

參考資料

1. ワークショップの結果

目次

A. 別添資料.....	77
1. ワークショップ参加者リスト	77
2. 詳細な関係者分析結果.....	79
3. 問題分析系図.....	81
4. 目的分析系図.....	87
5. 成果群と活動オプション	92

図表

表 A-1 ミニ・ワークショップ（関係者分析）の参加者.....	77
表 A-2 ワークショップ（問題分析・目的分析）の参加者.....	78
表 A-3 森林周辺村落（詳細分析）.....	79
表 A-4 郡森林事務所（詳細分析）.....	79
表 A-5 郡議会（詳細分析）.....	80
表 A-6 木炭生産者（詳細分析）.....	80
表 A-7 目的系図から特定された成果群・活動オプション.....	92
図 A-1 中心問題の直接原因と結果.....	81
図 A-2 野火の原因.....	81
図 A-3 不適切な農業手法の原因.....	82
図 A-4 住民が森林管理に無関心である原因.....	83
図 A-5 植林が進んでいない原因.....	84
図 A-6 伐採業者による過剰伐採の原因.....	85
図 A-7 チェーンソーによる違法伐採の原因.....	85
図 A-8 薪・木炭生産目的の伐採の原因.....	86
図 A-9 中心目的と直接手段.....	87
図 A-10 野火を防止する手段.....	87
図 A-11 農業手法を改善する手段.....	88
図 A-12 森林周辺村落の参加を促進するための手段.....	89
図 A-13 植林を進めるための手段.....	90
図 A-14 薪・木炭生産のための伐採を削減するための手段.....	91

A. 別添資料

1. ワークショップ参加者リスト

表 A-1 ミニ・ワークショップ（関係者分析）の参加者

	Name of Participants	Position
1	Mr. M. Owusu Abebrese	Director of Operations, Forest Services Division (FSD)
2	Mr. F. K. Odoom	Director, Policy Planning Monitoring and Evaluation Department (PPMED), Ministry of Lands and Forestry (MLF)
3	Mr. F. S. Amoah	Manager, FSD
4	Mr. Michael Y. Pentsil	Project Officer, Forest Plantation Development Center (FPDC)
5	Ms. Adisa Lansah Yakubu	National Coordinator, Africa 2000 Network
6	Mr. Koji Terakawa	JICA Expert attached to FSD, Sunyani
Observers		
7	Mr. Kazuo Sudo	Leader, JICA Study Team
8	Mr. Hiroshi Masuko	Forest Conservation / Forest Policy, JICA Study Team
9	Ms. Satomi Tanaka	Planning Management, JICA Study Team

Moderator: Ms. Yukiko Yoshida, Planning Analysis / Organization and System, JICA Study Team.

表 A-2 ワークショップ（問題分析・目的分析）の参加者

	Name of Participants	Position
1	Mr. J. K. Tawiah	Chairman, Asuakwa Community
2	Mr. Yaw Annor	Chairman, Amangoase Community
3	Mr. Haruma Agyarko	Secretary, Mablam Community
4	Mr. Stephe Daskye	Chairman, Serwia Community
5	Mr. Nana Kusi Anthony	Chairman, Ayigbe Community
6	Mr. David Sarfo Kantanka	Taungya Farmer, Buoku (Chairman of Buoku Community)
7	Mr. Alex Amofah	Taungya Farmer, Konsua (Secretary of Konsua Community)
8	Mr. Yakubu Mohhamed	District Manager, FSD, Sunyani
9	Mr. Samuel Effah	Regional Plantations Manager, FSD, Brong Ahafo
10	Ms. Alice Okyere Dankwah	Range Supervisor, FSD, Sunyani
11	Mr. Johnson R. Zu	Deputy Superintendent, Police Service, Sunyani
12	Mr. J. K. Ahinsah	Regional Inspectorate Ghana National Fire Service – Fire
13	Mr. Kowusu - Acheaw	Deputy Regional Director, Dept. of Community Development
14	Ms. Lucy Adjai	District Director, Dept. of Community Development
15	Mr. M. I. Lartey	Secretary, Ministry of Food and Agriculture, Sunyani
Observers		
16	Mr. Christopher Nuoyel	JICA Ghana Office
17	Mr. Oheneba Agyeman	Director, Resource Management Support Center, Kumasi
18	Mr. Koji Terakawa	JICA Expert attached to FSD, Sunyani
19	Mr. Kazuo Sudo	Leader, JICA Study Team
20	Mr. Hiroshi Masuko	Forest Conservation / Forest Policy, JICA Study Team
21	Ms. Satomi Tanaka	Planning Management, JICA Study Team

Moderators: Ms. Yukiko Yoshida, Planning Analysis / Organization and System, JICA Study Team.

Ms. Adisa Lansah Yakubu, National Coordinator, Africa 2000 Network.

2. 詳細な関係者分析結果

表 A-3 森林周辺村落（詳細分析）

社会・文化的特徴	<ul style="list-style-type: none"> ・ アカン語を話す。 ・ 識字率 35%。 ・ 北部 3 州からの移住民が 46% を占める。 ・ 土地は家族所有と私有の形態あり。 ・ 母系相続制。 	<ul style="list-style-type: none"> ・ 小規模農業を営む。 ・ 自給自足農民である。 ・ 主要作物はトウモロコシ、キャッサバ、料理用バナナ、ココヤム。乾季には野菜も栽培。 ・ グラス・カッターを狩猟する。 ・ 日中の主な活動は農作業。 ・ 活気あるナイトライフ。
森林管理における役割	<ul style="list-style-type: none"> ・ タウンヤ農民として植林に参加する。 	<ul style="list-style-type: none"> ・ 野火の消火を行う。 ・ 違法行為を報告する。
長所	<ul style="list-style-type: none"> ・ 森を良く知っている。 ・ 文化的に、農業への意欲が高い。 	<ul style="list-style-type: none"> ・ 対象地域の土地保有権システムに詳しい。 ・ 伝統的慣行・制度を守る。
弱点	<ul style="list-style-type: none"> ・ 財政的資源がない。 ・ 農業・林業の技術的知識がない。 	<ul style="list-style-type: none"> ・ 農地が肥沃でない（過剰利用のため）。
伸ばし得る素質（可能性）	<ul style="list-style-type: none"> ・ 勤勉である。 ・ 森林保護区内のタウンヤシステムに参加する意志がある。 	<ul style="list-style-type: none"> ・ 代替生活手段の開拓に前向きである。
外的脅威	<ul style="list-style-type: none"> ・ 野火。 ・ 政府と農民の間に法的合意がない。 ・ 短期で収入が得られる機会を欲する。 	<ul style="list-style-type: none"> ・ FSD 普及員の態度（訓練されていない）。

出所：ミニ・ワークショップ（2003年3月11日）

表 A-4 郡森林事務所（詳細分析）

教育レベル/ 技術的能力	<p>スンヤニ郡森林事務所</p> <ul style="list-style-type: none"> ・ 所長：学位取得者。 ・ 副所長：ディプロマ保持者。 	<ul style="list-style-type: none"> ・ 技術者：林業大学修了証書保持者。
森林管理における役割	<ul style="list-style-type: none"> ・ 普及。 ・ 規制。 	<ul style="list-style-type: none"> ・ 森林経営（天然林・人工林）。
長所	<ul style="list-style-type: none"> ・ 基礎インフラ（事務所設備など）。 ・ 森林保護区境界の保全。 	<ul style="list-style-type: none"> ・ 法律の整備。
弱点	<ul style="list-style-type: none"> ・ 予算不足。 ・ 人員不足。 	<ul style="list-style-type: none"> ・ 機材不足。 ・ 官僚主義。
伸ばし得る素質（可能性）	<ul style="list-style-type: none"> ・ コミュニティーや他機関・組織との協力強化。 ・ 流域保全、Carbon Sequestration による財源創出。 	<ul style="list-style-type: none"> ・ 森林保護区に対する材積量（Stocking Volume）の賦課。
外的脅威	<ul style="list-style-type: none"> ・ 野火。 ・ 森林保護区への農地侵入。 ・ 貧困。 	<ul style="list-style-type: none"> ・ 不法伐採業者。 ・ 長引く乾季。 ・ 森林保護区内の土地利用紛争（道路建設用の砂利採掘）。

出所：ミニ・ワークショップ（2003年3月11日）

表 A-5 郡議会（詳細分析）

森林管理における役割	<ul style="list-style-type: none"> 郡の総合開発計画策定。 	<ul style="list-style-type: none"> 森林関連分野の収入・支出のモニタリング。
長所	<ul style="list-style-type: none"> 基礎インフラ。 財政支援の可能性。 	<ul style="list-style-type: none"> 条例の制定。
弱点	<ul style="list-style-type: none"> 地方分権化の進行に、実質的な権限移譲が伴っていない。 財源動員力が低い。 	<ul style="list-style-type: none"> 官僚主義。 ロイヤルティーを、森林周辺地域の開発に有効活用していない。
伸ばし得る素質（可能性）	<ul style="list-style-type: none"> 森林開発・管理計画の策定に際しFSDと協力する。 	<ul style="list-style-type: none"> 森林からの収益（の利用）を改善する。
外的脅威	<ul style="list-style-type: none"> コミュニティからの協力が得られない。 	<ul style="list-style-type: none"> 財源確保が環境保全より重要視されている。

出所：ミニ・ワークショップ（2003年3月11日）

表 A-6 木炭生産者（詳細分析）

社会経済情報	<ul style="list-style-type: none"> 主として移住農民。 農閑期の所得創出活動。 女性：男性＝6：4（要調査） 転々と移動している。 	<ul style="list-style-type: none"> 自給自足農民よりも経済状態が良い。 森林周辺村落の中でも識字率が低い。
森林管理における役割	<ul style="list-style-type: none"> 搾取者。 	
長所	<ul style="list-style-type: none"> 団結力がある。 	
弱点	<ul style="list-style-type: none"> 識字率が低い。 	
伸ばし得る素質（可能性）	<ul style="list-style-type: none"> 郡議会は木炭生産に課税する可能性有り。 	
外的脅威	<ul style="list-style-type: none"> 条例により木炭生産が禁止されるリスク。 	

出所：ミニ・ワークショップ（2003年3月11日）

3. 問題分析系図

図 A - 1 に中心問題の直接原因と結果を示し、図 A - 2 以降に直接原因から下方に発展させた系図を示した。図 A - 1 との対応がつくよう、直接原因には 1 から 7 まで番号を付けた。

