

## **APPENDICES**

## APPENDICES

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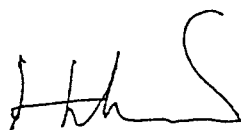
1.S/W and M/M

(1) S/W (19th March, 1997)

SCOPE OF WORK  
FOR  
THE STUDY  
ON  
THE RESERVE FOREST-MANAGEMENT IN TRANSITIONAL ZONE  
IN  
GHANA

AGREED UPON BETWEEN  
MINISTRY OF LANDS AND FORESTRY  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY

Accra, 19 March, 1997



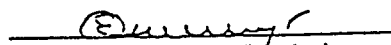
Mrs. Agnes M. Batsa  
Head  
Bilateral Unit  
International Economic Relations Division  
Ministry of Finance  
Ghana



Mr. Yoshihiko Watanabe  
Team Leader  
Preparatory Study Team  
Japan International Cooperation Agency  
Japan



Mr. E. Siisi-Wilson  
Deputy Technical Director  
Ministry of Lands and Forestry  
Ghana



Mr. Edward Osei Nsenkyire  
Chief Conservator of Forests  
Forestry Department  
Ministry of Lands and Forestry  
Ghana

## I. INTRODUCTION

In response to the request of the Government of the Republic of Ghana (hereinafter referred to as "the Government of Ghana"), the Government of Japan has decided to conduct the study on the Reserve Forest Management in Transitional Zone in Ghana (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of Ghana.

The present document sets forth the scope of work with regard to the Study.

## II. OBJECTIVES OF THE STUDY

The objectives of the Study are :

1. To develop and conduct a feasibility study on Forest Management Plan for degraded areas inside five forest reserves in transitional zone, and
2. To transfer technology in the course of the Study to the Ghanaian counterpart personnel.

## III. SCOPE OF THE STUDY

1. Study Area (See the location map attached as Annex I)

Transitional zone with a total area of approximately 300,000 ha, including five forest reserves (i.e. Sawsaw, Nsemre, Yaya, Tain I and Tain II).

2. Intensive Study Area (See the location map attached as Annex I)

Degraded forest sites with a total area of approximately 30,000 ha in the five forest reserves (whole area of Sawsaw, Nsemre, Yaya and Tain I and a part of Tain II).

3. Outline of the Study

The study will consist of the following two phases. Work plans in each phase are as follows.

### Work in Phase I

- (1) Aerial photographing in the Study Area (scale : 1/20,000).
- (2) Collection and analysis of general information on the Study Area.
  - a) Natural condition
  - b) Socio-economic condition
- (3) Preparation of land-use and vegetation map for the Study Area (scale : 1/50,000).

## Work in Phase II

- (1) Preparation of topographic maps for the five forest reserves (scale : 1/25,000).
- (2) Preparation of forest stand maps for the five forest reserves (scale : 1/25,000).
- (3) Collection and analysis of the data and information through a field survey on the following items in the Intensive Study Area
  - (a) Natural condition
  - (b) Socio-economic condition
- (4) Preparation of soil maps for the Intensive Study Area (scale : 1/25,000).
- (5) Preparation of Forest Management Plan including forest restoration, fire control and local involvement.
- (6) Assessments of the feasibility of the Forest Management Plan.
- (7) Preparation of Forest Management Maps for the Intensive Study Area (scale : 1/25,000).
- (8) Preparation of Forest Management Guidelines for forest reserves in transitional zone.

## IV. WORK SCHEDULE

The Study will be carried out in accordance with the attached tentative work schedule. (Annex-II).

## V. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Ghana.

1. Inception Report  
Twenty (20) copies at the beginning of phase I of the Study.
2. Progress Report  
Twenty (20) copies at the beginning of phase II of the Study.
3. Interim Report  
Twenty (20) copies at the middle of phase II of the Study.
4. Draft Final Report  
Twenty (20) copies at the later of phase II of the Study. The Government of Ghana will provide JICA with its comments on the Draft Final Report within one (1) month after receipt of the Draft Final Report.
5. Final Report  
Fifty (50) copies within two (2) months after receipt of the comments from the Government of Ghana on the Draft Final Report.

In addition to the above reports, one set each of the following are to be submitted to the Government of Ghana with relevant reports.

- (1) Aerial photographs of the Study Area (scale : 1/20,000; 1 set).
  - (a) Negative films
  - (b) Contact prints
- (2) Maps :
  - (a) Study Area
    - a) Land-use and vegetation map for the Study Area (scale : 1/50,000; 1set of original, 2sets of copy).
  - (b) Forest reserves
    - a) Topographic maps for the five forest reserves (scale : 1/25,000; 1set of original, 2sets of copy).
    - b) Forest stand maps for the five forest reserves (scale : 1/25,000; 1set of original, 2sets of copy).
  - (c) Intensive Study Area
    - a) Forest Management Maps for the Intensive Study Area (scale : 1/25,000; 1set of original, 2sets of copy).
    - b) Soil maps for the Intensive Study Area (scale : 1/25,000; 1set of original, 2sets of copy).

## VI. UNDERTAKING OF THE GOVERNMENT OF GHANA

1. In order to facilitate the smooth conduct of the Study, the Government of Ghana shall take necessary measures :
  - (1) to secure the safety of the Japanese study team,
  - (2) to permit the members of the Japanese study team to enter, leave and sojourn in Ghana for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees,
  - (3) to exempt the members of the Japanese study team from taxes, duties and other charges on equipment, machinery and other materials brought into Ghana for the conduct of the Study,
  - (4) to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study,
  - (5) to provide necessary facilities to the Japanese study team for remittance as well as utilization of the funds introduced into Ghana from Japan in connection with the implementation of the Study,
  - (6) to secure permission for entry into private properties or restricted areas for the implementation of the Study,
  - (7) to secure permission for the Japanese study team to take all data and documents

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(including maps and photographs) related to the Study out of Ghana to Japan; and

(8) to provide medical services as needed. Its expenses will be chargeable to members of the Japanese study team.

2. The Government of Ghana shall bear claims, if any arise against members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Japanese study team.
3. Ministry of Lands and Forestry are to be responsible for the overall management and the implementation of the Study, and shall act as a coordinating body in relation to other relevant Ghana authorities for the smooth implementation of the study.
4. Forestry Department shall act as a counterpart agency to the Japanese study team during the implementation of the Study.
5. Forestry Department shall, at its own expense, provide the Japanese study team with the following, in cooperation with other organizations concerned:
  - (1) available data and information related to the Study,
  - (2) counterpart personnel,
  - (3) suitable office spaces with necessary equipment in (Kumasi or Sunyani), and
  - (4) credentials or identification cards.

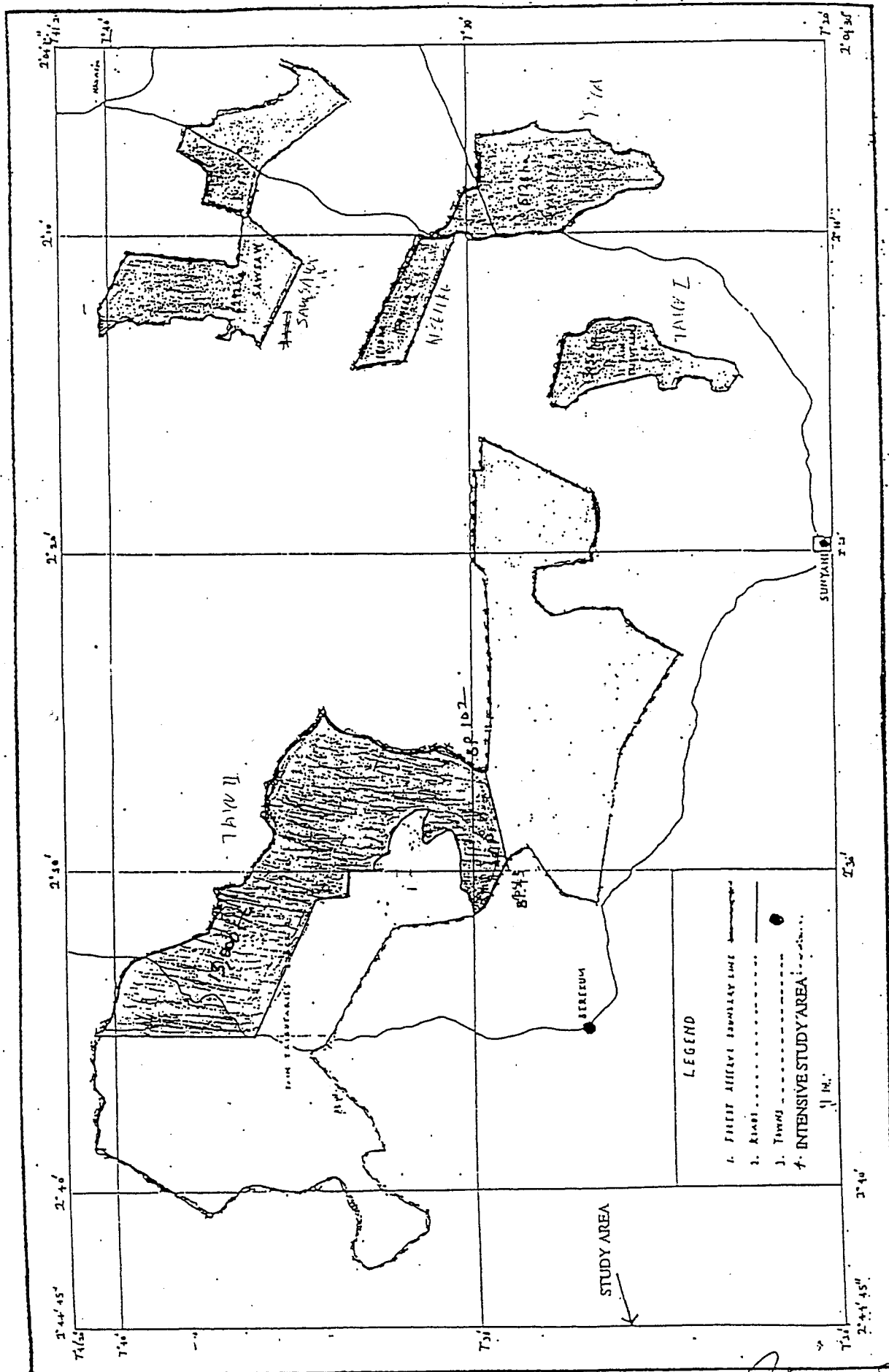
## VII. UNDERTAKING OF JICA

For the implementation of the study, JICA shall take the following measures;

- (1) To dispatch, at its own expense, the Study Teams to Ghana, and
- (2) To pursue technology transfer to the Ghanaian counterpart personnel in the course of the Study.

