Philippines (Revising PD 389) (19 May 1975)</li> <li>• DAO 4/1989, Revising Regulations Governing Rattan Resource (10 January 1989)</li> <li>• DAO 4A/1989, Special Provisions for the Processing of Rattan Applications Within Areas Reserved/Occupied by Cultural Communities (12 January 1989)</li> <li>• DAO 59/1990, Providing Guidelines on the Confiscation, Forfeiture and Disposition of Conveyances Used in the Commission of Offences Penalised under PD 705, as amended by EO 277, and Other Forestry Laws, Rules and Regulations (22 June 1990), amended subsequently by DAO 54/1993 (16 September 1993)</li> <li>• DAO 4/1991, Revising Regulations Governing the Integrated Social Forestry Program (27 February 1991)</li> <li>• DAO 24/1991, Shift in Logging from the Old Growth (Virgin) Forests to the Second Growth (Residual) Forests (3 May 1991)</li> <li>• DENR Memorandum Circular No. 17/1992, Delineation of Functions and Implementation of the Integrated Social Forestry Program after the Devolution of Functions to the Local Government Units (15 October 1992)</li> <li>• DAO 23/1992, Institutionalizing the Master Plan for Forestry Development within the DENR and Defining Functions of Offices for the Purpose</li> <li>• DAO 27/1992, Management of Mossy Forests</li> </ul>



表 10.3.1 フィリピン国環境関連法規リスト (3/5)

<ul style="list-style-type: none"> <li>• DAO 35/1992, Prescribing Guidelines for Community Reforestation Contract under the Low Income Upland Communities Project (LIUCP)</li> <li>• DAO 22/1993, Revised Guidelines for Community Forestry Program (27 April 1993)</li> <li>• DAO 23/1993, Forest Land Management Program (27 April 1993)</li> <li>• DENR Memorandum Circular No. 1/1994, Guidelines for the Prosecution of Illegal Logging and Related Cases</li> <li>• DAO 7/1994, Revised Guidelines Governing the Issuance of Certificates of Origin for Logs, Timber, Lumber and Non-Timber Forest Products (17 February 1994)</li> <li>• DAO 30/1994, Implementing Guidelines for Non-Government Organization Assisted Community-Based Mangrove Forest Management (NGO-Assisted CBMFM) for the DENR (2 September 1994)</li> <li>• DENR Memorandum Circular No. 34/1994, General Outline for the Formulation of Initial Protected Area Plan</li> <li>• DAO 15/1995, Revised General Guidelines in the Implementation of the Sub-Classification of Forestlands and Other Inalienable Lands of the Public Domain (10 May 1995)</li> <li>• DAO 17/1995, Institutionalization of the Multi-Sectoral Forest Protection Communities Within the DENR System (20 May 1995)</li> <li>• DENR Memorandum Order No. 4/1995, Creation and Constitution of the National Federation of Multi-Sectoral Forest Protection Communities (NFMFPC) (2 February 1995)</li> <li>• EO 263, Adopting Community-Based Forest Management as the National Strategy to Ensure the Sustainable Development of the Country's Forestlands Resources and Providing Mechanisms for its Implementation (19 July 1995)</li> <li>• DAO 24/1996, Rules and Regulations Governing the Socialized Industrial Forest Management Program (23 August 1996)</li> <li>• DAO 29/1996, Rules and Regulations for the Implementation of Executive Order 263, Otherwise Known as the Community-Based Forest Management Strategy (CBFMS) (10 October 1996)</li> <li>• DAO 4/1997, Rules and Regulations Governing the Industrial Forest Management Program</li> <li>• DAO 1/1998, Forest Resource Securitization Strategy</li> </ul>
<p><b><u>Prospecting of Biological and Genetic Resources</u></b></p> <ul style="list-style-type: none"> <li>• EO 247, Prescribing Guidelines and Establishing a Regulatory Framework for the Prospecting of Biological and Genetic Resources, Their By-Products and Derivatives, for Scientific and Commercial Purposes, and for Other Purposes</li> <li>• DAO 20/1996, Implementing Rules and Regulations on the Prospecting of Biological and Genetic Resources</li> </ul>
<p><b><u>Marine Environment</u></b></p> <ul style="list-style-type: none"> <li>• PD 979, Marine Pollution Decree, Amending PD 600 Providing for Prevention and Control of Marine Pollution</li> <li>• National Marine Pollution Control Contingency Plan (30 June 1975)</li> <li>• PD 601, Empowering Coast Guards as Enforcement Agents of the Bureau of Fisheries and Aquatic Resources and the National</li> <li>• Pollution Control Commission (9 December 1974)</li> <li>• PD 602, Establishing Oil Pollution Operations Centre in the Philippine Coast Guard Headquarters (9 December 1974)</li> <li>• PD 1219, Providing for the Exploration, Exploitation, Utilization and Conservation of Coral Resources (Coral Resources Development and Conservation Decree) (14 October 1977), amended by PD 1698 (22 May 1990)</li> <li>• PD 579, on Dumping of Wastes</li> <li>• EO 396, Providing the Institutional Framework for the Administration of the Standards of Training, Certification and Watchkeeping for Seafarers in the Philippines (30 January 1997)</li> <li>• Headquarters of the Philippine Coast Guard (HPCG) Memorandum Circular No. 2/1977, Containing Rules and Regulations of Marine Pollution Prevention and Control (20 May 1977)</li> <li>• HPCG Memorandum Circular No. 2/1980, Ensuring that Equipment in Ships, Oil Refineries and Other Installations meet the Required Standards (7 November 1980)</li> </ul>