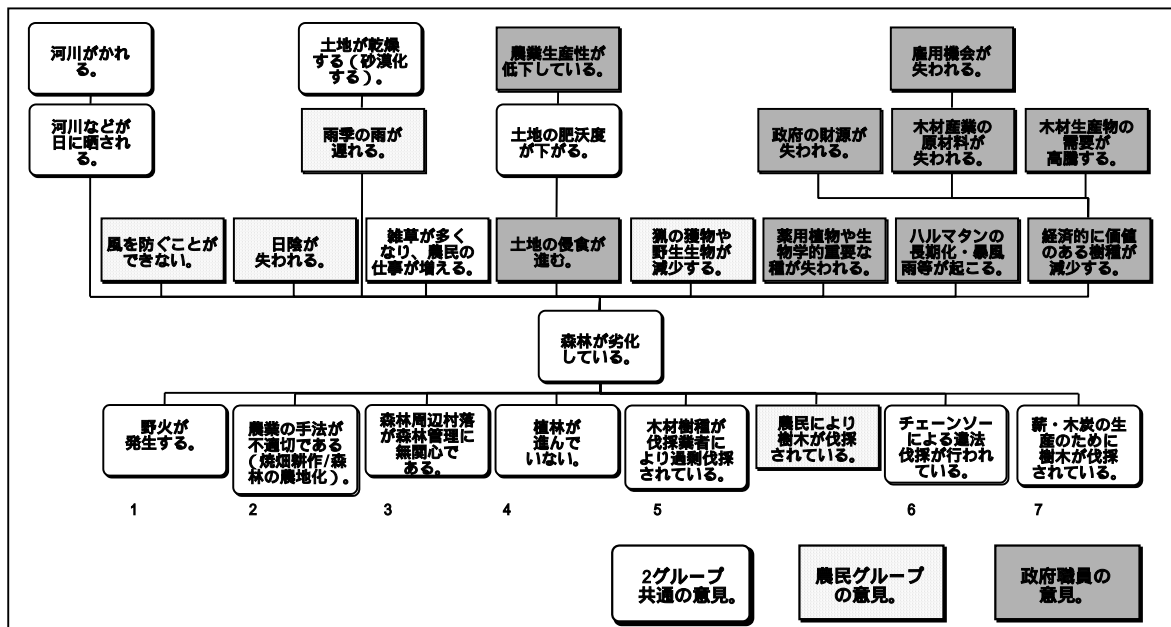


図 A-1 中心問題の直接原因と結果

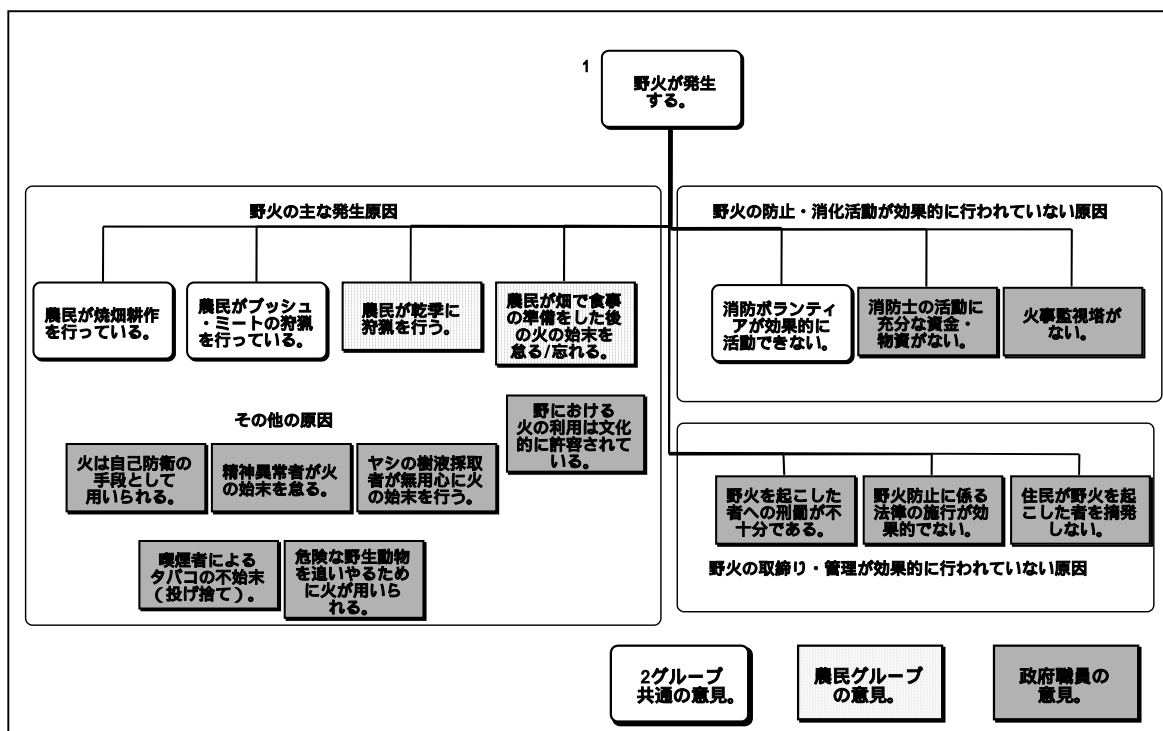


図 A-2 野火の原因

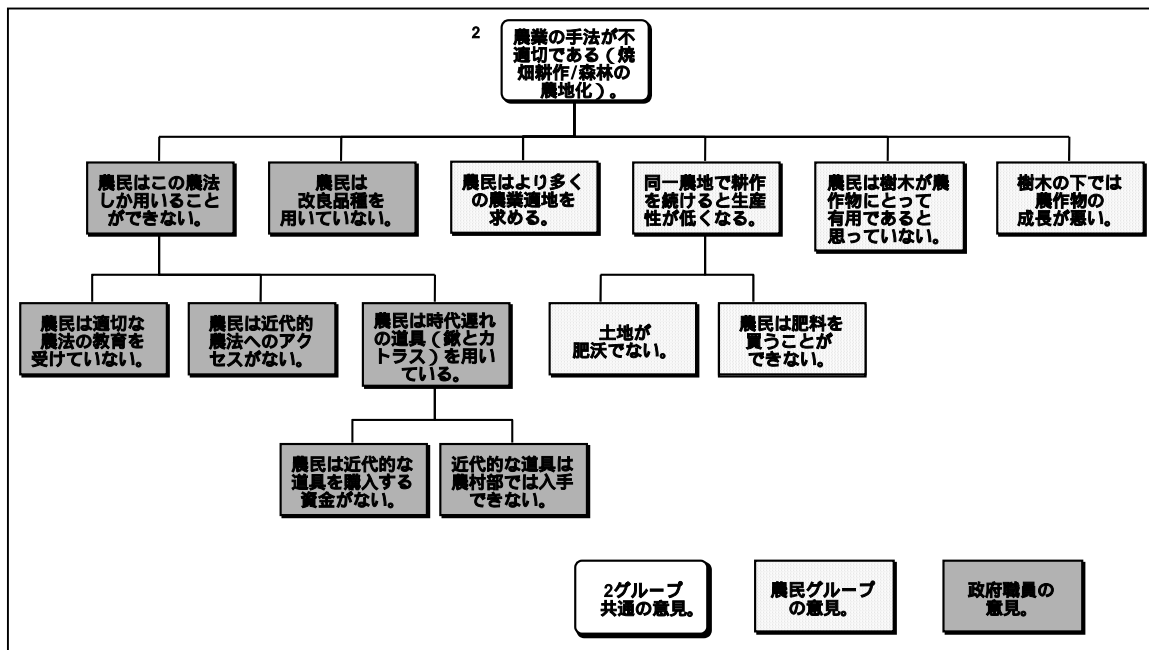


図 A-3 不適切な農業手法の原因

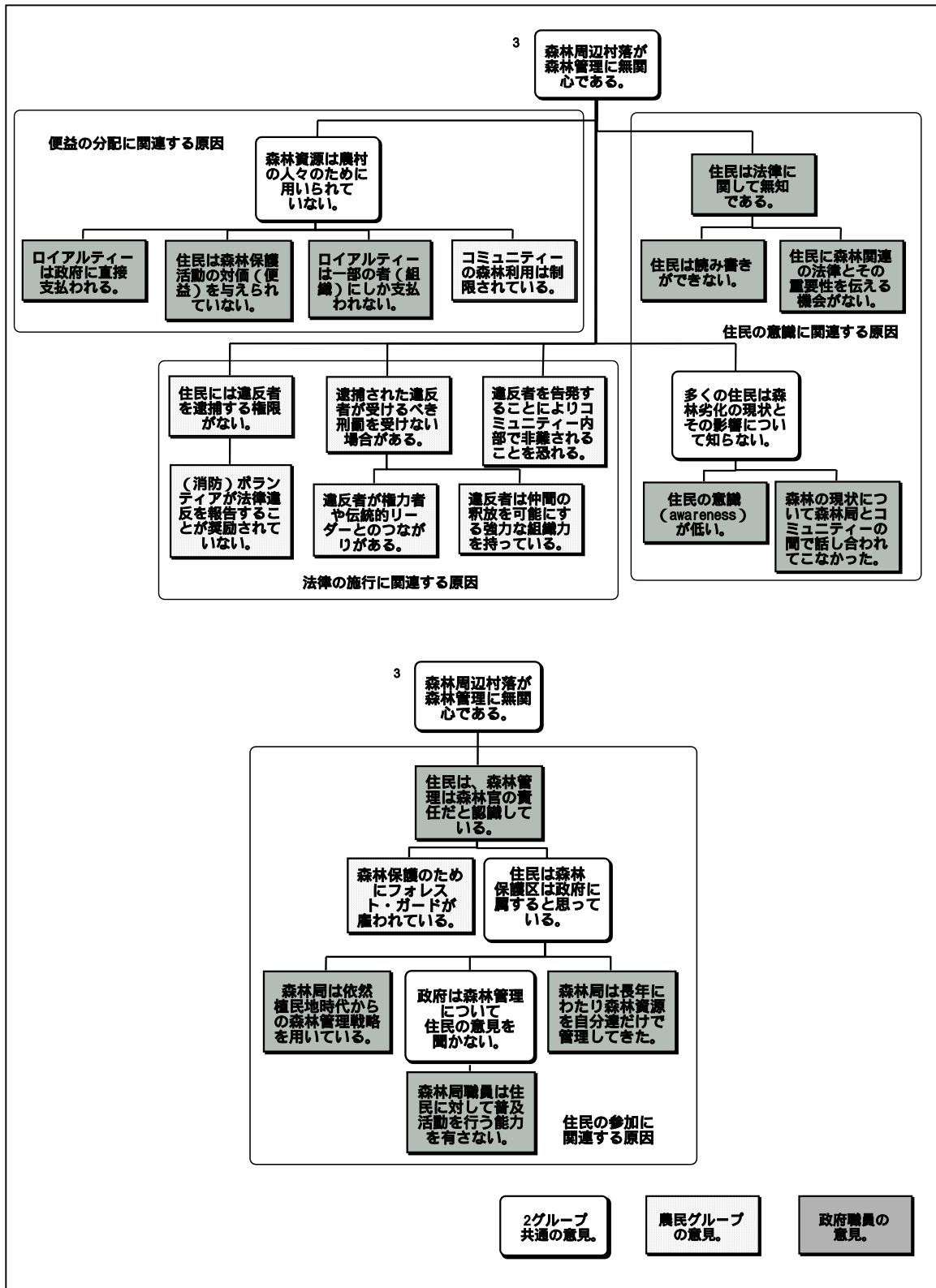


図 A-4 住民が森林管理に無関心である原因

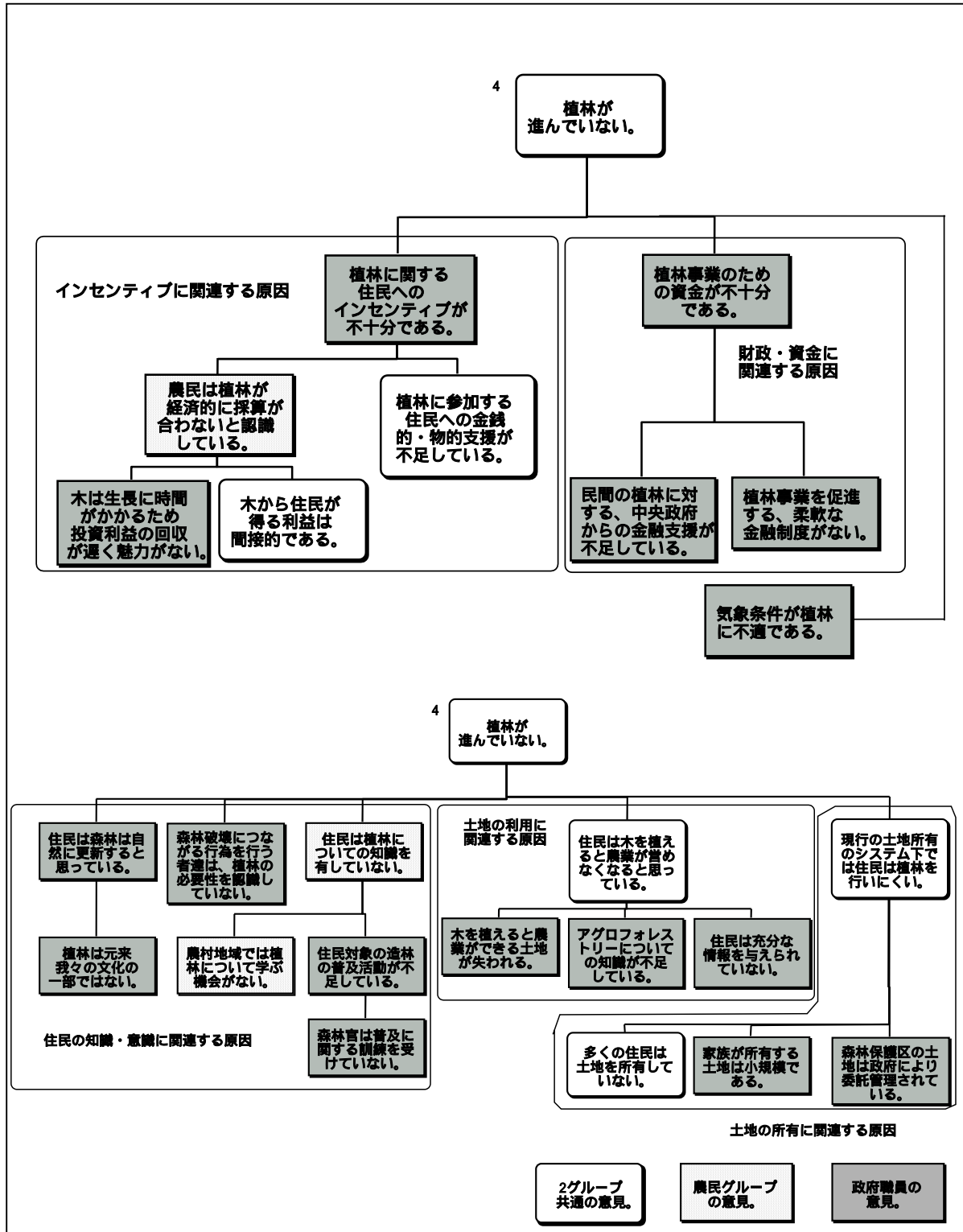


図 A-5 植林が進んでいない原因

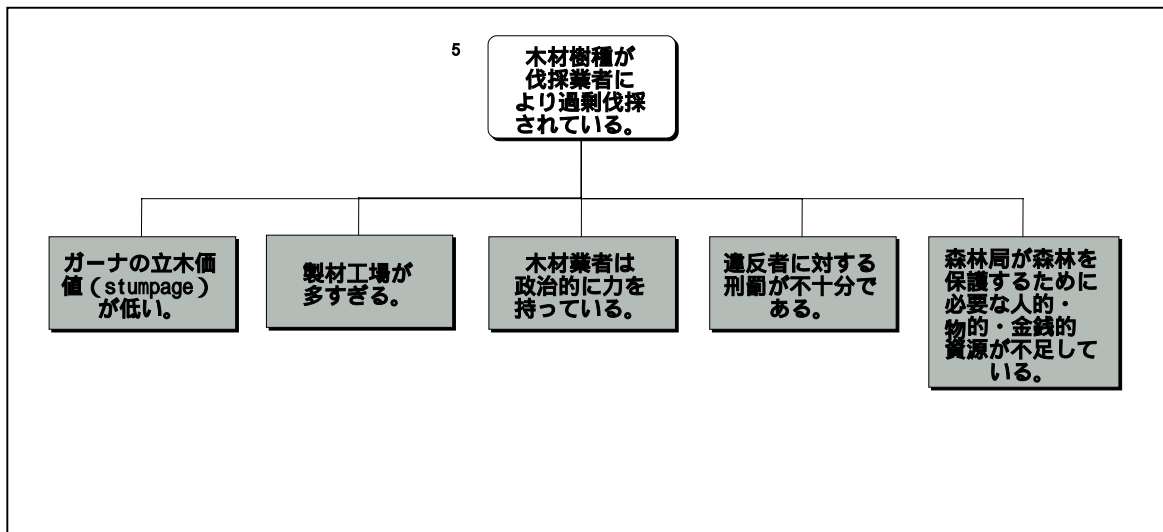


図 A-6 伐採業者による過剰伐採の原因

注：この分析は政府グループのみが実施した。

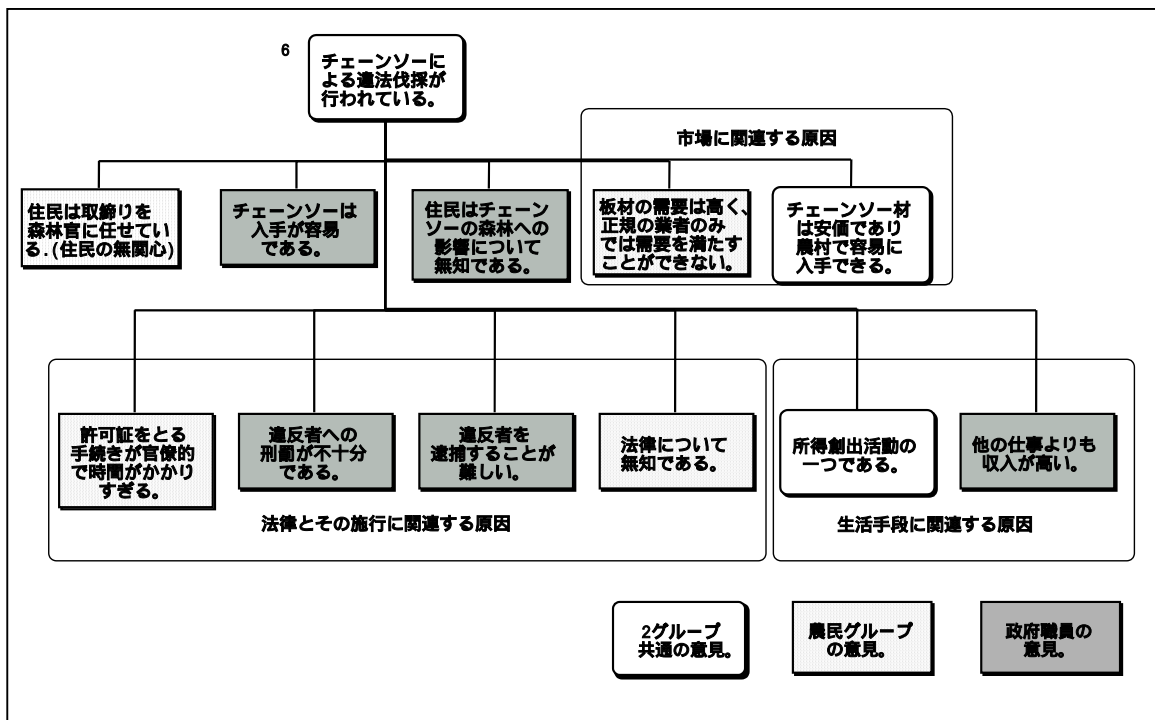


図 A-7 チェーンソーによる違法伐採の原因

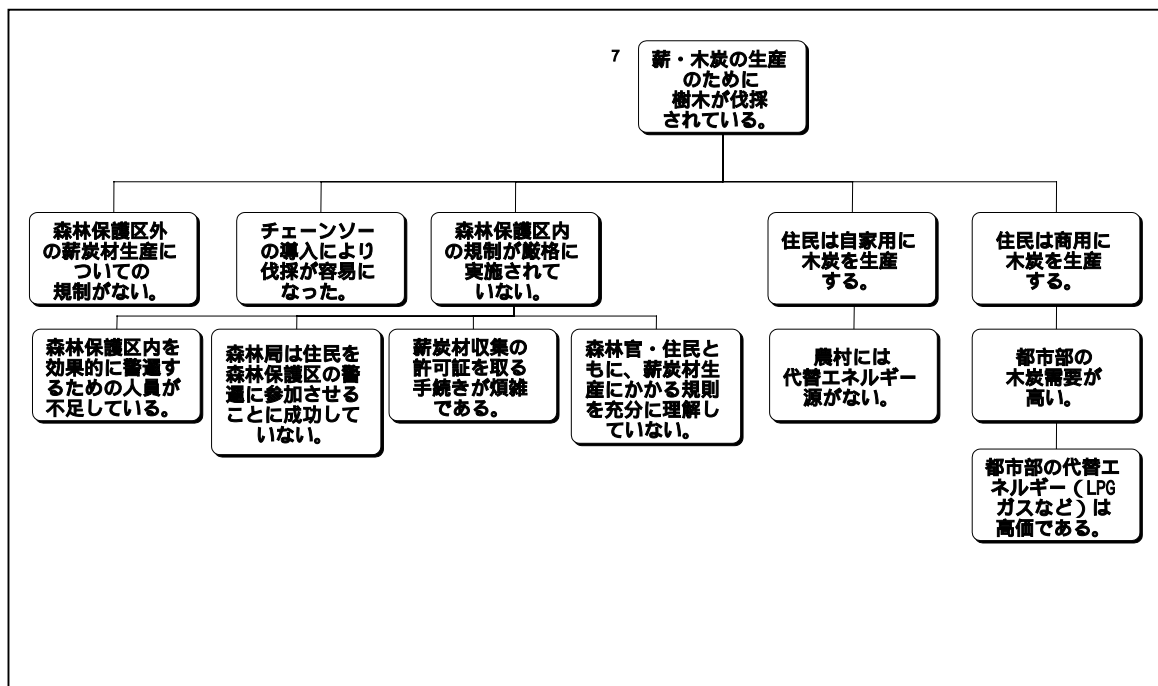


図 A-8 薪・木炭生産目的の伐採の原因

注：この分析は農民グループ・政府グループが共同で実施した。

4. 目的分析系図

図 A - 9 に中心目的と直接手段を示し、図 A - 10 以降に直接手段から下方に発展させた系図を示した。問題分析系図に倣い、1 から 7 まで番号を付けた。