## VIII. OTHERS

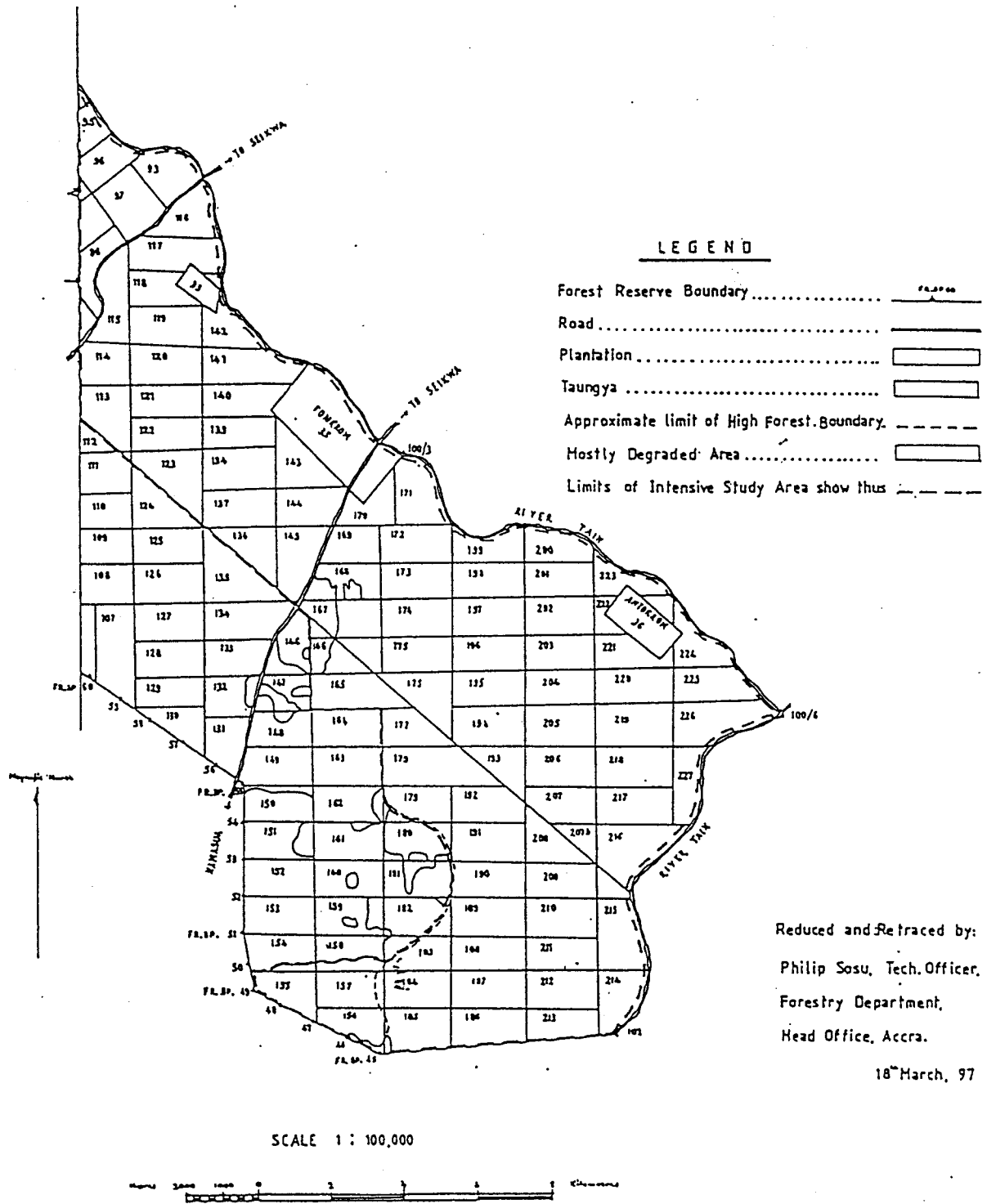
JICA and Ministry of Lands and Forestry shall consult with each other in respect of any matter that may arise from or in connection with the Study.



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# TAIN BLOCK II FOREST RESERVE PROGRESS MAP



Reduced and Retraced by:  
Philip Sosu, Tech. Officer,  
Forestry Department,  
Head Office, Accra.

18<sup>th</sup> March, 97

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TENTATIVE SCHEDULE

Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
The Study in Ghana																								
The Study in Japan																								
Reports																								
Phase																								

- IC/R : Inception Report
- PR/R : Progress Report
- IT/R : Interim Report
- DF/R : Draft Final Report
- F/R : Final Report

MAF 0.10.21

- (2) Minutes of Meetings (M/M)  
① M/M (19th March, 1997)

MINUTES OF MEETING  
ON  
SCOPE OF WORK  
FOR  
THE STUDY  
ON  
THE RESERVE FOREST MANAGEMENT IN TRANSITIONAL ZONE  
IN  
GHANA

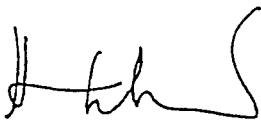
The preparatory study team (hereinafter referred to as "the Team" ) organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") headed by Mr. Yoshihiko Watanabe, visited the Republic of Ghana from March 10 to 20, 1997 for the purpose of discussing and confirming the Scope of Work for the Study on the Reserve Forest Management in Transitional Zone in Ghana (hereinafter referred to as "the Study").

The Team had a series of discussions with officials of the Ministry of Lands and Forestry and the Forestry Department (hereinafter referred to as "FD") on the Scope of Work for the Study.

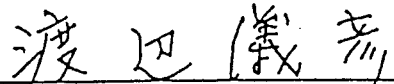
As a result of the discussions, FD and the Team agreed upon the Scope of Work for the Study.

The main issues discussed by the both sides in relation to the Scope of Work for the Study are shown in the Annex as attached hereto.

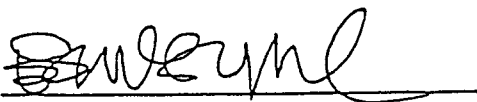
Accra, 19 March, 1997



Mrs. Agnes M. Batsa  
Head  
Bilateral Unit  
International Economic Relations Division  
Ministry of Finance  
Ghana



Mr. Yoshihiko Watanabe  
Team Leader  
Preparatory Study Team  
Japan International Cooperation Agency  
Japan



Mr. E. Siisi-Wilson  
Deputy Technical Director  
Ministry of Lands and Forestry  
Ghana



Mr. Edward Osei Nsenkyire  
Chief Conservator of Forests  
Forestry Department  
Ministry of Lands and Forestry  
Ghana

The following are the main issues discussed in relation to the Scope of Work for the Study:

1. Both sides agreed that FD Headquarters should be responsible for the Study and liaison with related organizations.
2. The Ministry of Lands and Forestry promised that after reforming FD, the Forest Service shall be the responsible body for the Study.
3. Both sides agreed that the comments of the Planning Branch should be given consideration through discussion with FD during the implementation of the Study.
4. Both sides agreed that the Intensive Study Area of TAIN II has been changed from Nsuatre-Odumasi Portion to Berékum-Namasua Portion of the reserve according to the field survey.
5. Both sides agreed that the Study should include a technology transfer seminar at the stage of explanation of the Draft Final Report to disseminate the results of the Study. The seminar is to be jointly organized by the Ghanaian side and the Japanese study team.
6. FD requested JICA through the Team to consider setting up necessary equipment for conducting the Study such as:
  - four-wheel drive vehicle(s)
  - photocopy machine(s)
  - personal computer(s)
  - transceiver(s)
  - other relevant equipment

The team promised to convey ~~the~~ request to the Government of Japan.

7. FD promised to provide the counterpart personnel to undertake the implementation of the Study in such areas as:

- Silviculture
- Rural forestry
- Vegetation Survey
- Soils
- Social-economic analysis
- Environment
- Aerial photography/land survey

8. FD requested for counterpart training in Japan, and the area of training should be related to the Study. The Team promised to convey the request to the Government of Japan.
9. FD requested that the work schedule should be reviewed to facilitate the local training of the counterpart staff.


② M/M (16th October, 1997)

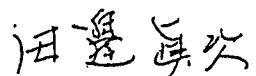
MINUTES OF MEETINGS  
ON  
THE INCEPTION REPORT  
OF  
THE STUDY  
ON  
THE RESERVE FOREST MANAGEMENT IN TRANSITIONAL ZONE  
IN  
GHANA

ACCRA, 16th OCTOBER, 1997

FORESTRY DEPARTMENT  
MINISTRY OF LANDS AND FORESTRY  
GHANA

JICA STUDY TEAM

  
Mr. EDWARD OSEI/NSENKYIRE  
CHIEF CONSERVATOR OF FORESTS

  
Mr. SHINJI TANABE  
TEAM LEADER

WITNESSED BY  
JICA ADVISORY TEAM

  
Mr. YOSHIHIKO WATANABE  
TEAM LEADER

In pursuance of the objective of the Scope of Work for the Study on the Reserve Forest Management in Transitional Zone (hereinafter referred to as "the Study") signed on the 19th of March, 1997, Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Study Team headed by Mr. Shinji Tanabe and the Advisory Team headed by Mr. Yoshihiko Watanabe, from the 8th to 17th of October, 1997.

The Study Team held the series of discussions with the Ghanaian authorities and counterparts headed by Mr. E.O. Nsenkyire, Chief Conservator of Forests of Forestry Department, the Ministry of Lands and Forestry (hereinafter referred to as "FD") from the 9th to 15th of October, 1997. The both sides agreed upon the following items:

1. The Study Team submitted twenty (20) copies of Inception Report (IC/R) to FD. FD accepted them with the following confirmation:
  - (1) The phrase in line 6-7, page 3 of IC/R, "while the rights of commercial exploitation of trees are reserved by the national government" should read "while the rights of commercial exploitation of trees are vested in the State".
  - (2) A phrase: "in accordance with the laws of Ghana" should be added at the end of the sentence in line 10-11, page 28 of IC/R.
2. FD suggested that the Study Team should take into account the information from the Environment Protection Agency at the time of conducting the Initial Environmental Examination (IEE). Both sides agreed upon the importance of environmental consideration in establishing the Forest Management Plan.

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## ANNEX

### LIST OF ATTENDANTS

#### FORESTRY DEPARTMENT

1. Mr. E.O. Nsenkyire	Chief Conservator of Forests	Forestry Department
2. Mr. A.S.K. Boachie-Dapaah	Deputy Chief Conservator of Forests	- ditto -
3. Mr. Twum Boateng	Plantations Officer	- ditto -
4. Mr. J.F. Anane	Socio-Economist	- ditto -
5. Mr. Oheneba A. Agyemang	Senior Conservator of Forests (Project Coordinator)	- ditto -
6. Mr. Maurice Nakaar	Principal Conservator of Forests	- ditto -
7. Mr. A.A. Ziblim	Regional Forestry Officer, Brong Ahafo	- ditto -

#### MINISTRY OF FINANCE

1. Mr. Kwasi Opoku	Desk Officer	International Economic Relations Division
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#### JICA STUDY TEAM

1. Mr. Shinji TANABE	Team Leader	JICA Study Team
	Forest Management Plan	- ditto -
2. Ms. Yasuko MATSUMI	Social/Gender Analysis	- ditto -
3. Mr. Hiromitsu KUNO	Natural Conservation/Environment	- ditto -
4. Mr. Tetsuya OHTSUKI	Aerial Photography/Survey Supervision	- ditto -
5. Mr. Hideaki SAKAI	Coordinator	- ditto -

#### JICA ADVISORY TEAM

1. Mr. Yoshihiko WATANABE	General Supervision	Director, Kyushu Tree Breeding Institute, Forestry Agency of Japan
2. Mr. Motofumi KOHARA		Director, Forestry and Fisheries Development Study Div., JICA Head Office
3. Dr. Takaaki KOMAKI	Social Forestry	Chief, Forest Management and Economics Laboratory, Hokkaido Research Center, Forestry and Forest Products Research Institute

#### JICA

1. Mr. Christopher Nnoyel	Programme Officer	JICA Ghana Office
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③ M/M (18th June, 1998)

**MINUTES OF MEETING  
FOR  
THE STUDY ON THE RESERVE FOREST MANAGEMENT  
IN TRANSITIONAL ZONE IN GHANA**

In pursuance of the Scope of Work of the Study on the Reserve Forest Management in Transitional Zone in Ghana (hereinafter referred to as "the Study") signed on March 19, 1997. Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Study Team to Ghana.