表 10.3.1 フィリピン国環境関連法規リスト (4/5)

<ul style="list-style-type: none"> <li>• HPCG Memorandum Circular No. 1/1981, Rules and Regulations on Monitoring Procedures for SOLAS and Maritime</li> <li>• Environmental Protection Requirements for Domestic Vessels</li> <li>• HPCG Memorandum Circular No. 5/1983, Implementing MARPOL 73/78 with respect to Vessels of Philippine Registry (12 August 1983)</li> <li>• HPCG Memorandum Circular No. 1/1985, Rules for Tank Cleaning Operations</li> <li>• HPCG Memorandum Circular No. 1/1991, Prevention, Containment, Abatement and Control of Marine Pollution (8 January 1991)</li> <li>• HPCG Memorandum Circular No. 2/1991, Dumping and Discharge of Wastes and Other Harmful Matter at Sea (21 January 1991)</li> <li>• HPCG Memorandum Circular No. 6/1991, Rules and Regulations for Tank Cleaning Operations of Vessels and Oil Tankers</li> <li>• HPCG Memorandum Circular No. 8/1991, Rules Providing for Marine Pollution Inspection and Apprehension Report (20 May 1991)</li> <li>• HPCG Memorandum Circular No. 2/1992, Port State Control</li> <li>• HPCG Memorandum Circular No. 4/1993, Shipboard Oil Pollution Emergency Plan for Philippine-Registered Vehicles</li> <li>• HPCG Memorandum Circular No. 1/1994, Prevention of Pollution by Sewage from Ships and Issuance of International Sewage Pollution Prevention (ISPP) Certificate for Philippine-Registered Vessels</li> <li>• HPCG Memorandum Circular No. 2/1994, Prevention of Pollution by Garbage from Ships</li> <li>• HPCG Memorandum Circular No. 3/1994, Prevention, Containment, Abatement and Control of Marine Pollution (16 August 1994)</li> <li>• Philippine Port Authority Memorandum Circular No. 4/1985, Policy on the Prevention and Control of Marine Pollution</li> <li>• Philippine Port Authority Memorandum Circular No. 7/1995, Anti-Pollution Measures within the Port Zone</li> <li>• Philippine Port Authority Administrative Order 16/1995, Rules and Regulations on the Prevention/Control of Oil, Garbage and Sewage Wastes Through the Use of Reception Facilities/Collection of Vessels Refuse</li> <li>• Standards on Training, Certification and Watchkeeping (STCW) Executive Committee Resolution No. 1/1997, Rules and Regulations for the Implementation of EO 396 (30 April 1997)</li> </ul>
<p><b>Fisheries</b></p> <ul style="list-style-type: none"> <li>• RA 8550, The Philippine Fisheries Code of 1998</li> <li>• DAO 3/1998, Implementing Rules and Regulations Pursuant to RA 8550</li> <li>• RA 8435, Agriculture and Fisheries Modernization Act of 1997</li> </ul>
<p><b>Ancestral Domain and Indigenous People's Rights</b></p> <ul style="list-style-type: none"> <li>• DENR Circular No. 3/1990, Rules on the Acceptance, Identification, Evaluation and Delineation of Ancestral Land Claims by the Special Task Force Created by Virtue of DENR Special Order Nos. 31 &amp; 31A, Series of 1990 (27 April 1990)</li> <li>• DAO 61/1991, Rules on the Acceptance, Identification, Evaluation and Delineation of Ancestral Land Claims in the Province of Palawan (7 November 1991)</li> <li>• DAO 2/1993, Rules and Regulations for the Identification, Delineation And Recognition of Ancestral Land and Domain Claims (15 January 1993)</li> <li>• DAO 34/1996, Guidelines for Management of Certified Ancestral Domain Claims (12 November 1996)</li> <li>• DENR Memorandum Circular No. 26/1994, Flagship Program for the Indigenous Cultural Communities under the Social Reform Agenda</li> <li>• RA 6734, Providing for an Organic Act for the Autonomous Region in Muslim Mindanao</li> <li>• RA 8371, Indigenous Peoples Right Act of 1997 (29 October 1997)</li> </ul>