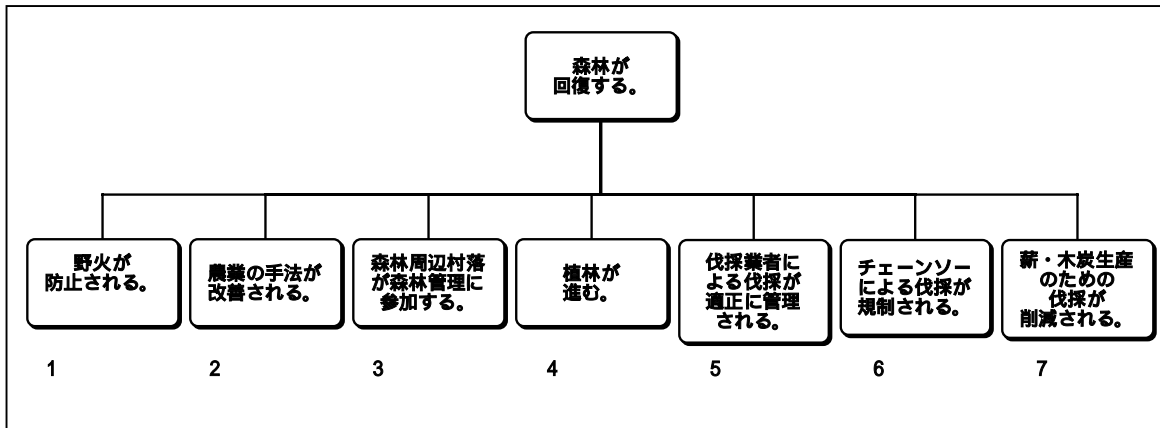


図 A-9 中心目的と直接手段

注：この分析は農民グループ・政府グループが共同で実施した。

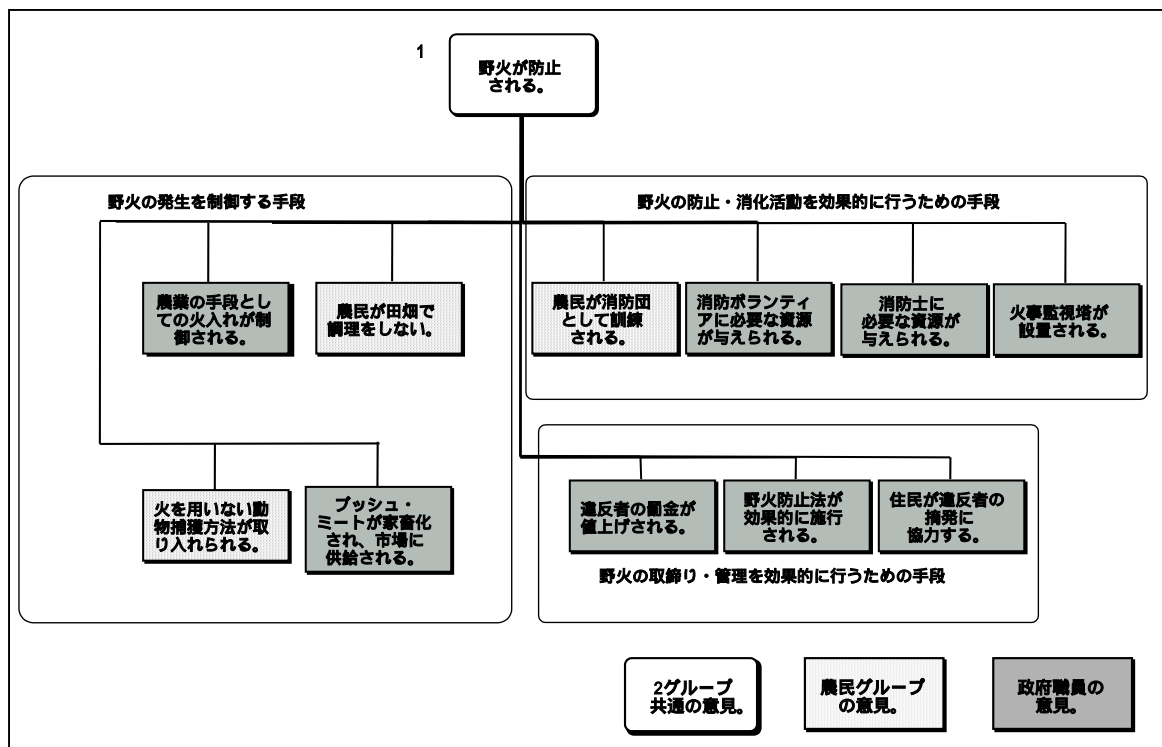


図 A-10 野火を防止する手段

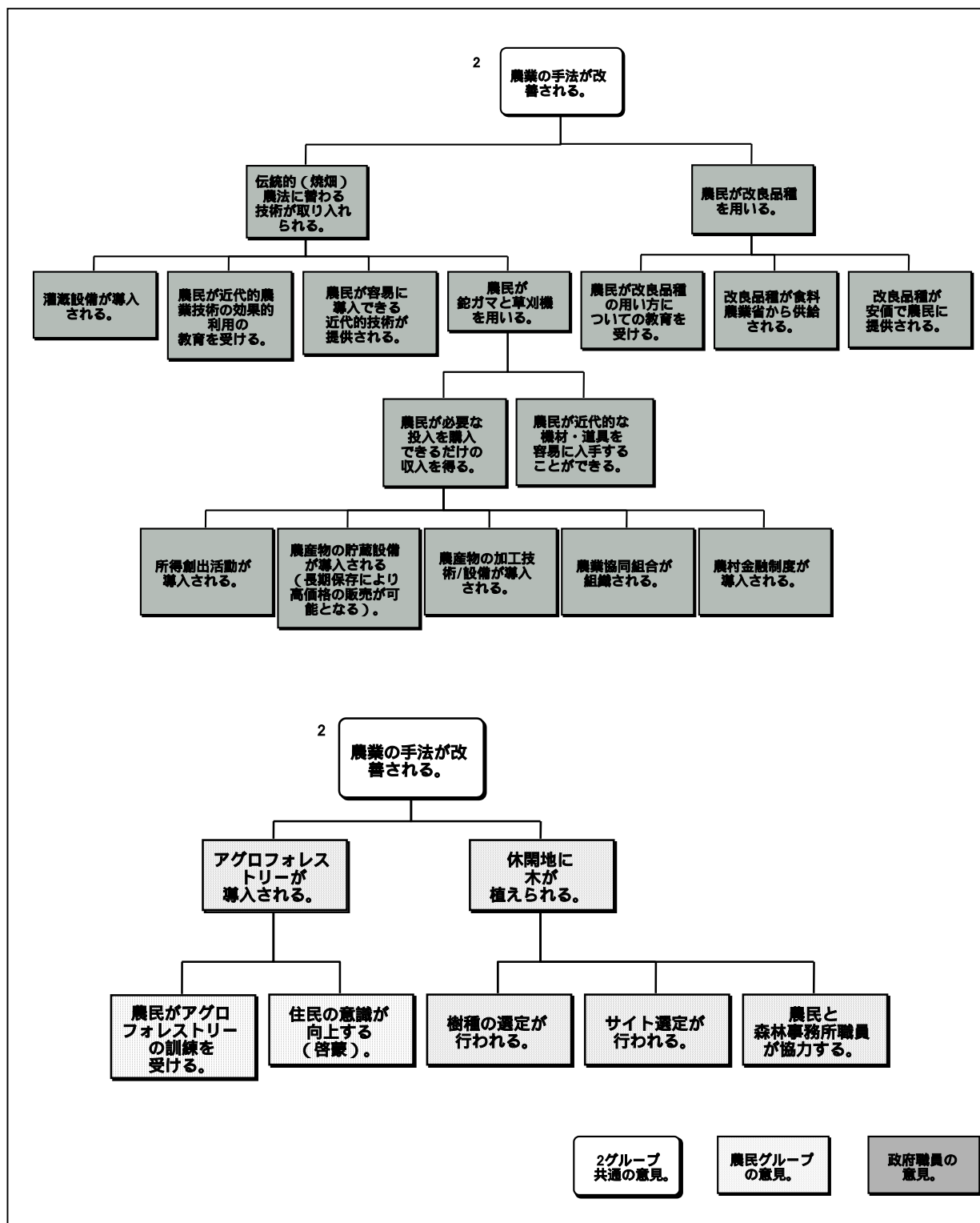


図 A-11 農業手法を改善する手段

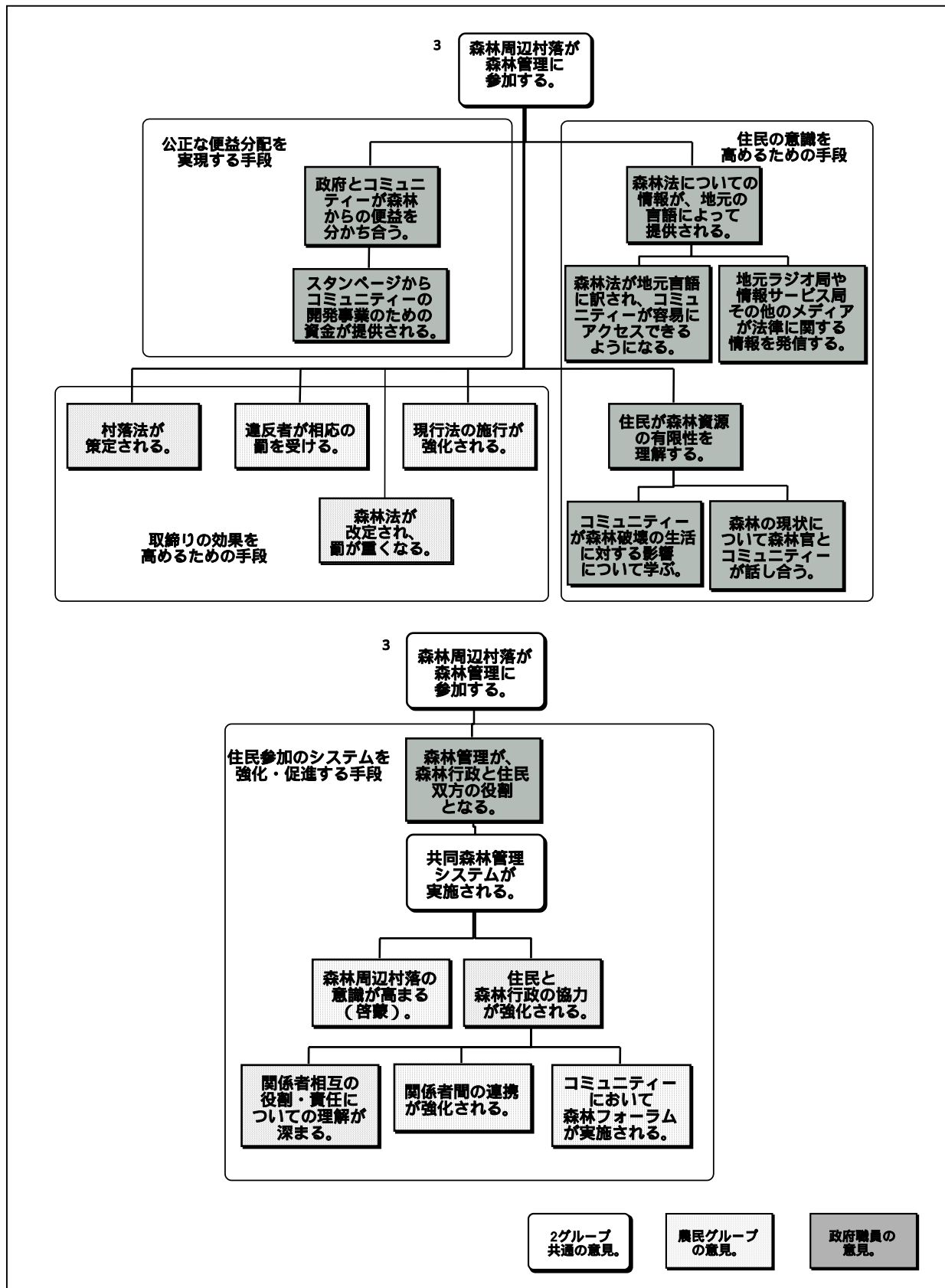


図 A-12 森林周辺村落の参加を促進するための手段

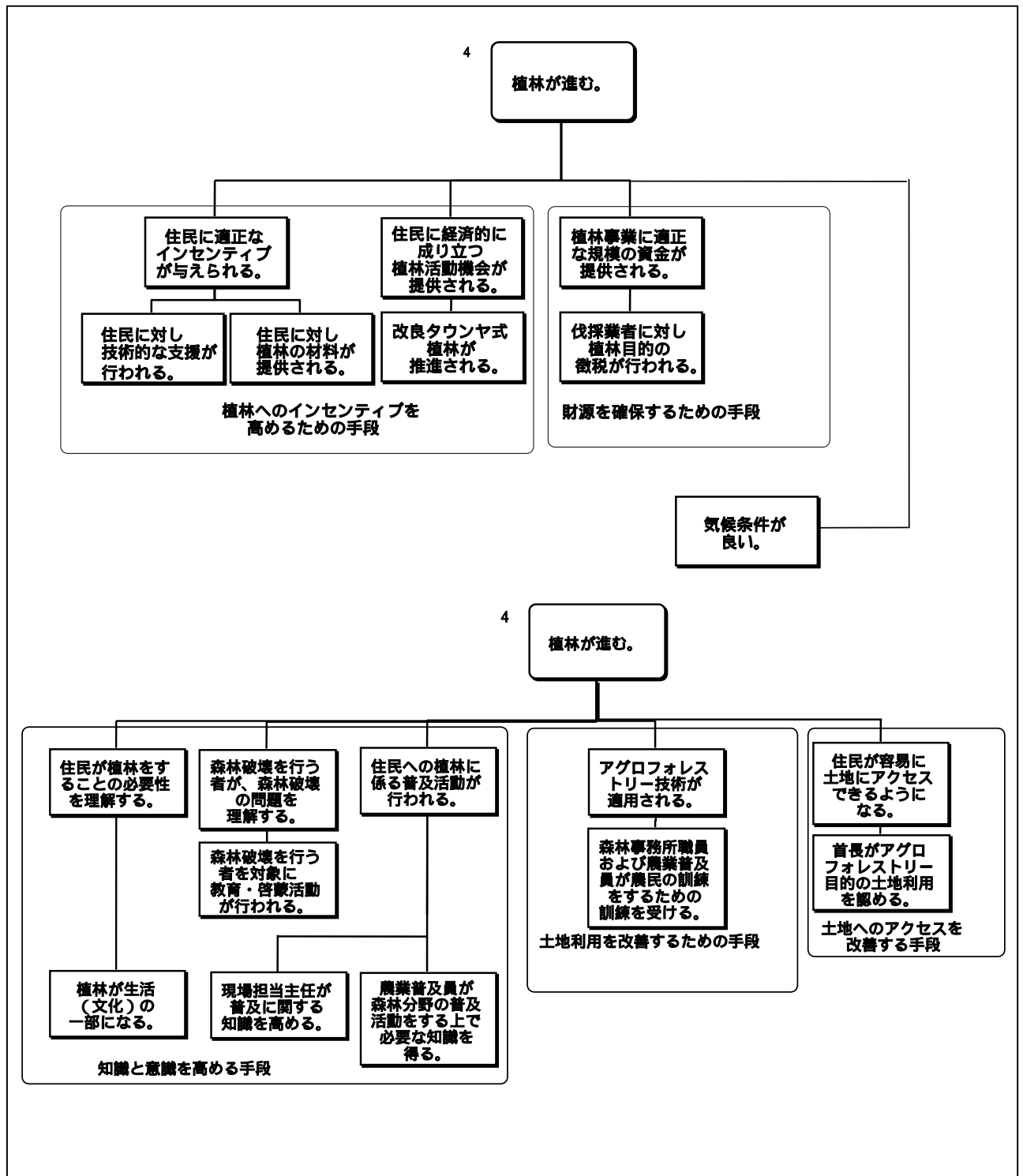


図 A-13 植林を進めるための手段

注：この分析は政府グループのみが実施した。

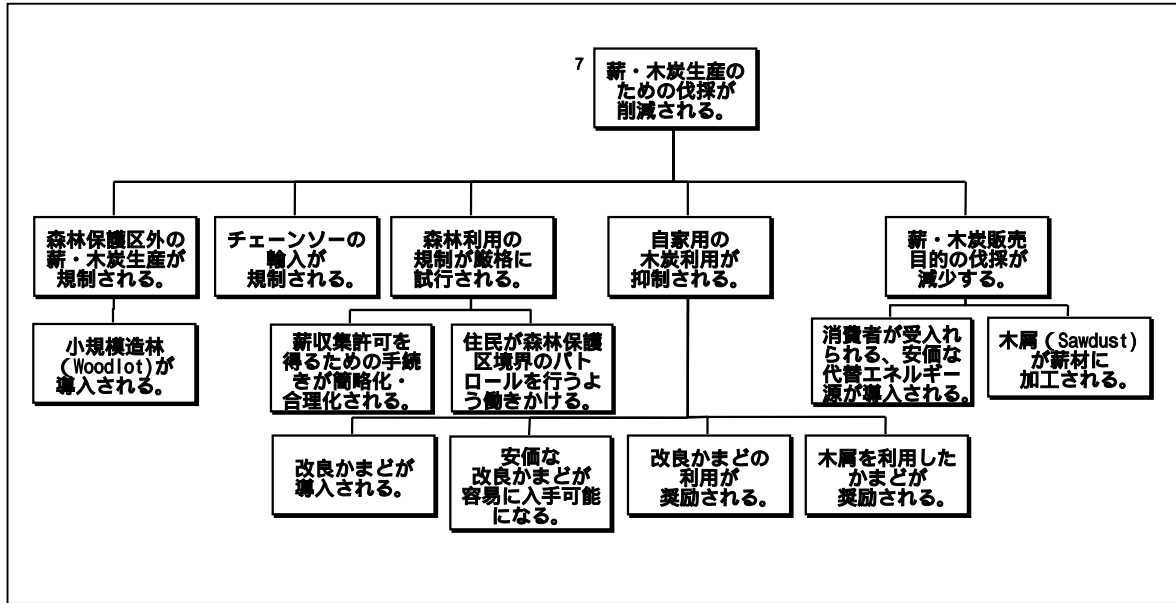


図 A-14 薪・木炭生産のための伐採を削減するための手段

注：この分析は政府グループのみが実施した。

5. 成果群と活動オプシオン

表 A-7 目的系図から特定された成果群・活動オプシオン

目的：野火が防止される。		目的：農業の手法が改善される。	
成果群・活動オプシオン	現在の取り組み	成果群・活動オプシオン**	現在の取り組み
<ul style="list-style-type: none"> 火を用いない狩猟方法（捕獲方法）が取り入れられる。 ブッシュ・ミートが家畜化され、市場に供給される。 （グラス・カッターなどの）家畜化方法の訓練を行う。 消費者に対し啓発活動を行う。 農業の火入れが規制される。 伝統的な腐葉土を用いる農法（mulching system）を推奨する。 消防ボランティアが火入れの方法を監督する。 訓練/啓発活動を実施する。 「ノブア制度」を導入する*。 野火防止関連の法律の見直しが行われる（罰金の値上げ）。 野火防止法が効果的に施行される。 関連組織・機関間の協力を強化する。 関連組織・機関と住民の協力を強化する。 住民が違反者の摘発に協力的になる。 住民が違反者を報告するよう動機付けをする。 違反者が相応の罰を受けるようにする。 摘発者の匿名性を確保する。 消防士に必要な物質的・金銭的・人的資源が与えられる。 民間セクターの消防活動への出資を促進する。 郡議会の共通基金から資金を配賦する。 消防士のインセンティブを高める（表彰制度、雇用条件改善）。 消防ボランティアに必要な物質的・金銭的・人的資源が与えられる。 SRAの一部を、消防ボランティアに資金を配分する。 郡議会が消防ボランティアに資金を提供する。 農民が消防団（Fire Fighter）として訓練される。 住民の訓練活動を行う。 住民に消火機材を与える。 伝統的な消火手法を推奨する。 農民が田畑で調理をしない。 啓発活動を行う。 見張り塔が設置される。 	-	<ul style="list-style-type: none"> アグロフォレストリーが導入される。 訓練/啓発活動を行う。 休閑地に木が植えられる。 樹種の選定を行う。 サイト選定を行う。 農民と森林事務所職員の協力を強化する。 農民により定地農業が取り入れられる。 訓練活動を実施する。 近代的な技術を導入する。 灌漑設備を導入する。 農民が必要な投入を購入できるだけの収入を得る。 所得創出活動を導入する。 農産物の貯蔵設備を導入する。 農産物の加工技術を導入する。 農業組合を形成する。 農村金融制度を導入する。 改良品種が導入される。 	-
	-	<p>*主に北部からの移住者が用いている制度で、親族や友人でグループを形成し、労働力を提供し合って相互支援するもの。農作業において火入れが行われる理由の一つが労働力不足（火入れにより労働力をかけずに雑草を除去できる）であることに對し、農民グループが提案した手段の一つである。</p> <p>**食料・農業省の具体的取り組みについては未調査のため要確認。</p>	-

目的：森林周辺村落が森林管理に参加する。		目的：植林が進む。	
成果群・活動オプション	現在の取り組み	成果群・活動オプション	現在の取り組み
<ul style="list-style-type: none"> 法の施行が強化される。 現行の法律が改定され、処罰が強化される。 村落法が導入される。 共同森林管理システムが導入・強化される。 住民と森林行政の協力を強化する。 関係者相互の役割・責任についての理解を深める。 関係者間の連携を強化する。 コミュニティにおいて森林フォーラムを実施する。 住民の意識を高める（啓発活動）。 政府とコミュニティが森林からの便益を分かち合う。 住民が森林資源の有限性を理解する。 啓発活動を行う。 住民が森林法について現地の言葉で学ぶことができる。 森林法を現地語に翻訳し、コミュニティがアクセスできるようにする。 地元ラジオ局や情報サービス局、その他のメディアを活用し、法律に関する情報を発信する。 	-	<ul style="list-style-type: none"> 住民が植林の必要性を理解する。 植林が生活の一部になる。 