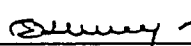
The Study Team headed by Mr. Shinji Tanabe, visited Ghana from June 10 to July 16, 1998, explained to and had series of discussions with the responsible officials headed by Mr. E. O. Nsenkyire, Chief Conservator of Forests, Forestry Department, Ministry of Lands and Forestry (hereinafter referred to as "FD") on the Progress Report of the Study.

The salient results of the discussions were as follows.

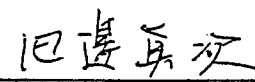
1. The Study Team submitted twenty (20) copies of Progress Report (PR/R) to FD. The FD side agreed in principle upon the contents of the Progress Report.
2. The discussed and agreed issues on the discussion of PR/R are as stated in the attachment.

The said issues were discussed and agreed upon by the FD and the Study Team in relation to the Study.

Accra, June 18, 1998

  
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**Mr. Edward Osei Nsenkyire**  
Chief Conservator of Forests  
Forestry Department  
Ministry of Lands and Forestry  
Ghana

  
\_\_\_\_\_

**Shinji Tanabe**  
Team Leader  
JICA Study Team

WITNESSED BY

  
\_\_\_\_\_

**Tetsuya Kamijo**  
Coordinator  
JICA Advisory Team

## Attachment

1. The demarcation of the Forest Reserves and the Intensive Study Area should be based on the aerial photos newly prepared by the JICA Study Team.
2. The compartmentalization shall be made to accommodate for planned activities regardless of the existing forest division standard.
3. The FD shall have the role in the plan implementation to mastermind and conduct the collaborative forest management through enhancing the participation of the private sector and local people.
4. In the Forest Reserves, Taungya system and other agroforestry approaches as well as firewood production shall be considered as necessary ones in the planned activities based on the needs of local people.
5. There was a request from the Ghanaian side to shorten the rotation age. The due consideration shall be paid in the planning with the reliable materials such as yield tables provided by the Ghanaian side.
6. There was a request from the Ghanaian side to adopt timber species including fast-growing species and indigenous species apart from the teak. The species selection shall be made by taking into account the needs of local people and the reliable materials provided by the Ghanaian side.
7. The existing plantation shall be included in the calculation of benefits in order to assess the feasibility of the project.
8. Targets of forest management plan should be reorganised to include protection of the forest, increased production of timber, firewood, NTFPs and agricultural produce to meet people's needs.
9. The forestry staff should be given education and training in planned activities to reform their attitude in working with the local people.
10. To organise the local people for the implementation of the plan, there is the need of development of the capacity of the local people.
11. Direct/Tangible benefits shall be calculated for the cost benefit analysis. Such direct benefits include timber, poles, firewood, NTFPs and agricultural produce. Indirect/Intangible benefits derived from the forest/plantation shall not be calculated but considered. The beneficial subject will be the manifestation of various effects of the forest/plantation on the environment, e.g. climate, soil and water, etc.

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Part

For

**MINUTES OF MEETING  
FOR  
THE STUDY ON THE RESERVE FOREST MANAGEMENT  
IN TRANSITIONAL ZONE IN GHANA**

in pursuance of the Scope of Work of the Study on the Reserve Forest Management in Transitional Zone in Ghana (hereinafter referred to as "the Study") signed on March 19, 1997. Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Study Team to Ghana.

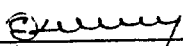
The Study Team headed by Mr. Shinji Tanabe, visited Ghana from February 16, to March 19, 1999, explained to and had series of discussions with the responsible officials headed by Mr. E. O. Nsenkyire, Chief Conservator of Forests, Forestry Department, Ministry of Lands and Forestry (hereinafter referred to as "FD") on the Interim Report of the Study.


The salient results of the discussions were as follows.

1. The Study Team submitted twenty (20) copies of Interim Report (IT/R) to FD. The FD side agreed in principle upon the contents of the Interim Report.
2. The discussed and agreed issues on the discussion of IT/R were described as in the attachment.

The said issues were discussed and agreed upon by the FD and the Study Team in relation to the Study.

Accra, February 25, 1999

  
\_\_\_\_\_  
**Mr. Edward Osei Nsenkyire**  
Chief Conservator of Forests  
Forestry Department  
Ministry of Lands and Forestry  
Ghana

  
\_\_\_\_\_  
**Shinji Tanabe**  
Team Leader  
JICA Study Team

**WITNESSED BY**

  
\_\_\_\_\_  
**Takaaki Komaki**  
Social Forestry  
JICA Advisory Team

## Attachment

### Industrial Plantation

1. It was reconfirmed that the mixing ratio of teak and ofram in industrial plantation should be teak 80% and ofram 20 % taking into consideration the site condition of the Intensive Study Area.
2. It was reconfirmed that thinning in industrial plantation should be done in accordance with the Silvicultural Regime presented by the Planning Branch, Forestry Department.
3. The period of taungya system shall be four(4) years, ~~just after the first thinning in addition to four(4) years at the initial stage, resulting in eight(8) years in total.~~
4. It was reconfirmed that the final cutting age of Teak should be thirty-five(35) years.
5. Heavy machinery such as bulldozer with ripper shall be used for land preparation in the appropriate portion of the industrial plantation.
6. It will be studied in the field survey that the seedlings of teak shall be raised bare-root and stumped for planting out in the field.

### Green Firebelt

7. It was reconfirmed that the width of green fire belt is forty(40) m inside the Forest Reserve and fruit trees can be grown in the green fire belt.
8. The tree species to be planted and the agricultural crops to be cultivated in the green fire belt are as follows.  
Fruit-tree species : avocado, mango, cashew, orange and sugar-apple  
Agricultural crops : maize, cocoyam, plantain and yam.
9. The extension of Green Firebelt into the area along the appropriate block boundaries in the Forest Reserve will be planned from the viewpoint of fire control, people's livelihood and cost reduction of forest roads.

10. Tree-fallow technology shall be adopted instead of Alley cropping.
11. Forestry Department shall not supply farmers with seeds of fruit trees for their own use.

**General**

12. Seedlings shall be produced once a year and should be ready for planting out in May to July
13. The introduction of profit-sharing rights between farmers and private companies or Forest Department regarding trees for final cutting shall be confirmed and the profit-sharing rate shall be studied by Forestry Department.
14. Forestry Department shall provide assistance in the establishment of Forest Management and Planning Committees in the villages in the Study Area, and also monitor their operations.
15. Forestry Department shall provide us with information on supporting measures for the private sector to invest in reforestation in the Intensive Study Area.
16. Project implementation schedule shall be the one referred to on Table VII-2-5, page 259 in the Interim Report .
17. It is necessary to set up Forest Management Project Center for the implementation of the Project.
18. Implementation bodies for each project component was agreed as described in the Table VII-4-1, page 289 in the Interim Report.

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*for*

**MINUTES OF MEETING  
FOR  
THE STUDY ON THE RESERVE FOREST MANAGEMENT  
IN TRANSITIONAL ZONE IN GHANA**

In pursuance of the Scope of Work of the Study on the Reserve Forest Management in Transitional Zone in Ghana (hereinafter referred to as "the Study") signed on March 19, 1997. Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Study Team to Ghana.

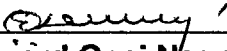
The Study Team headed by Mr. Shinji Tanabe, visited Ghana from August 2, to August 13, 1999, explained to and had a series of discussions with the responsible officials headed by Mr. E. O. Nsenkyire, Chief Conservator of Forests, Forestry Department, Ministry of Lands and Forestry (hereinafter referred to as "FD") on the Draft Final Report of the Study.


The salient results of the discussions were as follows.

1. The Study Team submitted twenty (20) copies of Draft Final Report (DF/R) to FD. The FD side agreed in principle upon the contents of the Draft Final Report.
2. The discussed and agreed issues on the discussion of DF/R were described as in the attachment.

The said issues were discussed and agreed upon by the FD and the Study Team in relation to the Study.

Accra, August 12, 1999

  
\_\_\_\_\_  
**Mr. Edward Osei Nsenkyire**  
Chief Conservator of Forests  
Forestry Department  
Ministry of Lands and Forestry  
Ghana

  
\_\_\_\_\_  
**Mr. Shinji Tanabe**  
Team Leader  
JICA Study Team

**WITNESSED BY**

  
\_\_\_\_\_  
**Mr. Motofumi Kohara**

JICA Advisory Team

## **Attachment**

### **1. Main Points of the Discussion and Agreement on the Draft Final Report**

- 1) From the viewpoint of importance of the bushfire control "Prevention and control of bushfire " was added as one of the Basic Targets.
- 2) Zoning based on activity range of local people was added in the proper categorization of land use to ensure the smooth participation of local people
- 3) The establishment of sustainable NTFPs tenure (or tenure site) was introduced as part of natural forest management.
- 4) The plan defined industrial plantation as production and utilization of forest resource based upon sustainable development, regardless of any implementation bodies.
- 5) Guidelines for formulation of forest management plan were presented as finalized ones as described in 4 - 7(2) of the Inception Report.

### **2. Comments on the Draft Final Report from Ghanaian Side**

The Ghanaian side will send its comments on the Report to JICA Head Office through JICA Ghana Office not later than 10 September, 1999.

### **3. Final Report**

Within two (2) months after receiving the comments, JICA will send fifty (50) copies of the Final Report to the Ghanaian side as described in the Scope of Work.

Both sides agreed that the Final Report would be open to any parties who are interested in the Study.

### **4. Study Equipment**

The Ghanaian side requested JICA to donate to FD the equipment (a desk top computer, a photocopy machine and a generator) used by the Study Team.

The Study Team explained the necessary procedure for the donation and agreed to convey the request to JICA.

### **5. Further Cooperation**

The Ghanaian side stressed the importance of restoration of the forest reserves and human resource development in furtherance of the cooperation.

( 3 ) Memorandum

① Memorandum (5th February, 1998)

FROM: JICA STUDY TEAM  
ON THE RESERVE FOREST  
MANAGEMENT TRANSITIONAL  
ZONE IN GHANA.

TO: FORESTRY DEPARTMENT  
MINISTRY OF LANDS &  
FORESTRY,  
ACCRA-GHANA.

DATE: 5TH FEBRUARY, 1998.

### MEMORANDUM

1. The Study Team submitted ten (10) copies of Field Report (1) to Forestry Department.
2. Technology Transfer Plan was finalized and presented after consultation with the counterparts. (attached with Field Report (1) Pg. 9).
3. Classification of Land use/Vegetation and Forest type was prepared by Study Team and discussed by the Study Team and the counterparts.

It was accepted by both sides. (attached with Field Report (1) Pg. 10, 11).