表 10.3.1 フィリピン国環境関連法規リスト (5/5)

<p><b><u>Mining</u></b></p> <ul style="list-style-type: none"> <li>• PD 512, Declaring Prospecting and Other Mining Operations of Public Use and Benefit and Establishing the Basis and Prescribing the Rules and Procedures relating to Acquisition and Use of Surface Rights in Mineral Prospecting, Development and Exploitation, and Providing Protection and Compensation to Surface Owners (16 January 1981)</li> <li>• RA 7942, Philippine Mining Act of 1995 (3 March 1995)</li> <li>• DAO 40/1996, Revising the Implementing Rules and Regulations of the Mining Act of 1995 (20 December 1996)</li> <li>• Mines Adjudication Board Rules on Pleading, Practice and Procedure before the Panel of Arbitrators and the Mines Adjudication Board (12 August 1997)</li> <li>• RA 7076, People's Small-scale Mining Act of 1991 (27 June 1991)</li> <li>• DAO 34/1992, Rules and Regulations to Implement RA 7076 (6 August 1992)</li> </ul>
<p><b><u>Land Acquisition, Compensation, and Resettlement</u></b></p> <ul style="list-style-type: none"> <li>• Local Governmental Code (LGC), 1991</li> <li>• Administrative Order No.50</li> <li>• Republic Act No.8974</li> <li>• Republic Act No.7279 (Urban Development and Housing Act)</li> </ul>

表 10.4.1 M/P策定のための環境スクリーニングチェックリスト

Items for Assessment		Level of Impact						Comments
		Positive impact very likely	Positive impact possible	No impact likely	Negative impact possible	Negative impact very likely	No judgement possible at present	
I. Social Environment	1. Social Condition	1-1 Scheduled resettlement			X			
		1-2 Involuntary resettlement			X			
		1-3 Changes in life style			X			
		1-4 Conflict among residence					X	
		1-5 Impact on minorities/indigenous people	X					
		1-6 Alteration of right on land tenure		X				
		1-7 Change of life style		X				
	2. Pollution	2-1 Agro-chemicals					X	
		2-2 Toxic substance			X			
		2-3 Organic pollution			X			
		2-4 Anaerobic effects			X			
		2-5 Gas emissions			X			
	3. Soils	3-1 Soil erosion	X					
		3-2 Soil properties		X				
3-3 Saline groundwater				X				
3-4 Saline drainage				X				
II. Natural Environment	4. Sediments	4-1 Local erosion	X					
		4-2 Hinterland effect		X				
		4-3 River morphology			X			
		4-4 Channel regime			X			
		4-5 Sedimentation	X					Magat Reservoir
		4-6 Estuary erosion			X			
	5. Ecology	5-1 Project lands	X					
		5-2 Surrounding areas			X			
		5-3 Valleys & shores		X				
		5-4 Wetlands & plains			X			
		5-5 Aquatic species			X			
		5-6 Rare wildlife species			X			
		5-7 Wildlife habitat		X				
		5-8 Natural forest	X					
6. Socio-economic	6-1 Population change			X				
	6-2 Income & amenity	X						
	6-3 Human migration			X				
	6-4 Resettlement			X				
	6-5 Women's role			X				
	6-6 Minority groups		X					
	6-7 Sites of value			X				
	6-8 Regional effects		X					
	6-9 Recreation			X				
7. Health	7-1 Water & sanitation		X					
	7-2 Habitation			X				
	7-3 Health services			X				
	7-4 Nutrition		X					
	7-5 Relocation effect			X				
	7-6 Waterborne diseases			X				
	7-7 Vector-borne diseases			X				
	7-8 Disease control			X				
	7-9 Other hazards			X				
8. Land	8-1 Forest plantations	X						
	8-2 Upland farming	X						
	8-3 Rural communities		X					
	8-4 Mining and quarrying			X				
	8-5 Dam/reser. Potentials			X				