情報を住民に提供する。 訓練活動を行う。 森林破壊行為を行う者（農民、伐採業者、チェンソー従事者、ハンター、木炭生産者、ヤシ樹液採集者など）が、森林破壊の問題を理解する。 啓発活動を行う。 経済的に成り立つ植林活動が住民に提供される。 改良タウンヤシ植林を推進する。 住民に適正なインセンティブが提供される。 住民に技術指導を行う。 住民に材料を提供する。 植林事業のために適正な規模の資金が提供される。 住民に対する植林の普及活動が行われる。 森林事務所現場担当主任の普及に関する知識を高める。 農業普及員がコミュニティにおいて森林分野の支援も出来るよう、必要な知識を与える。 アグロフォレストリー技術が適用される。 森林事務所職員および農業普及員が農民を訓練できるよう、必要な知識と技術を取得させる。 住民が容易に土地にアクセス出来るようになる。 首長がアグロフォレストリー目的の土地利用を認める。 	現在の取り組み
目的：薪・木炭生産のための伐採が削減される。		目的：薪・木炭生産のための伐採が削減される。	
<ul style="list-style-type: none"> 森林保護区外（の天然林）の薪・木炭生産が規制される。 小規模造林（woodlot）を導入する。 チェンソーの輸入が規制される。 薪・木炭販売目的の伐採が減少する。 消費者に受け入れられる、安価な代替エネルギー源を導入する（バイオガスなど）。 木屑（sawdust）を薪材に加工する。（右上へ） 	現在の取り組み	<ul style="list-style-type: none"> 森林利用の法規制が厳格に施行される。 薪収集許可を得るための手続きを簡素化・合理化する。 住民が森林保護区境界をパトロールするよう働きかける。 自家用の木炭利用が抑制される。 改良かまどを導入する。 木屑（sawdust）の利用を推奨する。 	現在の取り組み

注： ；現在取り組みが行われている成果/活動、 - ；あまり行われていない成果/活動、 - - ；殆ど行われていない成果/活動。

2. プロジェクトドキュメント案

ABBREVIATIONS

AfDB	African Development Bank
CFC	Community Forest Committee
CFMC	Community Forest Management Committee
CRM	Collaborative Resource Management
CRNR	College of Renewable Natural Resources
DA	District Assembly
DED	German Development Service (Deutscher Entwicklungsdienst)
DfID	Department for International Development (United Kingdom)
FAO	Food and Agriculture Organization of the United Nations
FC	Forestry Commission
FORIG	Forestry Research Institute of Ghana
FORUM	Forest Protection and Resource Use Management Project (GTZ/DED/KfW)
FPDC	Forest Plantation Development Center
FR	Forest Reserve
FSD	Forest Services Division
FSDPII	Forest Sector Development Project Phase II (DfID)
GEF	Global Environmental Facility
GOG	Government of Ghana
GOJ	Government of Japan
GPRS	Ghana Poverty Reduction Strategy
GTZ	German Organization for Technical Cooperation (Gesellschaft für Technische Zusammenarbeit)
KfW	Development Loan Cooperation of Germany (Kreditanstalt für Wiederaufbau)
MLF	Ministry of Lands and Forestry
MOFA	Ministry of Food and Agriculture
MTS	Modified Taungya System
NRMP	Natural Resources Management Program
OASL	Office of Administrator of Stool Lands
Off-FR	Off Forest Reserve
PDD	Plantation Development Division
RCC	Regional Coordinating Council
RMSC	Resource Management Support Center