4. The Layout and history of topographic maps were accepted by the Study Team and the counterparts. It was decided however that the legend should be cross-checked with that of Planning Branch to ensure standardization.
5. At a meeting with the Environmental Protection Agency (EPA), The Study Team was advised not to conduct environmental impact assessment (EIA) but rather conduct the environmental survey in formulating the Forest Management Plan.

.....  
*Asik Boachie-Dapaah*

FOR

CHIEF CONSERVATOR OF FORESTS

( A S. K. BOACHIE -DAPAAH )

.....  
*Shinji Tanabe*

SHINJI TANABE  
(TEAM LEADER)



② Memorandum (2nd November, 1998)

FROM : JICA STUDY TEAM  
ON THE RESERVE FOREST  
MANAGEMENT TRANSITIONAL  
ZONE IN GHANA.

TO: FORESTRY DEPARTMENT  
MINISTRY OF LANDS AND FORESTRY  
ACCRA GHANA

DATE: 2<sup>ND</sup> NOVEMBER, 1998

## MEMORANDUM

1. The Study Team submitted ten (10) copies of Field Report (II) to Forestry Department
2. The Study Team explained to and had series of discussions with the counterparts on the basic matters of the components in <sup>the</sup> forest management plan (attached as annex 1)

The basic matters of the components in forest management plan <sup>were</sup> was accepted by both sides.

.....  
Chief Conservator of forests

.....  
Sinji TANABE  
(Team Leader)

## 1. Basic Matters of the Components of Forest Management Plan

The components mean "Basic components of Forest management Plan" in the Progress Report-V.1.4.

### (1) Plantation Establishment and Management

#### (A) Industrial Plantation:

- # The objective is to meet growing demand for timber in the near future.
- # Among the lands classified as Grassland in the Land Use and Vegetation Category, target areas are non-scattered but large collective ones suitable for afforestation inclusive of mechanical land preparation in slope. The concrete area shall be judged by the forest stand map and the aerial photograph interpretation.
- # Main planting species is teak, but line planting of Ofram, indigenous fast growing tree species, will be considered in teak stand in order to avoid mono-culture of teak (mixing rate: teak 80%, ofram 20%) from environmental viewpoint.
- # Planting density is 1,100 seedlings/ha.
- # Final cutting age is 35 in teak, 25 in ofram.
- # Improved taungya system should be introduced in order to give incentives for the people to tend and protect trees. Profit sharing system of mature forest stands will be agreed between the Forestry Department and participating farmers

#### (B) Community woodlot

- # The objective is to meet the needs of local people and to promote their participation in forest management
- # Of grass lands mentioned above, target areas are scattered ones with maximum area of 40 to 50 ha in the natural or the existing artificial forests.
- # The management system such as cutting age will differ depending on where they are located in natural or artificial forests or other specific location.
- # Main planting species are multi-purpose tree species including fuel wood species. The tree species should be selected from the tree species list that the Forestry Department recommend, taking into consideration the result of tree preference discussion in the socioeconomic survey and the needs of local people.
- # The introduction of agroforestry crops shall not be considered at present.

### (C) Green Fire Belt

- # The objective is to prevent and control bush fire and maintain the FR boundary.
- # Target areas are grass lands along FR boundary, block boundary, forest roads etc. and set up in the shape of belt.
- # Green fire belt(40m in width) will be established within the Forest Reserves in collaboration with local people. Those people are allowed to grow not only fire-tolerant species such as cassia siamea but multi-purpose species such as cashew, mango, orange etc. to meet their NTFP needs.
  - Trees planted and tended by farmers belong to them with specific cutting restriction
  - Farmers can choose tree species to be planted(from species provided by FD).
- # Some food crops can be grown to meet people's needs and provide them with incentives

### (2) Natural Forest Conservation and Utilization

Felling trees in the natural forests shall be prohibited except for burnt trees. In the gap sites with certain area in the natural forests, compensatory planting of indigenous tree species(for instance Wawa etc.) will be carried out. In order to determine the quantity of planting stock at the planning stage, a certain percentage of natural forest areas judged as very low in crown density will be used for calculation.

### (3) Seeds and Seedlings

#### (A) Establishment of nursery for industrial plantation and compensatory planting in natural forests

A middle or large scale accessible permanent nursery will be established outside the forest reserves. The improvement and expansion of the nursery in the School of Forestry, Sunyani, is one idea.

If it is not possible to establish the above mentioned nursery, a temporary nursery will be set up in each Forest Reserve.

#### (B) Establishment of nursery for the community woodlot and green fire belt

Community nursery, principally will be promoted in order to supply seedlings to be planted. Forest department may consider purchasing of seedlings raised by farmers.

The location of the nursery will be off reserve, but, when it is difficult, small

scale and simple nurseries will be set up in the forest reserves, where tree species not planned in Forest Management Plan shall be able to be raised for the local people's own use, which will be expected to be an incentive.

**(4) Infrastructure**

Forest roads, fire breaks and the like will be planned. In this case, cleared width of forest roads will be used as fire breaks.

**(5) Harvesting**

**(A) Plantation Trees**

Harvesting including thinning will be planned in the new and existing plantation according to the Silvicultural Regimes in MoP.

**(B) NTFP**

With a view to participatory management for sustainable collection of Bush meats, snail, medicinal herbs etc., the entrust of the actual operation in the collection to the communities will be considered.

Forest Department will ensure the right to collect NTFPs to the local communities for their domestic use, and freer access to NTFPs for commercial purposes by establishing community-based permit system.

**(6) Extension and Education (main subject : forest rehabilitation and fire control)**

**(A) People's Participation**

It will be considered how to involve local people in the management of forest reserves in the implementation stage of Forest Management Plan.

# Individual Participation

# Group Participation

**(B) Extension Work**

# Extension objective (local people, government officials and private sector)

# Improvement of extension institution

# Consideration of concrete extension items

**(C) Education**

# Consideration of education and training programs

### **(7) Management**

Cooperation among organizations concerned (people, administration, research organization and NGO etc.), implementation process, management and the like will be considered.

Each plan regarding (1) to (7) above mentioned, the component of Forest Management Plan, on the whole, will be prepared based on the basic matters.

### **(8) Project Benefit Expected**

Following benefits can be expected by the implementation of the Project:

- 1) Increase in Teak log production
- 2) Increase in thinned Teak log production for telegraph poles
- 3) Increase in agricultural production in the agro-forestry composed of on-farm and green belt with the introduction of Taungya method
- 4) Increase in fuel wood production
- 5) Prevention of bush fire by fire break and green belt
- (6) Poverty alleviation)
- (7) Environmental improvement)

③ Memorandum (18th March, 1999)

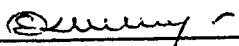
FROM: JICA STUDY TEAM  
ON THE RESERVE FOREST  
MANAGEMENT TRANSITIONAL  
ZONE IN GHANA

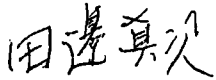
TO: FORESTRY DEPARTMENT  
MINISTRY OF LANDS &  
FORESTRY,  
ACCRA-GHANA

DATE: 18 TH MARCH, 1999.

### **MEMORANDUM**

1. The Study Team submitted ten(10) copies of Field Report(III) to Forestry Department.
2. The Study Team explained to and had discussions with the counterparts on the matters related to the Forest Management Plan.
3. Those matters were accepted by both sides. (attached herewith annex 1).

  
\_\_\_\_\_  
Mr. Edward Osei Nsenkyire  
CHIEF CONSERVATOR OF FORESTS

  
\_\_\_\_\_  
Mr. Shinji Tanabe  
TEAM LEADER OF  
JICA STUDY TEAM

**1. The location of taungya areas etc..**

The location of taungya areas, green fire belts and community woodlots will be set up within walking distance of people from their homes for their daily works.

**2. The areas other than those mentioned above 1.**

The areas other than those mentioned above 1 shall be the ones for industrial plantation, and there shall be established the firebreaks on the forest reserve boundaries and block boundaries by private companies themselves

**3. The profit sharing rate for calculation in the project evaluation.**

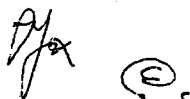
The said rate will be fixed for convenience at the rate of 80 % and 20 % respectively for private companies and for local people.

The real rate shall be decided at the stage of project implementation based on the consultation among the parties concerned such as Forestry Department.

**4. The yield calculation of Teak and Ofram for project cost calculation.**

#The stand volume of Teak(m<sup>3</sup>/ha) shall be based on the silvicultural regime and the result analyzed from the reference materials provided by the Planning Branch as reported in the appendix of the Progress Report.

#In case of Ofram, the growth rate(9 m<sup>3</sup>/ha/yr) referred in the reference materials used in the seminar of the Forestry Commission and the silvicultural regime shall be applied.

*AJ* 

2. List of Counterpart Personnel/Main Interviewees

(1) Counterpart Personnel

Areas	Name	Affiliation
Forest Management Plan	F.S.Amoah(Mr).(Cons.of Forests)	Planning Branch,Forestry Department(Kumasi)
	Oheneba A.Agyemang.(Mr) (Senior Cons.of Forests)	Forestry Department(Accra)
Social Forestry	J.F.Anane(Mr) (Principal Cons.of Forests)	Forestry Department(Accra)
	F.S.Amoah(Mr).Cons.of Forests	Planning Branch,Forestry Department(Kumasi)
	Paul Sowah(Mr). (Assist Cons.of Forses)	Planning Branch,Forestry Department(Kumasi)
Forest Inventory and Land-use/Vegetation Survey	F.Aguargo(Mr) (Cons.of Forests)	Planning Branch,Forestry Department(Kumasi)
Social/Gender Analysis	V.Kwablah(Ms) (Asst.Cons.of Forests)	Planning Branch,Forestry Department(Kumasi)
Soil Survey	J.E.Manu(Mr) (District Forstry officer)	Nkawie District Forestry office(Asante)
Nature Protection/ Environment	Maurice W.Nakaar(Mr) (Principal Cons.of Forests)	Regional Forestry Office (Sunyani)
	Paul Sowah(Mr). (Asst Cons.of Forses)	Planning Branch,Forestry Department(Kumasi)
Financial/Economic Evaluation	-ditto-	-ditto-
Aerial Photographing/ Surveying	F.Aguargo(Mr) (Cons.of Forests)	Planning Branch,Forestry Department(Kumasi)



## (2) Main Interviewees

### List of Main Interviewees and Attendance of Meetings

#### Governmental Organizations

##### Ministry of Finance & Economic Planning

Agnes Batsa	(Ms.) Head	Bilateral Economic Relations Unit, International Economic Relations
	(Chief Economic Planning Officer)	
Kwasi Opoku	(Mr.) Desk Officer (Japanese Desk) (Economic Planning Officer)	-ditto-
E. K. Nkansah	(Mr.) Assistant Desk Officer (Economic Planning Officer)	-ditto-

##### Ministry of Lands & Forestry: MLF

Nayon Bilijo	(Mr.) Deputy Minister	
E. Kofi Smith	(Mr.) Technical Director	Technical Directorate
E. Siisi-Wilson	(Mr.) Deputy Technical Director	-ditto-

##### Forestry Department: FD, MLF

Edward Osei Nsenkyire	(Mr.) (Chief Conservator of Forests)	-
A.S.K. Boachie-Dapaah	(Mr.) (Deputy Chief Conservator of Forests)	-
Oheneba Amponsah Agyemang	(Mr.) (Senior Conservator of Forests)	-
J.F. Anane	(Mr.) (Principal Conservator of Forests)	*

##### Planning Branch, FD

Ben Aninakwa	(Mr.) (Planning Officer)	-
Francis Sivester Amoah	(Mr.) (Conservator of Forests)	Management Unit
Fromics B. Agurgo	(Mr.) (Conservator of Forests)	Survey, Remote Sensing and Mapping Unit
Valerie Kawablah	(Ms.) (Assistant Conservator of Forests)	Collaborative Forest Management Unit
Twum Boateng	(Mr.) Plantation Officer	Plantation Unit
Paul Sawah	(Mr.) (Assistant Conservator of Forests)	-ditto-
Musah Abu-Juam	(Mr.) Forest Botanist/Ecologist	Botany Unit
Richrd Minnoni	(Mr.)	*
Bernard Tabil	(Mr.)	*
Fred Koromaerg	(Mr.)	*
Benjamin Adjel	(Mr.)	*
A. Asare	(Mr.)	*
Athuane Nyako	(Mr.)	*

##### Brong-Ahafo Region

David Osei-Wusu	(Mr.) Regional Minister	
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##### Regional Forestry Office, Brong Ahafo Region, FD

A. A. Ziblim	(Mr.) Regional Forest Officer	-
Maurice Nakaar	(Mr.) (Principal Conservator of Forests)	-

Samuel Akortie	(Mr.) District Forestry Officer	Sunyani Forest District
John Assabil	(Mr.) District Forestry Officer	Dormaa Forest District
School of Forestry, FD Lawrence B. Antwi	(Mr.) Principal	-
Forestry Research Institute, FD Joe R. Cobbinah	(Dr.) Deputy	-
Victor K. Agyemang	(Mr.) Ecologist/ Forest Management Specialist	*
Reynolds Okai	(Mr.) Research Scientist	Department of Timber Engineering
E. Owusu-Sekyere	(Mr.) Agroforester	*
Forests Products Inspection Bureau Kingstord E. Auaue	(Mr.) Senior Commercial Officer	*
Timber Export Development Board Alex B. Offei	(Mr.) Manager	*
Ministry of Trade & Industry Patrick A. Poku	(Mr.)	Management Information System Division
Wildlife Department, MLF Ofori Frimpong	(Mr.)	*
Survey Department, MLF E. S. Sai	(Mr.) Deputy Director	-
Environmental Protection Agency, Ministry of Environment, Science & Technology E. Dwumfour	(Mr.) Assistant Director	Natural Resources Department
Yaw Amoyaw-Osei	(Mr.) Ag. Head	Environmental Assessment & Audit Department
University of Science & Technology: UST Akwasi Owusu-Bi	(Dr.) Director	Bureau of Integrated Rural Development
S. J. Quashie-Sam	(Dr.) Director	Institute of Renewable Natural Resources
University of Ghana Kojo S. Amanor	(Dr.)	Institute of African Studies
<u>Nongovernmental Organizations</u>		
Theophilus K. Anderson	(Mr.) Director	Friends of the Earth Ghana
Oti Yeboah Complex LTD. J. E. Quansah	(Mr.) Production Manager	
Asuo Bomosadu Timbers Sawmills LTD.(ABTS)		
Eruest Apraku	(Mr.) Managing Director	
J. A. Kuffour	(Mr.) Forest Manager	
<u>International Organization</u>		
(United Kingdom) Natural Resources Institute Trevor Abell	(Mr.) Forestry Specialist	

(3) Composition of JICA Teams

① Composition of the Advisory Team

Name	Assignment	Organization
Yoshihiko Watanabe	General Supervision	Director, Kyushu Tree Breeding Institute, Forestry Agency
Takaaki Komaki	Social Forestry	Chief, Forest Management Laboratory, Hokkaido Branch, Forestry and Forest Products Research Institute

② Composition of the Study Team

Name	Work Assignment	Organization
Shinji TANABE	Team Leader/ Forest Management Plan	Japan Forest Technical Association (JAFTA)
Atsushi HISAMICHI	Social Forestry	Japan Forest Technical Association (JAFTA)
Junzo WATANABE	Forest Survey/ Land Use and Vegetation	Japan Forest Technical Association (JAFTA)
Yasuko MATSUMI (Ms.)	Social/Gender Analysis	Japan Forest Technical Association (JAFTA)
Teruji NAKAMURA	Soil Survey	Japan Forest Technical Association (JAFTA)
Hiromitsu KUNO	Natural Conservation/ Environment	Japan Forest Technical Association (JAFTA)
Kensuke IRIYA	Plan Evaluation	Sanyu Consultants Inc.
Tetsuya OHTSUKI	Aerial Photographing/ Survey Supervision	Pasco International Inc.
Hideaki SAKAI	Coordinator	Pasco International Inc.
Shuichi MIYABE	Coordinator	Japan Forest Technical Association (JAFTA)

### 3. Survey Contents

Item	Contents	Quantity
Areal Photography and Topographic Mapping	(Aerial Photography) Area Scale Flight Course Aerial Photographs (Ground Survey) GPS Survey Leveling (Topographic Mapping) Area Scale	300,000 ha 1/20,000 12 course 570 37points 250 km 67,000 ha 1/20,000
Land Use and Vegetation	(Preparation of Land Use and Vegetation Maps) Area Scale	300,000 ha 1/50,000
Forest Inventory Survey	( Sample Plot Survey for man-made forest) Plot size Plot Number (Sample Plot Survey for Natural forest) Plot size Plot Number (Plotless Sampling) Number (Preparation of Forest Stand Maps) Area Scale	20mx50m 24 plots 20mx500m 5 plots 17sites 67,000 ha 1/25,000
Soil Survey	(Soil Profile Survey) Soil Pit Survey Simple Pit Survey (Preparation of Soil Maps) Area Scale	31Pits 19Pits 30,000 ha 1/25,000
Socioeconomic Survey	(Base line Survey) Subject Village Subject Househould (Rapid Rural Appraisal ) Subject Village (Focus Group Meeting) Subject Village Subject Group	30 villages 400 Househould 6 Househould 6 Househould 4 Groups

# 4. Project Cost

## (1) Cash Flow by Work

Cost Flow (1): Industrial Plantation with Taungu

Year	Total										Private Company										Local People				Forestry Department				O&M L/C					
	Investment			L/C			O&M (L/C)				Investment			L/C			O&M (L/C)				Investment		L/C		Investment		L/C							
	Total	F/C	Other	Total	Unutilized Lab	Other	Total	Rent	Loyalty	Environment Consideration	Domestic Unutilized Lab	Total	F/C	Other	Total	Unutilized Lab	Other	Total	Rent	Loyalty	Environment Consideration	Domestic Unutilized Lab	L/C	Unutilized Lab	Total	F/C	Total	Unutilized Lab		Other	Unutilized Lab			
1	0	0	0	34,350,000	0	0	0	0	0	0	0	0	0	0	0	0	0	34,350,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	52,485,400	46,189,000	6,276,400	508,300	5,768,100	746,000	221,000	0	825,000	0	0	52,485,400	46,189,000	6,276,400	508,300	5,768,100	746,000	221,000	0	825,000	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	101,907,100	74,404,000	27,503,100	11,578,500	11,965,700	11,965,700	577,000	0	946,000	10,055,500	0	101,907,100	74,404,000	27,503,100	11,578,500	11,965,700	11,965,700	577,000	0	946,000	10,055,500	0	0	0	0	0	0	0	0	0	0	0	0	
4	194,463,800	137,731,000	46,732,900	25,225,300	21,507,500	43,495,500	1,236,000	0	1,914,000	40,339,500	180,754,200	194,463,800	137,731,000	46,732,900	25,225,300	21,507,500	43,495,500	1,236,000	0	1,914,000	40,339,500	180,754,200	0	0	0	0	0	0	0	0	0	0	0	
5	331,945,700	245,784,000	85,261,700	45,594,200	38,867,500	57,588,000	2,412,000	0	3,480,000	81,656,000	291,156,200	331,945,700	245,784,000	85,261,700	45,594,200	38,867,500	57,588,000	2,412,000	0	3,480,000	81,656,000	291,156,200	0	0	0	0	0	0	0	0	0	0	0	
6	302,887,600	185,174,000	117,713,600	80,359,400	37,354,200	105,734,000	3,298,000	0	3,450,000	158,986,000	185,174,000	302,887,600	185,174,000	117,713,600	80,359,400	37,354,200	105,734,000	3,298,000	0	3,450,000	158,986,000	185,174,000	0	0	0	0	0	0	0	0	0	0	0	0
7	167,062,200	85,690,000	81,372,200	59,950,600	21,421,600	244,341,000	3,708,000	0	2,890,000	237,743,000	106,054,600	167,062,200	85,690,000	81,372,200	59,950,600	21,421,600	244,341,000	3,708,000	0	2,890,000	237,743,000	106,054,600	0	0	0	0	0	0	0	0	0	0	0	0
8	236,905,800	180,158,000	56,747,800	29,288,600	27,459,200	256,917,000	4,570,000	0	3,979,000	248,368,000	209,599,800	236,905,800	180,158,000	56,747,800	29,288,600	27,459,200	256,917,000	4,570,000	0	3,979,000	248,368,000	209,599,800	0	0	0	0	0	0	0	0	0	0	0	0
9	182,268,200	100,738,000	81,628,200	58,517,800	23,010,400	281,124,000	5,052,000	0	3,303,000	272,789,000	124,857,000	182,268,200	100,738,000	81,628,200	58,517,800	23,010,400	281,124,000	5,052,000	0	3,303,000	272,789,000	124,857,000	0	0	0	0	0	0	0	0	0	0	0	0
10	106,578,600	62,282,000	46,398,600	32,786,600	13,610,000	329,944,000	5,350,000	0	3,196,000	321,398,000	76,577,400	106,578,600	62,282,000	46,398,600	32,786,600	13,610,000	329,944,000	5,350,000	0	3,196,000	321,398,000	76,577,400	0	0	0	0	0	0	0	0	0	0	0	0
11	158,295,800	118,712,000	39,583,800	21,153,200	18,430,600	337,483,000	5,918,000	0	3,855,000	321,719,000	138,448,000	158,295,800	118,712,000	39,583,800	21,153,200	18,430,600	337,483,000	5,918,000	0	3,855,000	321,719,000	138,448,000	0	0	0	0	0	0	0	0	0	0	0	0
12	44,701,600	0	44,701,600	37,828,800	6,872,800	394,946,000	5,918,000	0	2,880,000	372,182,000	6,872,800	44,701,600	0	44,701,600	37,828,800	6,872,800	394,946,000	5,918,000	0	2,880,000	372,182,000	6,872,800	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	390,983,000	5,918,000	0	6,610,000	2,760,000	365,895,000	0	0	0	0	0	0	390,983,000	5,918,000	0	6,610,000	2,760,000	365,895,000	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	323,667,000	5,918,000	11,898,000	2,263,000	303,588,000	0	0	0	0	0	0	0	323,667,000	5,918,000	11,898,000	2,263,000	303,588,000	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	305,151,500	5,918,000	21,152,000	2,513,000	335,599,500	0	0	0	0	0	0	0	305,151,500	5,918,000	21,152,000	2,513,000	335,599,500	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	346,866,000	5,918,000	25,798,000	2,327,000	318,283,000	0	0	0	0	0	0	0	346,866,000	5,918,000	25,798,000	2,327,000	318,283,000	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	348,696,500	5,918,000	24,220,000	2,345,000	316,203,500	0	0	0	0	0	0	0	348,696,500	5,918,000	24,220,000	2,345,000	316,203,500	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	410,861,000	5,918,000	47,216,000	2,642,000	355,065,000	0	0	0	0	0	0	0	410,861,000	5,918,000	47,216,000	2,642,000	355,065,000	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	382,416,000	5,918,000	64,630,000	2,286,000	309,582,000	0	0	0	0	0	0	0	382,416,000	5,918,000	64,630,000	2,286,000	309,582,000	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	344,212,000	5,918,000	48,244,000	2,126,000	287,924,000	0	0	0	0	0	0	0	344,212,000	5,918,000	48,244,000	2,126,000	287,924,000	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	347,010,000	5,918,000	30,324,000	2,278,000	308,490,000	0	0	0	0	0	0	0	347,010,000	5,918,000	30,324,000	2,278,000	308,490,000	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	389,764,000	5,918,000	87,486,000	2,150,000	291,200,000	0	0	0	0	0	0	0	389,764,000	5,918,000	87,486,000	2,150,000	291,200,000	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	388,075,000	5,918,000	97,240,000	2,089,000	282,828,000	0	0	0	0	0	0	0	388,075,000	5,918,000	97,240,000	2,089,000	282,828,000	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	457,084,000	5,918,000	153,874,000	2,179,000	299,113,000	0	0	0	0	0	0	0	457,084,000	5,918,000	153,874,000	2,179,000	299,113,000	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	553,195,000	5,918,000	276,020,000	1,988,000	269,269,000	0	0	0	0	0	0	0	553,195,000	5,918,000	276,020,000	1,988,000	269,269,000	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	463,577,000	5,918,000	186,422,000	1,998,000	269,269,000	0	0	0	0	0	0	0	463,577,000	5,918,000	186,422,000	1,998,000	269,269,000	0	0	0	0	0	0	0	0	0	0	0	0
27	10,483,080	9,237,800	1,255,280	101,680	1,153,620	399,930,000	5,918,000	122,650,000	2,093,000	299,299,000	10,483,080	10,483,080	9,237,800	1,255,280	101,680	1,153,620	399,930,000	5,918,000	122,650,000	2,093,000	299,299,000	10,483,080	0	0	0	0	0	0	0	0	0	0	0	0
28	20,381,420	14,880,800	5,500,620	3,107,480	2,393,140	519,354,000	5,918,000	242,004,000	2,163,000	269,299,000	17,437,700	20,381,420	14,880,800	5,500,620	3,107,480	2,393,140	519,354,000	5,918,000	242,004,000	2,163,000	269,299,000	17,437,700	0	0	0	0	0	0	0	0	0	0	0	0
29	36,892,760	27,548,200	9,345,560	5,045,060	4,301,500	495,548,200	5,918,000	211,954,000	2,356,000	276,320,200	32,150,840	36,892,760	27,548,200	9,345,560	5,045,060	4,301,500	495,548,200	5,918,000	211,954,000	2,356,000	276,320,200	32,150,840	0	0	0	0	0	0	0	0	0	0	0	0
30	66,209,140	49,156,800	17,052,340	9,318,840	7,733,500	548,625,300	5,918,000	259,704,000	2,648,000	290,355,300	57,431,260	66,209,140	49,156,800	17,052,340	9,318,840	7,733,500	548,625,300	5,918,000	259,704,000	2,648,000	290,355,300	57,431,260	0	0	0	0	0	0	0	0	0	0	0	0
31	80,577,520	57,034,800	23,542,720	16,071,680	7,470,940	672,371,500	5,918,000	287,998,000	2,640,000	295,615,500	44,913,200	80,577,520	57,034,800	23,542,720	16,071,680	7,470,94																		