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	97
2. INTRODUCTION.....	97
3. BACKGROUND OF THE PROJECT.....	98
3.1 COUNTRY PROFILE	98
3.2 ECOLOGICAL CHARACTERISTICS AND LAND USE	99
3.3 STATE OF THE FOREST	99
3.4 TRADE AND INDUSTRY.....	101
3.5 GOVERNMENT POLICIES AND STRATEGIES ON FOREST DEVELOPMENT	101
3.6 INSTITUTIONAL FRAMEWORK OF THE FOREST SECTOR.....	104
3.7 BRONG AHAFO REGION.....	106
3.8 PRIOR TO ON-GOING ASSISTANCE	109
4. PROJECT JUSTIFICATION AND THE PROBLEMS TO BE ADDRESSED	111
4.1 PROJECT JUSTIFICATION	111
4.2 PROBLEMS TO BE ADDRESSED	112
5. PROJECT STRATEGY (PROPOSED)	115
5.1 FOCAL AREAS OF THE PROJECT.....	115
5.2 STRATEGIES	115
6. PROJECT DESIGN.....	117
6.1 PROJECT SITE.....	117
6.2 TARGET BENEFICIARIES	117
6.3 OVERALL GOAL	117
6.4 PROJECT PURPOSE	118
6.5 OUTPUTS AND ACTIVITIES	118
6.6 INPUTS.....	118
6.7 IMPORTANT ASSUMPTIONS AND RISK ANALYSIS	118
6.8 PRECONDITIONS AND PRIOR OBLIGATIONS	118
7. PROJECT MANAGEMENT AND COORDINATION.....	118
7.1 ORGANIZATIONAL STRUCTURE FOR PROJECT MANAGEMENT AND IMPLEMENTATION.....	118
8. EX-ANTE ASSESSMENT	118
9. REFERENCE DOCUMENTS	119
10. ANNEXES.....	120

TABLES AND FIGURES

TABLE 1 COUNTRY PROFILE OF GHANA	98
TABLE 2 LAND USE BY CATEGORY	99
TABLE 3 FOREST COVER AND ITS DECLINING TREND IN SELECTED REGIONS	100
TABLE 4 CLASSIFICATIONS OF FOREST RESERVES IN THE HIGH FOREST ZONE.....	100
TABLE 5 BENEFIT SHARING FROM NATURAL FOREST RESOURCES (%)	103
TABLE 6 FOREST DISTRICTS IN BRONG AHAFO REGION	105
TABLE 7 BASIC STATISTICS OF BRONG AHAFO REGION.....	107
TABLE 8 FOREST RESERVES IN BRONG AHAFO REGION.....	108
TABLE 9 MAIN DONOR-FUNDED PROJECTS IN BRONG AHAFO REGION.....	110
FIGURE 1 ANNUAL PLANTATION ESTABLISHMENT (HA)	100
FIGURE 2 ORGANIZATIONS RELATED TO FOREST SECTOR IN GHANA	104
FIGURE 3 CAUSES OF FOREST DEGRADATION IN THE TARGET AREA	113

1. Executive Summary

To be drafted after the Preparatory Study Mission.

2. Introduction

Forest resource in Ghana is an important national asset. Timber resource is one of the main foreign exchange earner, and from the environmental perspective, forests play vital roles as windbreaks, watershed, and for conserving biological diversity. However, due to the high emphasis on timber exploitation in the past, and due to various human-induced deforestation such as illegal logging, wild fire and encroachment by agricultural activities, forest resource in Ghana is diminishing. According to FAO statistics, forest cover has been declining at 1.7% per year, or by approximately 120,000ha per year between 1990 and 2000.

Forests in the Transition Zone have a unique ecological importance in Ghana. The Transition Zone serves as a buffer between the two significantly different ecological zones, namely the dry, Northern Savanna Woodland Zone and the rich and humid High Forest Zone. Especially in Brong Ahafo Region where soil is rich and agricultural production is high, the forest is playing a vital role in creating a preferable microclimate. The forest also protects agricultural products from the *Harmattan*¹.

In view of the importance of managing the forest resources in Ghana, and in the Transition Zone in particular, the Government of Japan (GOJ), through the Japan International Cooperation Agency (JICA), has supported the Government of Ghana (GOG) from 1997 to 1999 by dispatching a team to conduct the “Study on the Reserve Forest Management in the Transition Zone in Ghana.” A sustainable forest management plan was developed through this Study, which was composed of measures to promote forest rehabilitation, fire control, and active participation of local people. Subsequently, a Japanese expert was sent to Ghana in April 2001, to assist the Brong Ahafo Regional Office of the Forest Services Division (FSD) to implement the management plan.

As the term of the expert was reaching its end, GOG requested GOJ for a continued support. In response to the request, JICA dispatched the Fact Finding Study Team in March 2003, followed by the Preparatory Study Team in future. The teams assessed the situation of the forests in Brong Ahafo Region, identified the needs, and prioritized specific areas in which technical assistance can be provided. This Technical Cooperation Project has been designed based on the findings of these 2 missions, building on the past collaborative efforts by GOG and GOJ in Brong Ahafo Region, and to enhance the on-going efforts by GOG.

¹ *Harmattan* is the dry desert wind that blows from the Sahara towards the south between December and February.

3. Background of the Project

3.1 Country Profile

Ghana is a West-African nation facing the Gulf of Guinea to the South, and bordered by Cote d'Ivoire to the West, Burkina Faso to the North, and Togo to the East. The total surface area is 238,500km² with the population of 19.7million.

The basic socioeconomic statistics of Ghana is presented in Table 1. Agriculture sector makes a high contribution to the nation's economy, representing approximately 36% of the total GDP. Except in the two regions with large urban centers (Great Accra and Ashanti), more than 60% of the population is rural based. According to 2000 statistics, 49.1% of the economically active population is engaged in agriculture, hunting and forestry. Ghana has made a progress in reducing the poverty incidence from 52% to 40% between 1991/92 and 1998/99. However, there is a significant regional disparity, with poverty incidence ranging from 88% in the Upper East Region to 5% in Great Accra Region.

Table 1 Country profile of Ghana

Demography	Ghana	Sub-Saharan Africa
Population (Million ; 2001) ¹	19.7	673.9
Total Fertility Rate (Lifetime birth/woman; 2000) ²	4.4	5.7
Population Growth (Annual %; 2001) ¹	1.8	2.3
Economic Indicators		
GDP at current price (US\$; 2001) ¹	5.3 billion	315.7billion
GDP growth rate (Annual %; 2001) ¹	4.0	2.9
GDP structure (% of GDP; 2001) ¹		
- Agriculture	35.9	16.1
- Industry	25.2	28.3
- Services	38.9	55.6
GDP/capita (US\$; 2001) ¹	269	468
Social Indicators		
Poverty Incidence (%; 1999) ³	40.0	
Infant Mortality Rate (Per 1,000 live births) ²	58	108
Percent of population in rural area ⁴	56.2%	
Improved water source (% of population with access; 2000) ¹	73.0	58.1
Adult Illiteracy Rate (% age 15+; 2001) ¹	27.3	37.7

Source: 1: World Bank, *Ghana Data Profile* (Internet). Per capita GDP is calculated from the data. 2: UNICEF, *UNICEF Statistics* (Internet). 3: *Ghana Poverty Reduction Strategy*, 2003. The overall poverty is based on the 'upper poverty line' defined by the Ghana Living Standards Survey, which derives nutrition-based lines of poverty, equivalent to 900,000 cedis per adult per year. 4: Ghana Statistical Service, 2002. *Population and Housing Census*.

3.2 Ecological Characteristics and Land Use

Ghana is divided into two main ecological zones: the High Forest Zone and the Savannah Woodlands Zone. Approximately 1/3 of the total land area, located in the Southeast of the country, falls under the High Forest Zone. The remaining 2/3 is the Savanna Woodlands Zone, situated in the Northern and Southeastern parts of the country. The boarder area between the Northern Savanna Woodlands and the High Forest Zone is called the Transition Zone.

There are 266 forest reserves, out of which 204 are in the High Forest Zone, and 62 in the Savanna Zone. In addition, there are 15 areas categorized as national parks or wildlife and nature reserves. Together, these reserves occupy approximately 16% of the total land area (Table 2). Aside from the reserved areas, there remain small proportions of forestland, which share about 2%. Land for agricultural production, including both annual and tree crops, occupies 12%. Approximately 25% falls under the category of 'bush fallow and other, ' which implies a large proportion of land being used for shifting cultivation.

Table 2 Land use by category

Land Use	(1,000km ²)	(%)
Forest reserves	26	11
Wildlife reserves	12	5
Off-reserve forests	5	2
Tree crops	17	7
Annual crops	12	5
Bush fallow & others	60	25
Savannah Woodland	71	30
Unimproved pasture	36	15
TOTAL	239	100

Source: Ghana Forest Service. *National Forest Management Plan 1998-2002*, Table 6.

3.3 State of the Forest

According to the FAO statistics, forest cover in Ghana is declining at an annual rate of 1.7%, or 119,988ha/year between 1990 and 2000. Analysis by the Resource Management Support Center (RMSC) indicates that the deforestation ratio is highest in Ashanti Region (2.6%), followed by Western Region (1.8%) and Brong Ahafo Region (1.7%). The situation of the remaining forests is also not promising. Out of the 16,340km² reserved area in the High Forest Zone, close to 1/3 is in a degraded state that needs rehabilitation or reforestation (Table 4). There are studies estimating that only about 16% of the forest reserves are currently in a good state, rest being in various stages of degradation². This indicates that even the forests classified as timber production area or permanent protection area are not all in good conditions.

² Forest Plantation Development Center, 2003. *Overview of the National Forest Plantation Development Program*.

Table 3 Forest cover and its declining trend in selected regions

Region	Total Land Area (km ²)	Forest Cover (%) agst. Total Land Area (2000)	Change in Forest Cover (1990-2000; %loss)	Change in Forest Cover (%/year)
Eastern	18,813	9.24	16.0	1.6
Central	9,725	10.0	-	-
Western	22,060	65.0	18.2	1.8
Brong Ahafo	39,060	34.0	16.89	1.7
Ashanti	24,660	20.9	26.26	2.6

Source: Resource Management Support Center, 2002. *Forest Inventory Resource Workshop 2002*. Forest Cover for Ashanti and Brong Ahafo are calculated by author based on the data.

Table 4 Classifications of forest reserves in the High Forest Zone

Classification	Area (ha)	Area (%)
Timber Production Area	762,400	47
Permanent Protection Area	352,500	21
Convalescence Area	122,000	8
Conversion Area	397,000	24
Total Reserve Area	1,634,100	100

Source: Ghana Forest Service. *National Forest Management Plan 1998 – 2002*. Table 3

Plantation had not been actively conducted in Ghana in the past. According to FSD data, total area of plantation established under government plantation programs between 1976 and 1990 was 2,174ha. Records further indicate that no government-led plantation was conducted during late 1990s when the national policy placed strong emphasis on private sector involvement in plantation activities.

The situation changed in 2000 when the current Government came into power, as plantation was given high priority, and as its policy did not restrict plantation activities to private sector. The National Plantation Development Program was initiated in 2001, which has led to a substantial increase in the annual level of plantation (Figure 1. Also refer next section). Under the Program, most of the plantations have been established adopting the Modified Taungya System (MTS).

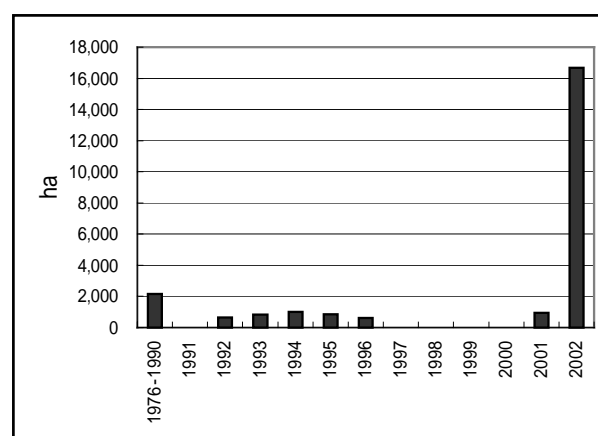


Figure 1 Annual plantation establishment (ha)

Source: Data provided by FSD, 2003.

3.4 Trade and Industry

According to the analysis by *Ghana Wood Industry and Log Export Ban Study*, forest sector accounted for approximately 2% of the nominal GDP, or 470billion cedis in 1999. Logging activities alone contributed the most (20%), followed by primary and secondary processing activities (saw, veneer and plywood manufacturing) contributing 50%, and tertiary operations sharing the remaining 30%. In terms of trade, forest sector contributed approximately US\$179million, or 8% of the nation's total foreign exchange earnings in 1999³. As log export has been banned since 1995, the main export items are sawn wood (54.1%) and wood-based panels (45.9%). In terms of domestic market, fuelwood and charcoal are important products catering for 75% of the country's fuel needs.

The total harvest in 1999 was estimated to be approximately 3.72million cubic meter⁴. Out of this figure, legal harvest was approximately 1.1 million m³, while 0.9 m³ was harvested illegally. In addition, approximately 1.7million m³ round wood equivalent of chain saw lumber was harvested. The above figures indicate that the total level of harvest was close to 4 times the legally permitted level. According to the study, off-forest reserve contributes to 71% of the harvest, while forest reserve contributes to the remaining 21%.

3.5 Government Policies and Strategies on Forest Development

The overall policy direction of the forest sector is described in the *Forest and Wildlife Policy of 1994*. The Policy aims at conservation and sustainable development of the nation's forest and wildlife resources for the maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society. Involvement of rural people in forestry and wildlife conservation is one of the main objectives (Refer Annex 1). Two documents had been developed to assist the implementation of the 1994 Policy, namely the *Forest Development Master Plan 1996-2020*, and the *National Forest Management Plan 1998-2002*. The guiding principles set in the 1994 Policy, and the plans described in the above two documents, are also reflected in the *Natural Resources Management Program (NRMP)*, which is the sector-wide program implemented with support from the World Bank and other development partners.

³ According to FAO statistics, total export earnings was US\$139million in 2001, while total imports of forest products amounted US\$18.6million (<http://www.fao.org/forestry/fo/country>).

⁴ Forestry Commission, 2001. *Ghana Wood Industry and Log Export Ban Study*.

In terms of forestry legislation, *Forest Ordinance of 1927* provided the legal basis for establishing the forest reserves. A number of laws have been passed since then, which have strengthened the role of the government and its regulatory functions. Since the Forest and Wildlife Policy of 1994 came into effect, new laws (and amendments of the existing laws) have been passed reflecting the philosophies of the Policy (Refer Annex 1). While this is a positive movement, there remain legal obstacles and inconsistencies in the existing laws, particularly in aspects of ownership, management, and benefit sharing⁵.

Plantation Strategy and the National Plantation Development Program

The Plantation Strategy for Forestry and the Forestry Commission has been drafted in 2002, and is currently under consideration by the Ministry of Lands and Forestry (MLF)⁶. The primary objective of the proposed Strategy is poverty reduction and environmental sustainability. It is built on the premise that farming households and community members must receive real benefits from forest reserve rehabilitation and management. Meanwhile, the GOG is implementing the *National Plantation Development Program* since 2002, with an annual target of establishing 20,000ha new plantations. Reported achievements of the Program in 2002 were establishment of 17,650ha new plantations, providing 76,630 job opportunities and generating 67 billion cedis in forms of agricultural products through the MTS⁷. While most of the plantation in 2002 was done by adopting MTS, it is anticipated that private sector led commercial plantation would increase in the future, bringing the annual target up to 80,000ha⁸.