Cost Flow (3) : Green Fire Belts

(Unit: Cedis)

Year	Total																					
	Investment					O&M L/C	Private Company					O&M L/C	Local People				Forestry Department					
	Total	F/G	L/C				Total	F/G	L/C				Total	L/C			Total	F/G	L/C			O&M L/C
			Total	Unskilled Lab	Other	Total			Unskilled Lab	Other	Total	Unskilled Lab		Others	Unskilled Lab	Total			Unskilled Lab	Other	Unskilled Lab	
1	335,600	1,200	334,400	247,600	86,800	0	0	0	0	0	0	0	182,000	182,000	0	0	153,600	1,200	152,400	65,600	86,800	
2	3,854,200	13,200	3,841,000	2,870,200	970,800	175,000	0	0	0	0	0	0	2,164,600	2,148,600	16,000	175,000	1,689,800	13,200	1,676,600	721,600	954,800	
3	4,809,000	10,800	4,798,200	3,841,000	957,200	1,925,000	0	0	0	0	0	0	3,426,600	3,250,600	176,000	1,925,000	1,382,400	10,800	1,371,600	590,400	781,200	
4	11,028,000	34,200	10,993,800	8,376,000	2,617,800	3,500,000	0	0	0	0	0	0	6,850,400	6,506,400	144,000	3,500,000	4,377,600	34,200	4,343,400	1,869,800	2,473,800	
5	10,171,500	19,800	10,151,700	8,263,500	1,888,200	8,487,500	0	0	0	0	0	0	7,637,100	7,181,100	456,000	8,487,500	2,534,400	19,800	2,514,600	1,082,400	1,432,200	
6	8,220,300	19,800	8,200,500	6,504,300	1,696,200	11,375,000	0	0	0	0	0	0	5,685,900	5,421,900	264,000	11,375,000	2,534,400	19,800	2,514,600	1,082,400	1,432,200	
7	11,196,500	28,200	11,168,300	8,864,500	2,303,800	14,282,500	0	0	0	0	0	0	7,586,900	7,322,900	264,000	14,282,500	3,609,600	28,200	3,581,400	1,541,600	2,039,800	
8	11,169,900	18,000	11,151,900	9,284,700	1,867,200	18,375,000	0	0	0	0	0	0	8,865,900	8,300,700	565,200	18,375,000	2,304,000	18,000	2,286,000	984,000	1,302,000	
9	8,222,500	9,600	8,212,900	7,123,700	1,089,200	21,000,000	0	0	0	0	0	0	6,993,700	6,598,900	394,800	21,000,000	1,228,800	9,600	1,219,200	524,800	694,400	
10	15,467,400	30,600	15,436,800	12,605,200	2,831,600	22,400,000	0	0	0	0	0	0	11,550,600	10,932,400	618,200	22,400,000	3,916,800	30,600	3,886,200	1,672,800	2,213,400	
11	7,789,500	0	7,789,500	7,097,700	691,800	26,862,500	0	0	0	0	0	0	7,789,500	7,097,700	691,800	26,862,500	0	0	0	0	0	
12	5,296,200	0	5,296,200	5,012,400	283,800	26,862,500	0	0	0	0	0	0	5,296,200	5,012,400	283,800	26,862,500	0	0	0	0	0	
13	6,632,300	0	6,632,300	6,133,500	498,800	26,862,500	0	0	0	0	0	0	6,632,300	6,133,500	498,800	26,862,500	0	0	0	0	0	
14	6,900,000	0	6,900,000	6,564,600	335,400	26,862,500	0	0	0	0	0	0	6,900,000	6,564,600	335,400	26,862,500	0	0	0	0	0	
15	6,981,900	0	6,981,900	6,599,200	382,700	26,862,500	0	0	0	0	0	0	6,981,900	6,599,200	382,700	26,862,500	0	0	0	0	0	
16	7,410,900	0	7,410,900	6,830,400	580,500	26,862,500	0	0	0	0	0	0	7,410,900	6,830,400	580,500	26,862,500	0	0	0	0	0	
17	5,943,800	0	5,943,800	5,801,900	141,900	26,862,500	0	0	0	0	0	0	5,943,800	5,801,900	141,900	26,862,500	0	0	0	0	0	
18	6,224,200	0	6,224,200	5,914,300	309,900	26,862,500	0	0	0	0	0	0	6,224,200	5,914,300	309,900	26,862,500	0	0	0	0	0	
19	7,932,300	0	7,932,300	7,715,100	217,200	26,862,500	0	0	0	0	0	0	7,932,300	7,715,100	217,200	26,862,500	0	0	0	0	0	
20	9,081,200	0	9,081,200	8,733,100	348,100	26,862,500	0	0	0	0	0	0	9,081,200	8,733,100	348,100	26,862,500	0	0	0	0	0	
21	6,493,200	0	6,493,200	6,112,200	381,000	26,862,500	0	0	0	0	0	0	6,493,200	6,112,200	381,000	26,862,500	0	0	0	0	0	
22	6,245,800	0	6,245,800	6,084,100	161,700	26,862,500	0	0	0	0	0	0	6,245,800	6,084,100	161,700	26,862,500	0	0	0	0	0	
23	7,107,300	0	7,107,300	6,687,800	419,500	26,862,500	0	0	0	0	0	0	7,107,300	6,687,800	419,500	26,862,500	0	0	0	0	0	
24	5,884,100	0	5,884,100	5,582,300	301,800	26,862,500	0	0	0	0	0	0	5,884,100	5,582,300	301,800	26,862,500	0	0	0	0	0	
25	10,784,700	0	10,784,700	10,216,100	568,600	26,862,500	0	0	0	0	0	0	10,784,700	10,216,100	568,600	26,862,500	0	0	0	0	0	
26	6,014,700	0	6,014,700	5,481,000	533,700	26,862,500	0	0	0	0	0	0	6,014,700	5,481,000	533,700	26,862,500	0	0	0	0	0	
27	5,296,200	0	5,296,200	5,012,400	283,800	26,862,500	0	0	0	0	0	0	5,296,200	5,012,400	283,800	26,862,500	0	0	0	0	0	
28	6,632,300	0	6,632,300	6,133,500	498,800	26,862,500	0	0	0	0	0	0	6,632,300	6,133,500	498,800	26,862,500	0	0	0	0	0	
29	6,900,000	0	6,900,000	6,564,600	335,400	26,862,500	0	0	0	0	0	0	6,900,000	6,564,600	335,400	26,862,500	0	0	0	0	0	
30	6,981,900	0	6,981,900	6,599,200	382,700	26,862,500	0	0	0	0	0	0	6,981,900	6,599,200	382,700	26,862,500	0	0	0	0	0	
31	7,410,900	0	7,410,900	6,830,400	580,500	26,862,500	0	0	0	0	0	0	7,410,900	6,830,400	580,500	26,862,500	0	0	0	0	0	
32	5,943,800	0	5,943,800	5,801,900	141,900	26,862,500	0	0	0	0	0	0	5,943,800	5,801,900	141,900	26,862,500	0	0	0	0	0	
33	6,224,200	0	6,224,200	5,914,300	309,900	26,862,500	0	0	0	0	0	0	6,224,200	5,914,300	309,900	26,862,500	0	0	0	0	0	
34	7,932,300	0	7,932,300	7,715,100	217,200	26,862,500	0	0	0	0	0	0	7,932,300	7,715,100	217,200	26,862,500	0	0	0	0	0	
35	9,081,200	0	9,081,200	8,733,100	348,100	26,862,500	0	0	0	0	0	0	9,081,200	8,733,100	348,100	26,862,500	0	0	0	0	0	
36	6,493,200	0	6,493,200	6,112,200	381,000	26,862,500	0	0	0	0	0	0	6,493,200	6,112,200	381,000	26,862,500	0	0	0	0	0	
37	6,245,800	0	6,245,800	6,084,100	161,700	26,862,500	0	0	0	0	0	0	6,245,800	6,084,100	161,700	26,862,500	0	0	0	0	0	
38	7,107,300	0	7,107,300	6,687,800	419,500	26,862,500	0	0	0	0	0	0	7,107,300	6,687,800	419,500	26,862,500	0	0	0	0	0	
39	5,884,100	0	5,884,100	5,582,300	301,800	26,862,500	0	0	0	0	0	0	5,884,100	5,582,300	301,800	26,862,500	0	0	0	0	0	
40	10,784,700	0	10,784,700	10,216,100	568,600	26,862,500	0	0	0	0	0	0	10,784,700	10,216,100	568,600	26,862,500	0	0	0	0	0	
41	6,014,700	0	6,014,700	5,481,000	533,700	26,862,500	0	0	0	0	0	0	6,014,700	5,481,000	533,700	26,862,500	0	0	0	0	0	
42	5,296,200	0	5,296,200	5,012,400	283,800	26,862,500	0	0	0	0	0	0	5,296,200	5,012,400	283,800	26,862,500	0	0	0	0	0	
43	6,632,300	0	6,632,300	6,133,500	498,800	26,862,500	0	0	0	0	0	0	6,632,300	6,133,500	498,800	26,862,500	0	0	0	0	0	
44	6,900,000	0	6,900,000	6,564,600	335,400	26,862,500	0	0	0	0	0	0	6,900,000	6,564,600	335,400	26,862,500	0	0	0	0	0	
45	6,981,900	0	6,981,900	6,599,200	382,700	24,937,500	0	0	0	0	0	0	6,981,900	6,599,200	382,700	24,937,500	0	0	0	0	0	
46	7,410,900	0	7,410,900	6,830,400	580,500	25,287,500	0	0	0	0	0	0	7,410,900	6,830,400	580,500	25,287,500	0	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	335,350,900	185,400	335,165,500	305,154,500	30,011,000	1,065,050,000	0	0	0	0	0	0	311,619,700	295,019,300	16,600,400	1,065,050,000	23,731,200	185,400	23,545,800	10,135,200	13,410,600	0