Collaborative Forest Management

The concept of Collaborative Forest Management (CFM) is supported by the Forest and Wildlife Policy of 1994. More recently, the *Collaborative Forest Management Policies and Strategies for the Ghana Forestry Commission* has been drafted in March 2001. These documents indicate the government's recognition on the importance of involving local communities in forest reserve management. However, roles of local communities remain somewhat passive at present, mostly in forms of hired labor for boundary cleaning, establishment of firebreaks, etc. In order to empower

⁵ Refer FORUM, 2002. *Developing the Legal Framework for Collaborative Forest Management in the Republic of Ghana*.

⁶ Plantation Strategy Development Horizontal Working Group, Forestry Commission, 2002. *Plantation Strategy for the Forestry Sector and the Forestry Commission (Draft vers. of Nov. 2002)*. A separate strategy for private sector is being drafted with support from the World Bank, which would eventually be consolidated into a single strategy (FPDC, pers comm.).

⁷ RMSC & FPDC. *National Forest Plantation Development Project – Plantation sites, total area under plantation and jobs created*.

⁸ FPDC. *Overview of the National Forest Plantation Development Program*.

local communities as the stakeholder in forest management, pilot initiatives on CFM has been conducted in selected districts by FSD, through which Community Forest Committees (CFC) are established. Similar committees are formed under the German-funded FORUM Project in Volta Region (Community Forest Management Committee: CFMC) and by the Wildlife Division (Protected Area Management Advisory Board).

Benefit Sharing Framework

Under the current practice, revenues from natural forest resources are shared in the ratios shown in Table 5. The figures indicate that Stool Chiefs (the caretaker of the land on behalf of the land owning communities) receive only 9% of the revenue from the resources in the forest reserve. Further, forest fringe communities do not receive any *direct* benefits, and only receive benefits through the funds allocated to District Assemblies, which is used for the development of the given district.

Table 5 Benefit sharing from natural forest resources (%)

Stakeholders	Percentage of Revenue Allocated	
	Forest Reserve	Off-Forest Reserve
Forestry Commission	60	40
Administrator of Stool Lands	4	6
District Assemblies	19.8	29.7
Stool Chief (Alienation Holder)	9	13.5
Traditional Council	7.2	10.8
TOTAL	100.0	100.0

Source: Agyeman, V.K. et.al. *Draft Report on Equitable Cost and Benefit Sharing in Plantation Development: Public Private and Local Community Partnerships in Ghana*. P. 19, Table 2.

As for plantation, the benefit-sharing framework is currently being reviewed by the Attorney General's Office. The framework proposes the benefit sharing formula for both large-scale commercial plantation and for small-scale plantation under the MTS. For the MTS, the sharing ratio is up to 40% for the Forestry Commission, 40% to the farmers, 15% to the traditional authorities and the chiefs, and 5% to the forest fringe communities. While the framework is still being reviewed, MTS has been implemented in the field under the assumption that the proposed benefit sharing framework would come in to effect in the future.

3.6 Institutional Framework of the Forest Sector

The institutional framework of the forest sector is summarized in Figure 2. Organizational diagrams of the main organizations and institutions can be referred to in Annex 3.

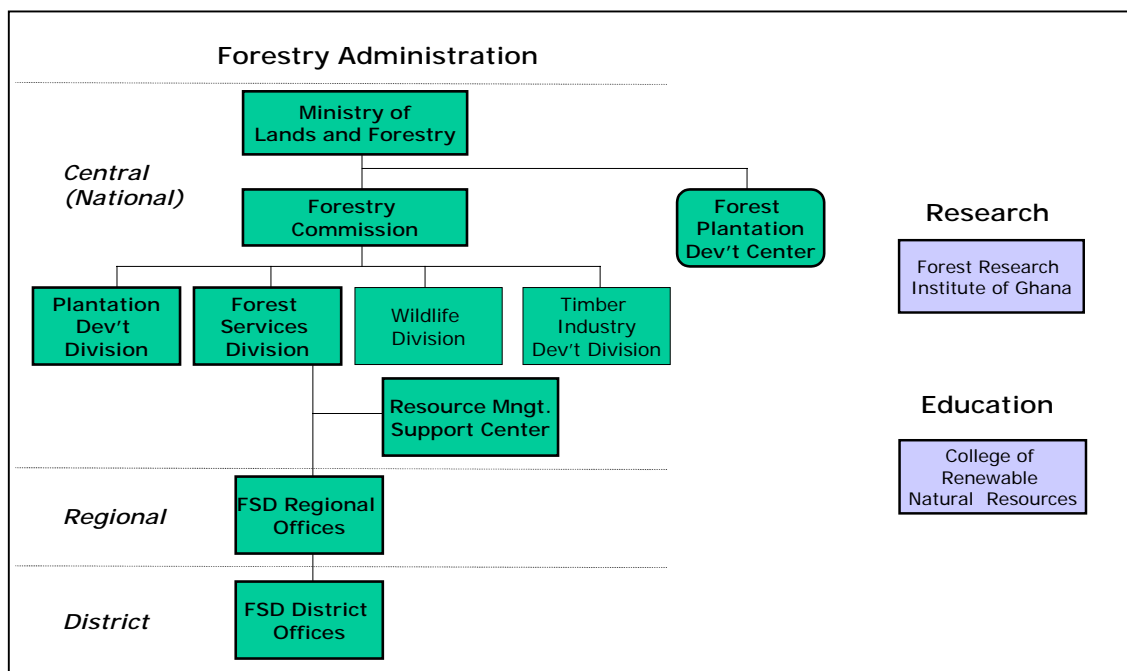


Figure 2 Organizations related to Forest Sector in Ghana

Source: Prepared by the Study Team. Note: The organizations in bold-lined boxes are explained in the text of this Section. Regional and district level structures of the PDD, Wildlife Division and Timber Industry Development Division are not described in this figure (For the proposed structure of the PDD, refer Annex 3).

The forestry administration in Ghana is headed by the Ministry of Lands and Forestry (MLF), under which the Forestry Commission (FC) is established as the implementing body. FC is responsible for the regulation of the utilization of forest and wildlife resources, the conservation and management of those resources, and the coordination of policies related to them. The FC has 3 operational divisions, namely the Timber Industry Development Division, Wildlife Division, and the Forest Services Division (FSD). In April 2003, establishment of the 4th division has been decided, which is the Plantation Development Division (PDD).

FSD is the division under the FC responsible for forest resource management. Its main functions are to: protect, manage and develop the forest reserves; monitor the conditions of the nation's forest resources; advice on the forest policy; and to regulate the harvesting of forest resources. FSD has its Regional Offices in each of the regions in Ghana, which supervise the District Forest Offices. In

many cases, one FSD District Office covers more than one administrative district. For example in Brong Ahafo Region, 6 FSD District Offices cover 13 administrative districts (Table 6).

Table 6 Forest districts in Brong Ahafo Region

	Names of the FSD districts	Names of administrative districts	
1	Sunyani	Sunyani	Techiman
		Wenchi	
2	Dormaa-Ahenkro	Dormaa	Jaman
		Berekum	
3	Goaso	Asutifi	Asunafo
4	Bechem	Tano	
5	Kintampo	Kintampo	Nkoranza
6	Atebubu	Atebubu	Sene

Source: Interview at FSD Brong Ahafo, 2003. Note: As some of the forest reserves cross borders of administrative districts, technically the FSD District Offices handle some additional districts.

FSD has its technical wing, namely the Resource Management Support Center (RMSC), stationed in Kumasi, Ashanti Region. RMSC's main role is to develop effective and affordable forest management system that complies with the nation's forest policy, and to facilitate and monitor their implementation. The Center has 5 technical units: Environment and Conservation, Forest Information Systems, Collaborative Forest Management, Production, and Plantations.

Aside from the organizations structured under the FC as mentioned above, there is the Forest Plantation Development Center (FPDC), which reports directly to the MLF. FPDC was established in December 1999 as the implementing body for the High Forest Resources Management Component of the NRMP. Its main function has been to facilitate the development of private and public sector forest plantation in Ghana. Coordination of the National Plantation Development Program has also been an important responsibility of FPDC. It is likely that FPDC will be absorbed into PDD in the near future (refer below).

PDD is the new division under the FC, which is expected to become the institution responsible for forest reserve plantations presently being handled by FSD regional and district offices⁹. According to the latest plan, two branches will be established under the PDD, namely Plantation Program Development, and Operations. The former will be responsible for providing advices to private sector investors, and for developing training programs. The latter will be responsible for the

⁹ Plantation Strategy Development Horizontal Working Group, Forestry Commission, Nov. 2002. *Proposal for the establishment of a Plantation Development Division for the Forestry Commission.*

management of plantations in the forest reserves. The PDD will not be equipped with a substantial labor force, but rather it will act as an ‘honest broker’ between the private sector and the communities, by matching the needs and the services required. It will also be responsible for involving local communities in developing plantation management plans, and in building communities’ capacity to manage the plantations.

The main research institution in the forest sector is the Forest Research Institute of Ghana (FORIG), under the Council for Scientific and Industrial Research. FORIG has its main center in Kumasi, and 5 sub-stations covering the different vegetation zones of the country. Its mission is to conduct user-focused research that generates scientific knowledge and appropriate technologies, which enhance sustainable development, conservation and efficient utilization of Ghana’s forest resources, and to disseminate the information for the benefits of the people of Ghana. Its main research focuses are natural forest management, plantation development, wood processing and utilization, and non-timber forest products.

College of Renewable Natural Resources (CRNR) in Sunyani is the center of forestry training and education. CRNR, the former School of Forestry, was upgraded into a tertiary institution in 1999 to cater for the human resources needs of the natural resource sector. It offers a diploma program for middle level personnel in fields of forestry, wildlife and range management, and fisheries. Most of the technical officers of the public sector, such as the Range Supervisors of FSD, have received training at the College.

3.7 Brong Ahafo Region

Regional Profile

Brong Ahafo Region is bordered by the Northern Region to its North, Volta Region to its East, and Western, Ashanti, and Eastern Regions to its South (Refer Annex 2). It shares the international boundary with Cote d'Ivoire to its West. The region covers 39,557km² (17% of the national land cover), and is the second largest region after Northern Region. The annual average temperature is 29.9 . The annual average rainfall is at 1,651mm in the southern part of the Region, and 1,270-1,643mm in the northern part. There are 2 distinct vegetation zones: the semi-deciduous forest in the south and southwestern part of the Region; and the guinea savanna woodland in the northern and eastern parts of the Region¹⁰.

¹⁰ Based on the information provided by FSD Brong Ahafo Region, 2003.

Population of the Region is 1,815,408 which accounts for 9.6% of the national population. The population growth rate is 2.5%, attributed both to natural growth and migration from the north. Approximately 62.6% of the population resides in rural areas. Agriculture sector employs 70% of the regional population and contributes to a substantial proportion of the regional GDP. There is 23,734km² arable land, representing approximately 60% of the total area. It is estimated that 9,746km², or approximately 41% of the arable land, is under cultivation (Table 7)¹¹.

Table 7 Basic statistics of Brong Ahafo Region

Items	Unit	Brong Ahafo	Whole Country
Demography			
Population (2000) ¹	1,000 persons	1,815	18,912
Intercensal Growth Rate ¹	%	2.5	2.7
% of Rural Population (2000) ¹	%	62.6	56.2
Social Indicators			
Poverty Incidence ²	%	36	40
Geography			
Surface Area	Km ²	39,557	239,000
Proportion of Forest Reserve ³	%	7	11
Proportion of Arable Land ⁴	%	60	
Proportion of Land under Cultivation ⁴	%	25	

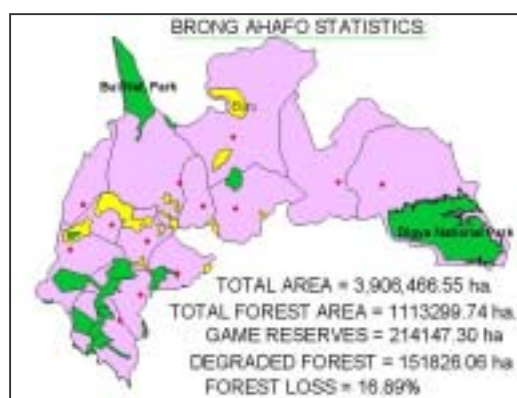
Source: 1: Ghana Statistical Service, 2002. *Population and Housing Census*. 2: *Ghana Poverty Reduction Strategy*, 2003. 3: For the whole country, Ghana Forest Service. *National Forest Management Plan 1998-2002*, Table 6. For Brong Ahafo Region, calculated from the data provided by FSD Brong Ahafo Regional Office. 4: Brong Ahafo Regional Office of Food and Agriculture.
Note: The demographic data for this table is different from that of Table 1, as regional data was only available from the Population and Housing Census of 2000.

There are 21 forest reserves in Brong Ahafo Region, covering an area of 2,912km²(Table 8). Seven out of the 21 reserves are for timber production, while the remaining 14 are for protection. Study by RMSC indicates that 1,586km², or 54% of the forest is degraded.

¹¹ Brong Ahafo Regional Office of Food and Agriculture, 2001.

Table 8 Forest reserves in Brong Ahafo Region

Forest District	Number of the Reserve	Total Area (km ²)	Remarks
Goaso	8	831	• 6 Production • 2 Protection
Sunyani	7	959	• 1 Production • 6 Protection
Bechem	2	157	• 2 Protection
Kintampo	2	453	• 2 Protection
Dormaa-Ahenkro	2	512	• 2 Protection
TOTAL	21	2,912	• 7 Production • 14 Protection



Source: FSD Brong Ahafo Regional Office. The map is from Resource Management Support Center, 2002. *Forest Inventory Resource Workshop 2002*. Yellow indicates the degraded forest reserves.

Local Government

The local government system in Ghana consists of Regional Coordinating Councils (RCC) and metropolitan/municipal/district assemblies¹². The main role of the RCC is to monitor, coordinate and evaluate the performances of the districts, to monitor the public expenditures within the region, and to review and coordinate the public services in the region¹³. The District Assemblies (DAs) are the main local government unit that has the responsibility for the overall development of the district. In Brong Ahafo, there are 13 DAs (refer Table 6).

Line ministries have their operational branches at the regional and district levels. These branches, referred to as decentralized departments, receive instructions from their parent ministries, and likewise report back to them. Their budgets are also provided directly from the ministries, and hence RCC and DA do not have authority over their activities. However, the decentralized departments liaise with the RCC and DA, to ensure that sectoral development plans and the overall district development plans are harmonized.