Cost Flow (4) : Community Woodlots

(Unit: Cedis)

Year	Total						Private Company					Local People				Forestry Department						
	Total	F/C	Investment			O&M L/C	Total	F/C	Investment			O&M L/C	Investment			Total	F/C	Investment			O&M L/C	
			Total	Unskilled Lab.	L/C				Other	Total	Unskilled Lab.		L/C	Other	Total			Unskilled Lab.	Others	Unskilled Lab.		Total
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	7,683,600	7,600	7,676,000	7,250,400	425,600	0	0	0	0	0	0	6,916,000	6,916,000	0	767,600	7,600	760,000	334,400	425,600	0	0	
7	18,902,300	9,300	18,893,000	18,372,200	520,800	0	0	0	0	0	0	17,963,000	17,963,000	0	939,300	9,300	930,000	409,200	520,800	0	0	
8	19,611,900	7,900	19,604,000	19,161,600	442,400	0	0	0	0	0	0	18,814,000	18,814,000	0	797,900	7,900	790,000	347,600	442,400	0	0	
9	18,872,900	8,900	18,864,000	18,365,600	498,400	0	0	0	0	0	0	17,974,000	17,974,000	0	888,900	8,900	890,000	391,600	498,400	0	0	
10	20,122,900	8,900	20,114,000	19,615,600	498,400	0	0	0	0	0	0	19,224,000	19,224,000	0	898,900	8,900	890,000	391,600	498,400	0	0	
11	11,125,000	0	11,125,000	11,125,000	0	65,940,000	0	0	0	0	0	11,125,000	11,125,000	0	65,940,000	0	65,940,000	0	0	0	0	
12	0	0	0	0	0	58,323,300	0	0	0	0	0	0	58,323,300	0	58,323,300	0	58,323,300	0	0	0	0	
13	0	0	0	0	0	51,853,200	0	0	0	0	0	0	51,853,200	0	51,853,200	0	51,853,200	0	0	0	0	
14	0	0	0	0	0	44,564,100	0	0	0	0	0	0	44,564,100	0	44,564,100	0	44,564,100	0	0	0	0	
15	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
16	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
17	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
18	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
19	0	0	0	0	0	43,925,000	0	0	0	0	0	0	43,925,000	0	43,925,000	0	43,925,000	0	0	0	0	
20	0	0	0	0	0	45,412,500	0	0	0	0	0	0	45,412,500	0	45,412,500	0	45,412,500	0	0	0	0	
21	0	0	0	0	0	44,187,500	0	0	0	0	0	0	44,187,500	0	44,187,500	0	44,187,500	0	0	0	0	
22	0	0	0	0	0	45,062,500	0	0	0	0	0	0	45,062,500	0	45,062,500	0	45,062,500	0	0	0	0	
23	0	0	0	0	0	45,062,500	0	0	0	0	0	0	45,062,500	0	45,062,500	0	45,062,500	0	0	0	0	
24	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
25	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
26	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
27	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
28	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
29	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
30	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
31	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
32	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
33	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
34	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
35	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
36	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
37	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
38	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
39	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
40	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
41	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
42	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
43	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
44	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
45	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
46	0	0	0	0	0	37,275,000	0	0	0	0	0	0	37,275,000	0	37,275,000	0	37,275,000	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>96,318,600</b>	<b>42,600</b>	<b>96,276,000</b>	<b>93,890,400</b>	<b>2,385,600</b>	<b>1,591,357,600</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>92,016,000</b>	<b>92,016,000</b>	<b>0</b>	<b>4,302,600</b>	<b>42,600</b>	<b>4,260,000</b>	<b>1,874,400</b>	<b>2,385,600</b>	<b>0</b>	<b>0</b>	



Cost Flow (5) : Natural Conservation/Improvement

(Unit: Cedis)

Year	Total																					
	Total		Investment			O&M L/C	Total		Private Company			O&M L/C	Local People				O&M L/C	Forestry Department				O&M L/C
	F/C	Investment	L/C		Total		F/C	Investment			Investment			Total	L/C			Total	L/C		Total	
			Unskilled Lab.	Other		Unskilled Lab.		Unskilled Lab.	Other	Unskilled Lab.	Others	Unskilled Lab.	Unskilled Lab.		Other	Unskilled Lab.						
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
6	10,583,500	0	10,583,500	10,583,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7	14,396,000	0	14,396,000	13,847,000	549,000	6,252,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8	14,396,000	0	14,396,000	13,847,000	549,000	12,505,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9	14,396,000	0	14,396,000	13,847,000	549,000	18,757,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
10	15,471,700	0	15,471,700	14,922,700	549,000	25,010,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11	4,200,000	0	4,200,000	3,595,200	604,800	25,645,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12	0	0	0	0	0	19,393,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
13	0	0	0	0	0	13,140,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
14	0	0	0	0	0	6,888,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<b>Total</b>	<b>73,443,200</b>	<b>0</b>	<b>73,443,200</b>	<b>70,642,400</b>	<b>2,800,800</b>	<b>127,592,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		

Year	Total																			
	Total	F/C	Investment			O&M F/C	Private Company					O&M F/C	Local People		Forestry Department					
			Total	Unskilled Lab.	L/G Other		Total	F/C	Investment				Investment L/C	O&M L/C	Total	F/C	Investment			O&M F/C
									Total	Unskilled Lab.	Other						Total	Unskilled Lab.	Other	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	31,098,000	4,596,000	26,500,000	22,288,000	4,212,000	4,358,000	15,548,000	2,298,000	13,250,000	11,144,000	2,106,000	2,179,000	0	0	15,548,000	2,298,000	13,250,000	11,144,000	2,106,000	2,179,000
3	50,092,000	7,404,000	42,688,000	35,904,000	6,784,000	7,020,000	25,046,000	3,702,000	21,344,000	17,952,000	3,392,000	3,510,000	0	0	25,046,000	3,702,000	21,344,000	17,952,000	3,392,000	3,510,000
4	92,728,000	13,708,000	79,020,000	66,466,000	12,554,000	12,996,000	46,364,000	6,854,000	39,510,000	33,233,000	6,277,000	6,498,000	0	0	46,364,000	6,854,000	39,510,000	33,233,000	6,277,000	6,498,000
5	165,472,000	24,460,000	141,012,000	118,608,000	22,404,000	23,194,000	82,736,000	12,230,000	70,506,000	59,304,000	11,202,000	11,597,000	0	0	82,736,000	12,230,000	70,506,000	59,304,000	11,202,000	11,597,000
6	128,655,000	20,136,000	108,519,000	91,639,000	16,880,000	17,589,000	62,333,000	9,214,000	53,119,000	44,679,000	8,440,000	8,736,000	0	0	62,333,000	9,214,000	53,119,000	44,679,000	8,440,000	8,736,000
7	61,679,000	10,236,000	51,443,000	43,631,000	7,812,000	8,203,000	28,845,000	4,264,000	24,581,000	20,675,000	3,906,000	4,043,000	0	0	28,845,000	4,264,000	24,581,000	20,675,000	3,906,000	4,043,000
8	125,279,000	19,638,000	105,641,000	89,219,000	16,422,000	17,117,000	60,645,000	8,965,000	51,680,000	43,469,000	8,211,000	8,500,000	0	0	60,645,000	8,965,000	51,680,000	43,469,000	8,211,000	8,500,000
9	71,811,000	11,734,000	60,077,000	50,893,000	9,184,000	9,623,000	33,911,000	5,013,000	28,898,000	24,306,000	4,592,000	4,753,000	0	0	33,911,000	5,013,000	28,898,000	24,306,000	4,592,000	4,753,000
10	46,327,000	8,080,000	38,247,000	32,569,000	5,678,000	6,005,000	20,966,000	3,099,000	17,867,000	15,028,000	2,839,000	2,938,000	0	0	20,966,000	3,099,000	17,867,000	15,028,000	2,839,000	2,938,000
11	79,922,000	11,814,000	68,108,000	57,288,000	10,820,000	11,202,000	39,961,000	5,907,000	34,054,000	28,644,000	5,410,000	5,601,000	0	0	39,961,000	5,907,000	34,054,000	28,644,000	5,410,000	5,601,000
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	11,962,000	4,596,000	7,366,000	6,138,000	1,228,000	316,000	5,981,000	2,298,000	3,683,000	3,069,000	614,000	158,000	0	0	5,981,000	2,298,000	3,683,000	3,069,000	614,000	158,000
28	19,270,000	7,404,000	11,866,000	9,888,000	1,978,000	508,000	9,635,000	3,702,000	5,933,000	4,944,000	989,000	254,000	0	0	9,635,000	3,702,000	5,933,000	4,944,000	989,000	254,000
29	35,674,000	13,708,000	21,966,000	18,306,000	3,660,000	942,000	17,837,000	6,854,000	10,983,000	9,153,000	1,830,000	471,000	0	0	17,837,000	6,854,000	10,983,000	9,153,000	1,830,000	471,000
30	63,658,000	24,460,000	39,198,000	32,666,000	6,532,000	1,682,000	31,829,000	12,230,000	19,599,000	16,333,000	3,266,000	841,000	0	0	31,829,000	12,230,000	19,599,000	16,333,000	3,266,000	841,000
31	47,960,000	18,428,000	29,532,000	24,610,000	4,922,000	1,266,000	23,980,000	9,214,000	14,766,000	12,305,000	2,461,000	633,000	0	0	23,980,000	9,214,000	14,766,000	12,305,000	2,461,000	633,000
32	22,194,000	8,528,000	13,666,000	11,388,000	2,278,000	586,000	11,097,000	4,264,000	6,833,000	5,694,000	1,139,000	293,000	0	0	11,097,000	4,264,000	6,833,000	5,694,000	1,139,000	293,000
33	46,662,000	17,930,000	28,732,000	23,944,000	4,788,000	1,232,000	23,331,000	8,965,000	14,366,000	11,972,000	2,394,000	616,000	0	0	23,331,000	8,965,000	14,366,000	11,972,000	2,394,000	616,000
34	28,092,000	10,026,000	18,066,000	13,388,000	4,678,000	690,000	13,046,000	5,013,000	8,033,000	6,694,000	1,339,000	345,000	0	0	13,046,000	5,013,000	8,033,000	6,694,000	1,339,000	345,000
35	16,132,000	6,198,000	9,934,000	8,278,000	1,656,000	426,000	8,066,000	3,099,000	4,967,000	4,139,000	828,000	213,000	0	0	8,066,000	3,099,000	4,967,000	4,139,000	828,000	213,000
36	30,746,000	11,814,000	18,932,000	15,778,000	3,154,000	812,000	15,373,000	5,907,000	9,466,000	7,889,000	1,577,000	406,000	0	0	15,373,000	5,907,000	9,466,000	7,889,000	1,577,000	406,000
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,173,411,000	254,898,000	918,513,000	772,889,000	145,624,000	125,767,000	576,530,000	123,092,000	453,438,000	380,626,000	72,812,000	62,585,000	0	0	596,881,000	131,806,000	465,075,000	392,263,000	72,812,000	63,182,000