In Brong Ahafo, the RCC places high policy priority on wildfire prevention and plantation development. The RCC has been playing an important coordinating role for wildfire prevention. They have also been successful in securing resources from the central government for plantation along Tano River, which originated as the RCC's initiative. At the district level, Sunyani DA

¹² Types of the Assemblies are determined by the size of the population. Metropolitan is over 250,000, municipal is over 95,000, and district is 75,000 and over.

¹³ For the organizational structure of the RCC, refer Annex 3.

identifies promotion of reforestation and commercial tree planting as one of the objectives under the *Agriculture and Rural Development Program* stipulated in their Medium Term Development Plan. Sunyani DA has also been active in wildfire prevention, and it plays the coordinating role at the district level, similar to what is done by RCC at the regional level.

3.8 Prior to On-going Assistance

The overall framework of the development efforts in the forest sector is provided by the *Natural Resources Management Program (NRMP)*. NRMP was designed to support the implementation of the 1994 Forest and Wildlife Policy, Forestry Development Master Plan 1996-2020, the Forest Protection Strategy, and the National Environmental Action Plan. NRMP's objective is to protect, rehabilitate and sustainably manage national land, forest and wildlife resources and to sustainably increase the income of rural communities who own the resources. It has components on High Forest Resources Management, Savanna Resources Management, Wildlife Resources Management, Environmental Management Coordination, and Biodiversity Conservation in the High Forest Zone. NRMP also has activities on policy and institutional reform, program coordination and financial management.

NRMP is a 10-year program designed in 3 phases. The purpose of the 1st Phase (1999–2003) is to establish an effective policy and institutional framework for natural resource management and to test participatory resource management systems. It is supported by a number of donors including World Bank, GEF, DfID, European Union, and Royal Netherlands Embassy, with the overall budget level of US\$ 25.7million. Since the NRMP begun, a number of important legislations have been approved by the Cabinet (Annex 1). The challenge now lies on the implementation of these laws, and in bringing tangible impact down to regional and district levels. Internal coordination among relevant government departments, as well as the coordination between government and the donors, are also areas that can be improved.

Aside from NRMP and its project components, there are some important projects in the forest sector, such as the Forest Sector Development Project Phase II (FSDPII) supported by DfID, and the Forest Protection and Resource Use Management Project (FORUM) in Volta Region, supported by Germany (GTZ/DED/KfW). FSDP is a public sector reform project, which was instrumental in the restructuring of the former Forest Department into FSD during its 1st phase. Currently in its 2nd phase, FSDPII is assisting the FC to efficiently fulfill its roles and functions. FORUM Project begun in 1993, and is currently in its 2nd implementation phase (2000-2005). It has components on: Rehabilitation of Forest Reserves; Collaborative Forest Management; Private Small Scale Plantation

(Woodlots); Buffer Zone Development; and Capacity Building of FSD and MOFA Staff. Through its intensive efforts and close collaboration with the local communities and traditional authorities, FORUM Project has gained a wealth of experience that can be shared with projects in the related fields.

Table 9 summarizes the main projects related to forest sector, supported by donor agencies in Brong Ahafo Region. JICA has been one of the major donors assisting the forest sector in Brong Ahafo since 1997. Aside from the donor projects, there are a number of international and national NGOs active in Brong Ahafo, including Tree Farmers Association of Ghana (Tree FAG), Network of Environmental NGOs (NENGO), CARE International, and Africa 2000.

Table 9 Main donor-funded projects in Brong Ahafo Region

Name of the Project	Duration	Main Donor	Budget	Target Area within Brong Ahafo Region
<i>Forestry Projects</i>				
Study on the Reserve Forest Management in the Transition Zone in Ghana	2 years* 1997-1999 (2001-2003)	JICA	N/A	• Tain I, Tain II, Yaya, Nsemere, and Sawsaw FRs
Community Forest Management Project	6 years 2003-2009	AfDB	UA 9.12million (ADF Loan 7million)	• Yaya FR (The budget is for 6 FRs including those in other regions)
Wildfire Management in the Transition Zone	6 years 2001-2007	Netherlands	Euro 12million	Areas surrounding • Mpameso FR, Doormaa District • Bosumkese FR, Tano District (The budget is for the overall project covering 2 other regions)
Pilot on Collaborative Forest Management**	N/A	FSDPII	N/A	• Sunyani forest district (current) • Kintampo, Goaso, and Dormaa - Ahenkro forest districts (new)
<i>Agriculture Projects</i>				
Sedentary Farming Systems Project	10 years 1996-2005	Germany (GTZ/DED)	Euro 560,000 / year	Initially 3 districts (Asunafo, Sunyani, Atebubu). Expanded to all 13 districts since 2001.

Source: Information compiled from project documents and interviews. * Followed up by dispatching a JICA Expert.

** Pilot initiative on CFM is not a name of a project.

4. Project Justification and the Problems to be Addressed

4.1 Project Justification

There are a number of reasons why a technical cooperation project in the forest sector is considered for the Brong Ahafo Region by JICA: (1) Environmental significance of the Transition Zone; (2) Impact of forest degradation; (3) National and regional priorities; (4) Priority of the Japanese ODA, and (5) Comparative advantage of JICA.

Environmental Significance of the Transition Zone

Forests in the Transition Zone are important as the buffer zone between the High Forest Zone and the Northern Savannah Zone. Furthermore, forests play a vital role in creating a suitable microclimate for agriculture, which provides livelihoods opportunities for 70% of the population in Brong Ahafo. Forests also protect agricultural produces from *Harmattan*. In view of the critical roles of the forests in the Transition Zone, it is important to ensure that sustainable forest management is practiced and that the forest cover is maintained.

Impact of Forest Degradation

Results of the participatory planning workshop held in March 2003 indicated a wide range of impacts attributed to forest degradation in Brong Ahafo Region. There are impacts felt by the people at the local level, such as loss of windbreak, loss of shade, drying up of streams, loss of soil nutrients due to erosion, and decrease of wildlife. In addition, there are impacts that have broader implications, such as loss of biologically important species, frequent occurrence of natural disasters, and loss of economic timber species.

National and Regional Priorities

With the adoption of GPRS, GOG has placed poverty reduction as its overriding policy objective. GPRS identifies 5 thematic areas, namely (1) Ensuring macroeconomic stability; (2) Increasing production and gainful employment; (3) Human development and provision of basic services; (4) Special programs for the vulnerable and excluded; and (5) Good governance. Forest sector could make an important contribution to the national goal of poverty reduction, by enhancing people's participation in resource management, by ensuring equitable resource allocation and benefit sharing, and by promoting livelihoods activities through sustainable use of forest resources. As for regional

policy, it is worth noting that wildfire prevention and plantation development are among the high priority issues identified by the Brong Ahafo RCC.

Priority Area of Assistance by Japanese ODA

In view of the GOG's policy priority on poverty reduction, as well as the overall direction of the GOJ's development assistance to Ghana, JICA places the highest priority on assistance that benefits the poor segments of the society. Following are the 4 priority areas identified by JICA: (1) Agriculture development (Assistance on sustainable production and income generation in agriculture, forestry, and fisheries sectors); (2) Basic human needs; (3) Industrial development (Human development for industrial development); and (4) Economic infrastructure development. Restoration of forest resources and strengthening of sustainable forest management mechanism are among the areas of main concern identified under item (1) listed above. Participatory forest resources management has been emphasized as an important approach to be promoted to this end.

Comparative Advantage for JICA

JICA has been one of the main donors actively supporting the forest sector in Ghana, and in Brong Ahafo Region in particular. Through the past collaborative efforts, JICA has established its presence in the Region, and have built a close working relationship with the FSD offices at the regional and district levels, as well as with local communities and NGOs. Its support can be characterized as an 'on-the-ground' support, which begun with a 2-year intensive study of the 5 Forest Reserves in Brong Ahafo, followed by the assistance provided through a Technical Advisor stationed in Sunyani. From its experience, JICA has also gained substantial knowledge on the situation and the challenges faced by the Region in terms of forest management and development.

4.2 Problems to be Addressed

As stated under Section 3.7, fifty four percent of the forest in Brong Ahafo Region is degraded. Figure 3 summarizes the direct causes of forest degradation of the 5 FRs and their surrounding areas, as identified by farmers and government officers at the workshop held on 14 and 15 March 2003 in Sunyani¹⁴.

¹⁴ The target area was initially agreed to be the 5 forest reserves covered by the "JICA Study on the Reserve Forest Management in the Transition Zone in Ghana." These were Tain I, Tain II, Nsemere, Sawsaw, and Yaya FRs.

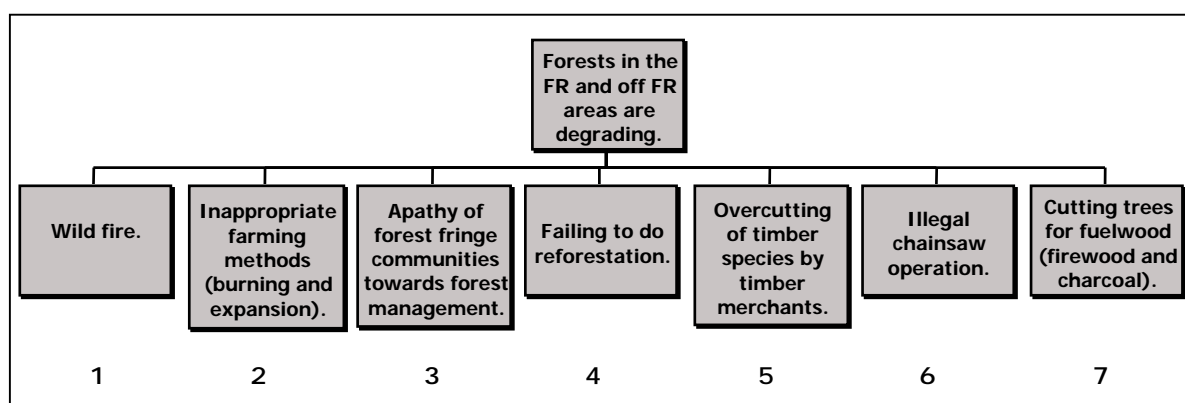


Figure 3 Causes of forest degradation in the target area

Source: Workshop, 14-15 March 2003.

Detailed results of the problems analysis can be referred to in Annex 4, in which the root causes of the 7 direct causes are presented in forms of problem trees. Summary of the findings are presented below, which provide basis for the project design. Focus is given on the problem of *wild fire*, which is a highly critical issue in the Region, and the *difficulty to implement plantation development*, which is an area that is given the highest policy priority. Some of the important *underlying causes* are also highlighted, as a good understanding of these causes is critical in order to address the issue of forest degradation.

Wild Fire

In Brong Ahafo Region, wild fire is by far the most serious problem that has a significant impact on forest degradation. Wildfire has become an annual phenomenon following the vast fire experienced in 1982/83. Over 60% of the FRs in the Region have had their structure and composition adversely affected by wildfire¹⁵. Between January 2000 and April 2001, there were 173 fire incidences in off-FRs burning 3,173ha, and 14 fire incidences in FRs burning 5,828ha reported in Brong Ahafo Region. The total estimated cost of damage was over 1.3 billion cedis¹⁶. Wildfire has been a serious hindrance on natural regeneration in Brong Ahafo, which should occur more easily given the climatic and soil conditions. While there are many causes of fire breakout, generally it is understood that hunting and agriculture are the main causes. Fire prevention and fire fighting efforts have been facing difficulties, although fire volunteer squads have been formed in communities and have been trained by the Forest Service. Ineffective law enforcement has also been attributing to the frequent occurrence of forest fire.

¹⁵ FSD Brong Ahafo Regional Office. *Plantation Plan for Brong Ahafo Region*.

¹⁶ Environmental Conservation Unit and Rural Fire Directorate, 2002. *Annual Report on Incidence of Bushfires in Ghana (January 2000-April 2001)*.

Difficulty in Implementing Plantation Development

Difficulty in implementing plantation development was another important problem identified by the workshop participants. Since the large-scale nation-wide program of plantation development has just begun in 2002, it may be too early to make a holistic assessment on the true problems on the ground. However, there are many issues that must be addressed for the plantation development to succeed in the long term. These include the establishment of an adequate incentive mechanism for forest fringe communities, securing of financial resources for plantation development, and improvement of knowledge and awareness of forest fringe communities. Issues on land use and land tenure must also be addressed to enhance community and private sector involvement in plantation development. While it is important to put in place efforts to increase the forest cover, it must also be reminded that plantation development alone would not solve the problem of forest degradation, unless the pressure on the forest is not reduced and adequate management practice is put in place.

Underlying Causes

Analysis confirms that many of the issues that result in forest degradation, such as wildfire (caused by hunting), slash-and-burn agriculture, and illegal chainsaw operation, share a common root cause related to the socioeconomic condition of local people. More specifically, the situation that *forest fringe communities lack alternative livelihoods opportunities* is one of the most important root causes leading to forest degradation. Unless this problem is addressed, it would be difficult to manage forest resources sustainably, even if stricter law enforcement is put in place.

Apathy of the forest fringe communities, identified as one of the direct causes, can also be considered as a common root cause that has implication in many aspects. One of the important reasons why communities are not willing to cooperate with the government authorities is because they do not feel that they are stakeholders of the forest reserves. The land of the forest reserve is Stool Land, which is vested in the Stool on behalf of the community represented by the chief. However, all timber is vested in the President, which means the owners of the land cannot harvest timber without permission from the State. Furthermore, forest reserves are managed by FSD with little involvement of forest fringe communities except in the districts where collaborative resource management is being piloted. The fact that communities do not receive direct benefits in form of royalty does not help the situation (Refer section 3.5).

Ineffective law enforcement on the ground is another root cause commonly noted under the

problems of wildfire, illegal chainsaw operation, over cutting, and harvesting for firewood and charcoal production. This is also one of the reasons why forest fringe communities hesitate to cooperate, as they perceive that offenders are often set free without due punishment, and as they fear being victimized in the community when they report the offenders.

Local people have a sense of distrust on FC/FSD, due to the long history of the government managing the forest resources alone with little involvement of forest fringe communities. While government officers are aware of this issue, they lack professional expertise and experience on extension, or more generally, the skills to communicate and work with local people. Analysis also indicates that limited knowledge on law and regulations is an issue not just on part of the local people, but also for field staff of FSD. While the relationship is improving in some areas, for example where MTS is introduced, more needs to be done to create an environment in which government and local people can collaborate in forest management.

5. Project Strategy (proposed)

5.1 Focal Areas of the Project

In consideration of the impact on forest degradation, government's policy priority, and local people's view of importance, the following three areas have been identified as the focal areas for the technical cooperation project: (i) Wildfire prevention; (ii) Plantation development; and (iii) Communities' participation in forest management¹⁷.

5.2 Strategies

The project is designed adopting the strategies listed below, which have been proposed taking into consideration factors such as the benefits to the local people, on-going efforts in the Region, and sustainability.

¹⁷ Refer Annex 4 for details on the analysis.

Strategy 1: Provide Incentives to Protect Forest from Fire

In terms of wildfire, it is important to note that there are many on-going efforts in Brong Ahafo Region. Many of these efforts emphasize fire prevention and control. The efforts include, for example, the regional and district level coordination of relevant government offices such as FSD, Fire Service, Police, Information Service, National Disaster Management Organization, and Army through the establishment of a Task Force. There is also the 'Wildfire Management in the Transition Zone Project' funded by the Netherlands. In order to complement these existing efforts, the proposed project will place its emphasis on *alternative livelihoods and land use options that could provide incentives to the local people to protect forest from fire*. While specific activities are yet to be determined, these may include promotion of livelihood opportunities that could coexist with the forest, such as beekeeping, or land use plans that establish community forests within the forest reserve. It is anticipated that this strategy would enhance sustainability, as it will aim to create an environment in which people would have reasons to proactively protect the forest, instead of being regulated to do so.

Strategy 2: Present Successful Examples of Collaborative Forest Management

The Project takes the position that local people's participation in forest management is indispensable in order to restore and maintain the forest cover in Brong Ahafo Region. Local people should become a true stakeholder in forest management, and at the same time receive adequate benefit from forest resources. While there is an on-going effort in piloting CFM, there still exists a sense of distrust on FSD by the forest fringe communities. The project will complement the on-going efforts, and will aim to improve the collaborative relationship between the government and local people.

To this end, one important aspect that needs to be addressed is to *improve the knowledge and skills of the field workers who interact with local people*. In the current institutional setup, these field workers may include the Range Supervisors and Forest Guards of FSD, and when the new PDD is operationalized, the Zonal Plantation Managers and Assistant Plantation Managers may also be included. It is important for the field workers to gain 'human skills' in addition to the technical skills they have already obtained through professional training.

Development and management of plantations in the forest reserves can be considered as one component of the overall forest reserve management. It is likely that plantation development will be pursued by GOG given the high policy priority of the present administration. Hence, in terms of

plantation, the role of the Project will not be to 'implement' plantation development, but rather to assist the GOG so that its on-going efforts can be improved, and that the plantations can be maintained in the long term in high quality. The Project will aim at presenting *successful examples in which local people are proactively involved in forest management (including plantation), and in which they receive adequate returns from the resources they manage.*

Strategy 3: Learn from What Works

The project will plan its activities based on the assessment of the on-going efforts, *learning from what has worked and what has not worked in the local context.* Workshop results indicate that activities at the village level are well received by the communities and have better chances of success. The project will take this into consideration, by undertaking activities on-the-ground, while consolidating successful examples from the field and presenting recommendations at the district, regional and central levels. The project will also learn from on-going projects in the related fields, including those implemented in other regions, such as the FORUM Project in Volta. Knowledge and techniques gained from these projects will be applied where relevant, so as to improve the efficiency of project implementation.

6. Project Design

6.1 Project Site

(To be filled in after the Preparatory Study Mission)

Note: Suggested to cover the area managed by FSD Sunyani District Office (as agreed during the Fact Finding Mission). It is recommended that the Project should concentrate on the Forest Reserves (i.e., do not include Off-Forest Reserves) at least until when sufficient knowledge and expertise are gained through the initial years of project implementation.

6.2 Target Beneficiaries

(To be filled in after the Preparatory Study Mission)

Note: Suggested to be the forest fringe communities.

6.3 Overall Goal

(To be filled in after the Preparatory Study Mission)

6.4 Project Purpose

(To be filled in after the Preparatory Study Mission)

6.5 Outputs and Activities

(To be filled in after the Preparatory Study Mission)

6.6 Inputs

(To be filled in after the Preparatory Study Mission)

6.7 Important Assumptions and Risk Analysis

(To be filled in after the Preparatory Study Mission)

6.8 Preconditions and Prior Obligations

(To be filled in after the Preparatory Study Mission)

7. Project Management and Coordination

7.1 Organizational Structure for Project Management and Implementation

(To be filled in after the Preparatory Study Mission)

8. *Ex-Ante* Assessment

(To be filled in after the Preparatory Study Mission)

9. Reference Documents

- Agyeman, V. K. et. al. *Draft Report on Equitable Cost and Benefit Sharing in Plantation Development: Public Private and Local Community Partnerships in Ghana.*
- Environmental Conservation Unit and Rural Fire Directorate, 2002. *Annual Report on Incidence of Bushfires in Ghana (January 2000 - April 2001).*
- Forestry Commission, 2001. *Ghana Wood Industry and Log Export Ban Study.*
- Forest Plantation Development Center, 2003. *Overview of the National Forest Plantation Development Program.*
- FORUM, 2002. *Developing the Legal Framework for Collaborative Forest Management in the Republic of Ghana.*
- FSD Brong Ahafo Regional Office. *Plantation Plan for Brong Ahafo Region.*
- Ghana Forest Service. *National Forest Management Plan 1998-2002.*
- Plantation Strategy Development Horizontal Working Group, Forestry Commission, 2002. *Plantation Strategy for the Forestry Sector and the Forestry Commission (Draft version of November 2002).*
- Plantation Strategy Development Horizontal Working Group, Forestry Commission, 2002. *Proposal for the Establishment of a Plantation Development Division for the Forestry Commission.*

10. Annexes

Annex 1: Supplementary Tables

Table 1-1: Summary table of the forestry laws and policies

Table 1-2: Objectives of the Forest and Wildlife Policy of 1994

Table 1-3: Recent developments in the forest sector policy reform (as of April 2003)

Annex 2: Maps

Map 2-1: Locations of the forest reserves in Ghana

Map 2-2: Locations of the forest reserves in Brong Ahafo Region

Annex 3: Organizational Diagrams

Diagram 3-1: Forestry Commission

Diagram 3-2: Forest Services Division (FSD)

Diagram 3-3: FSD Brong Ahafo Regional Office and FSD Sunyani District Office

Diagram 3-4: FSD Resource Management Support Center

Diagram 3-5: Brong Ahafo Regional Coordinating Council

Diagram 3-6: Proposed structure of the new Plantation Development Division

Annex 4: Workshop Results

3. 調査団員・氏名

調査団構成

総括	須藤 和男 (JICA 森林・自然環境協力部)
森林保全・林業政策	増子 博 (JICA 国際協力専門員)
計画管理	田中 里美 (JICA 無償資金協力部)
計画分析・組織制度分析	吉田 裕紀子 (グローバル・リンク・マネージメント株)

4. 調査団行程

調査団行程及び調査団員構成

調査団行程

			総括、森林保全・林業政策、計画管理	計画分析/組織・制度分析
1	3月8日	土	東京発 アムステルダム着	
2	3月9日	日	アムステルダム発 アクラ着	
3	3月10日	月	事務所打ち合わせ、大蔵省表敬、土地森林省(MLF)表敬、Core Group協議	
4	3月11日	火	Core Group協議 / World Bank, オランダ大使館, DfID 協議	
5	3月12日	水	ブロン・アハフォ州スニヤニに移動、植林振興センター(FPDC)、ガーナ森林研究所(FORIG)、(3) 資源管理支援センター(RMSC)訪問	
6	3月13日	木	スニヤニ郡森林局・スニヤニ森林サービス局(FSD)表敬・協議 / サイト調査(移行帯保全林)	
7	3月14日	金	ワークショップ	
8	3月15日	土	ワークショップ	
9	3月16日	日	キンタンボFSD表敬 / サイト調査(北部サバナ帯)	
10	3月17日	月	Naja Davit製材工場訪問 / New Edubiase森林局表敬 / サイト調査(南部高木林帯)	アクラへ移動
11	3月18日	火	サイト調査(南部高木林帯) / アクラへ移動	ワークショップ結果整理
12	3月19日	水	Core Group協議	
13	3月20日	木	大使館、JICA事務所 報告 / アクラ発	大使館、JICA事務所 報告
14	3月21日	金	アムステルダム	統計資料収集(JICA、統計局等)
15	3月22日	土	東京着	資料整理 / 調査準備
16	3月23日	日		クマシへ移動
17	3月24日	月		植林振興センター聞き取り調査 / スニヤニへ移動
18	3月25日	火		ブロン・アハフォ州森林局、Tree Farmers Association(NGO)聞き取り調査 / 視察
19	3月26日	水		スニヤニ郡営林署、資源管理支援センター聞き取り調査
20	3月27日	木		Regional Coordinating Council、District Assembly 聞き取り調査
21	3月28日	金		村落調査
22	3月29日	土		村落調査
23	3月30日	日		アクラへ移動
24	3月31日	月		ヴォルタ州へ移動 / GTZプロジェクト視察
25	4月1日	火		GTZプロジェクト視察 / アクラへ移動
26	4月2日	水		FSD聞き取り調査、MLF調査結果報告
27	4月3日	木		JICA調査結果報告 / DfID聞き取り調査
28	4月4日	金		調査結果整理 / アクラ発
29	4月5日	土		アムステルダム
30	4月6日	日		東京着

5. 面会者リスト

面会者リスト

Ministry of Lands and Forestry

Mr.Kasim Kasanga Minister
Mr.Thomas Brohi Deputy Minister
Mr.Sanpsoh Aojei Acting Chief Director
Mr.Fredja Asyemai Technical Director (Forestry)

Ministry of Finance

Mr.C.D.Apatu Acting Director, External Resources Mobilization
(Bilateral Division)
Mr.E.A.Adjetey Officer in charge of Japan, External Resources
Mobilization (Bilateral Division)

Core-Group

Mr.F.K.Odoom Director, Policy Planning, Monitoring and
Evaluation,
Ministry of Lands and Forestry, ACCRA
Tel:+233-21-678306
Fax:+233-21-666801
E-mail:fkodoom@mlf-gh.com
Address:P.O.Box MB212,Accra

Mr.B.A.Gyamfi Donor Liaison, Forestry Commission

Mr.A.S.K. Boachie-Dapaah Chief Executive, Forestry Commission
Tel:+233-21-221315/675736
Fax:+233-21-228018
E-mail:forest@africaonline.com.gh
Address:P.O.Box MB434, Accra

Mr.F.S.Amoah Director, Forest Service Division, ACCRA
Mr.John E.Otoo Acting Executive Director, Forest Service Division,
ACCRA

Dr.Victor Agyeman Project Leader, Forest Plantation Development
Center

Tel:+233-27-871004/884882
E-mail:vagyeman@forig.org
victoragyeman@hotmail.com
Address:P.O.Box213 Ejisu, Kumasi

Mr.Michel Y.Pentsil Project Officer, Forest Plantation Development
Center

Tel:+233-27-871004
E-mail:mikepentsil@yahoo.com
Address:P.O.Box213 Ejisu, Kumasi

Mr.Oheneba A.Agyemang Acting Director, Resource Management Support
Center, KUMASI

Tel:+233-51-28525/22376/22377

Fax:+233-51-22687

E-mail:o-agyemang@hotmail.com

oheneba@forestry-ksi.org

Address:P.O.Box1457, Kumasi

Mr.M.O.Abebrese Director and Operation, Forest Service Division

Forestry Research Institute of Ghana (FORIG)

J.R Cobbinah Ph.D Director

Tel:+233-51-60122

Fax:+233-51-60121

E-mail:jcobbinah@forig.org

P.O.Box63, Kumasi

Resources Management Support Center (RMSC)

Mr.Kawadowo Roaiteng Manager, Plantation Team

Mr.Eric Ashong Office Manager, Administration

Forestry Services Division (FSD)

Mr.Kwakye Ameyaw Brong-Ahafo Regional Manager, SUNYANI

Mr.Yakubu Mohammed Sunyani District Manager, SUNYANI

Mr.Samuel Effah Regional Plantation Officer, SUNYANI

Kintampo Forest District Office

Mr.Awiti Kuwfover Awgri Plantation Manager

Mr.Lirasty Kenneth Assistant Plantation Manager

Naja David Sawmill

Mr.Nassib Hage Field of Transport/Forest Operation

New Adubiase Forest District Office

Ms.Diana Fiati Manager

Mr.G.N.A.Agana Staff

Takoradi Forest District Office

Mr.Richard Omusu Yumak Manager

Western Regional Forest Office

Mr.J.E.Manu Manager

Subri Industrial Plantation Co. Ltd.

Dr.A.B.Dua Acting Managing Director

Mr.J.W.Osei Plantation Manager

Regional Coordinating Council

Mr.Yawv Adjei Duffow Deputy Regional Minister

Mr.David B.Akuffo Director

College of Renewable Natural Resources (CRNR)

Mr.Lawrence B.Antwi Principal
Tel:+233-61-23461
Fax:+233-61-27125
Address:P.O.Box214, Sunyani

Asuwakwa Community

Mr.J.K.Taiwah Chairman
Address:P.O.Box29, Chiraa, Brong Ahafo

Aigbe Community

Mr.Nana Anthwy Kusi Chairman

Amangoase Community

Mr.Yaw Annor Chairman

Sewia Community

Mr.Steph Darkye Chairman

Buoku Community

Mr.David Sarfo Kantanka Chairman
Mr.Alex Amofah Secretary

Mablam Community

Mr.Haruma Agyarko Secretary

Police, SUNYANI

Mr.Jhonson R.Zu Deputy Supervisor

Ghana National Fire Service

Mr.J.K.Ahinsah Regional Inspectorate

Department of Community Development

Mr.K.Owusu Acheaw Deputy Regional Director
Ms.Lucy Adjai District Director

Ministry of Food and Agriculture

Mr.M.I.Lawtey Secretary

Africa 2000

Ms.Adisa Lansah Yakubu National Coordinator, ACCRA
Tel:+233773226
Fax:+233-213899
E-mail:africa20@ncs.com.gh
P.O.Box1423, Accra

The World Bank

Mr.Edward F. Dwumfour Natural/Environmental Resource Management
Specialist
Tel:+233-21-229681
Fax:+233-21-227887
E-mail:Edwumfour@worldbank.org
Address:P.O.Box M.27, Accra

Department for International Development (UK)

Mr. Matthias Rhein Team Leader
Tel: +233-21-7012404
Fax: +233-21-7012405
E-mail: matthias@hq.fcghana.com
P.O. Box M434, Accra

Royal Netherlands Embassy

Mr. Andre C. Vermeer First Secretary, Environmental Advisor
Tel: +233-21-773644/231991
Fax: +233-21-773655
E-mail: andre.vermeer@minbuza.nl
P.O. Box CT1647, Accra

German Technical Cooperation

Dr. Heinz Loos Agronomist/Team Leader
Tel: +233-61-27376
Fax: +233-61-27376
E-mail: gtzsun@ncs.com.gh
Address: P.O. Box 473, Sunyani

Ms. Lita Weidinger Agricultural Socioeconomist / Agricultural Services

E-mail: gtzsun@ncs.com.gh

Mr. Atta Agyepong

Desk Officer

Ms. Evelyn Gyamfi

Officer

JICA ガーナ事務所

高畑 恒雄

所長

小淵 伸司

次長

晋川 眞

所員

寺川 幸士

J I C A 専門家 (移行帯森林保全)

在ガナ日本大使館

浅井 和子

大使

窪田 博之

一等書記官