Cost Flow (7) : Seeding Production: Village Nersery

(Unit: Cedis)

Year	Total						Private Company						Local People			Forestry Department					
	Total	F/C	Investment			O&M F/C	Total	F/C	Investment			O&M	Investment		Total	F/C	Investment			O&M F/C	
			Total	Unskilled Lab.	Other				Total	Unskilled La	Other		Unskilled Lab.	F/C			Total	Unskilled Lab	Other		
																					L/C
1	88,000	0	88,000	88,000	0	3,000	0	0	0	0	0	88,000	3,000	0	0	0	0	0	0		
2	973,000	0	973,000	973,000	0	31,000	0	0	0	0	0	973,000	31,000	0	0	0	0	0	0		
3	796,000	0	796,000	796,000	0	25,000	0	0	0	0	0	796,000	25,000	0	0	0	0	0	0		
4	2,522,000	0	2,522,000	2,522,000	0	80,000	0	0	0	0	0	2,522,000	80,000	0	0	0	0	0	0		
5	1,460,000	0	1,460,000	1,460,000	0	46,000	0	0	0	0	0	1,460,000	46,000	0	0	0	0	0	0		
6	7,896,000	0	7,896,000	7,896,000	0	368,000	0	0	0	0	0	7,896,000	368,000	0	0	0	0	0	0		
7	10,989,000	0	10,989,000	10,989,000	0	492,000	0	0	0	0	0	10,989,000	492,000	0	0	0	0	0	0		
8	8,863,000	0	8,863,000	8,863,000	0	404,000	0	0	0	0	0	8,863,000	404,000	0	0	0	0	0	0		
9	10,923,000	0	10,923,000	10,923,000	0	484,000	0	0	0	0	0	10,923,000	484,000	0	0	0	0	0	0		
10	11,344,000	0	11,344,000	11,344,000	0	497,000	0	0	0	0	0	11,344,000	497,000	0	0	0	0	0	0		
11	1,551,000	0	1,551,000	1,551,000	0	49,000	0	0	0	0	0	1,551,000	49,000	0	0	0	0	0	0		
12	2,725,000	0	2,725,000	2,725,000	0	86,000	0	0	0	0	0	2,725,000	86,000	0	0	0	0	0	0		
13	1,833,000	0	1,833,000	1,833,000	0	58,000	0	0	0	0	0	1,833,000	58,000	0	0	0	0	0	0		
14	2,091,000	0	2,091,000	2,091,000	0	66,000	0	0	0	0	0	2,091,000	66,000	0	0	0	0	0	0		
15	3,172,000	0	3,172,000	3,172,000	0	100,000	0	0	0	0	0	3,172,000	100,000	0	0	0	0	0	0		
16	775,000	0	775,000	775,000	0	24,000	0	0	0	0	0	775,000	24,000	0	0	0	0	0	0		
17	1,696,000	0	1,696,000	1,696,000	0	54,000	0	0	0	0	0	1,696,000	54,000	0	0	0	0	0	0		
18	1,189,000	0	1,189,000	1,189,000	0	38,000	0	0	0	0	0	1,189,000	38,000	0	0	0	0	0	0		
19	1,909,000	0	1,909,000	1,909,000	0	60,000	0	0	0	0	0	1,909,000	60,000	0	0	0	0	0	0		
20	2,086,000	0	2,086,000	2,086,000	0	66,000	0	0	0	0	0	2,086,000	66,000	0	0	0	0	0	0		
21	887,000	0	887,000	887,000	0	28,000	0	0	0	0	0	887,000	28,000	0	0	0	0	0	0		
22	2,298,000	0	2,298,000	2,298,000	0	73,000	0	0	0	0	0	2,298,000	73,000	0	0	0	0	0	0		
23	1,652,000	0	1,652,000	1,652,000	0	52,000	0	0	0	0	0	1,652,000	52,000	0	0	0	0	0	0		
24	3,109,000	0	3,109,000	3,109,000	0	98,000	0	0	0	0	0	3,109,000	98,000	0	0	0	0	0	0		
25	2,922,000	0	2,922,000	2,922,000	0	92,000	0	0	0	0	0	2,922,000	92,000	0	0	0	0	0	0		
26	1,551,000	0	1,551,000	1,551,000	0	49,000	0	0	0	0	0	1,551,000	49,000	0	0	0	0	0	0		
27	2,725,000	0	2,725,000	2,725,000	0	86,000	0	0	0	0	0	2,725,000	86,000	0	0	0	0	0	0		
28	1,833,000	0	1,833,000	1,833,000	0	58,000	0	0	0	0	0	1,833,000	58,000	0	0	0	0	0	0		
29	2,091,000	0	2,091,000	2,091,000	0	66,000	0	0	0	0	0	2,091,000	66,000	0	0	0	0	0	0		
30	3,172,000	0	3,172,000	3,172,000	0	100,000	0	0	0	0	0	3,172,000	100,000	0	0	0	0	0	0		
31	850,000	0	850,000	850,000	0	27,000	0	0	0	0	0	850,000	27,000	0	0	0	0	0	0		
32	1,703,000	0	1,703,000	1,703,000	0	54,000	0	0	0	0	0	1,703,000	54,000	0	0	0	0	0	0		
33	1,325,000	0	1,325,000	1,325,000	0	42,000	0	0	0	0	0	1,325,000	42,000	0	0	0	0	0	0		
34	1,827,000	0	1,827,000	1,827,000	0	58,000	0	0	0	0	0	1,827,000	58,000	0	0	0	0	0	0		
35	2,106,000	0	2,106,000	2,106,000	0	67,000	0	0	0	0	0	2,106,000	67,000	0	0	0	0	0	0		
36	982,000	0	982,000	982,000	0	31,000	0	0	0	0	0	982,000	31,000	0	0	0	0	0	0		
37	2,284,000	0	2,284,000	2,284,000	0	72,000	0	0	0	0	0	2,284,000	72,000	0	0	0	0	0	0		
38	1,636,000	0	1,636,000	1,636,000	0	52,000	0	0	0	0	0	1,636,000	52,000	0	0	0	0	0	0		
39	3,227,000	0	3,227,000	3,227,000	0	102,000	0	0	0	0	0	3,227,000	102,000	0	0	0	0	0	0		
40	2,858,000	0	2,858,000	2,858,000	0	90,000	0	0	0	0	0	2,858,000	90,000	0	0	0	0	0	0		
41	1,551,000	0	1,551,000	1,551,000	0	49,000	0	0	0	0	0	1,551,000	49,000	0	0	0	0	0	0		
42	2,725,000	0	2,725,000	2,725,000	0	86,000	0	0	0	0	0	2,725,000	86,000	0	0	0	0	0	0		
43	1,833,000	0	1,833,000	1,833,000	0	58,000	0	0	0	0	0	1,833,000	58,000	0	0	0	0	0	0		
44	2,091,000	0	2,091,000	2,091,000	0	66,000	0	0	0	0	0	2,091,000	66,000	0	0	0	0	0	0		
45	3,172,000	0	3,172,000	3,172,000	0	100,000	0	0	0	0	0	3,172,000	100,000	0	0	0	0	0	0		
46	775,000	0	775,000	775,000	0	24,000	0	0	0	0	0	775,000	24,000	0	0	0	0	0	0		
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	128,066,000	0	128,066,000	128,066,000	0	4,711,000	0	0	0	0	0	128,066,000	4,711,000	0	0	0	0	0	0		





Cost Flow (10) - Infrastructure Development: Village Nursery

(Unit: Cedis)

Year	Total																				Private Company					Local People					Forestry Department				
	Investment					O&M					Total	F/C	Investment			O&M	Investment	L/C	Total	F/C	Investment		O&M												
	Total	F/C	L/C		Total	F/C	L/C	Total	Unskilled Lab	L/C			Total	F/C	L/C						Total	F/C		L/C	Total	F/C	L/C	Unskilled	Others						
			Unskilled Lab	Other																															
1	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000	0	0	0									0	0	0	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000											
2	55,227,000	39,995,000	15,232,000	2,018,000	13,214,000	552,000	400,000	152,000									552,000	400,000	152,000	55,227,000	39,995,000	15,232,000	2,018,000	13,214,000											
3	82,842,000	59,993,000	22,849,000	3,027,000	19,822,000	1,657,000	1,200,000	457,000									1,657,000	1,200,000	457,000	82,842,000	59,993,000	22,849,000	3,027,000	19,822,000											
4	82,842,000	59,993,000	22,849,000	3,027,000	19,822,000	3,314,000	2,400,000	914,000									3,314,000	2,400,000	914,000	82,842,000	59,993,000	22,849,000	3,027,000	19,822,000											
5	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000	4,971,000	3,600,000	1,371,000									4,971,000	3,600,000	1,371,000	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000											
6	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000	5,523,000	4,000,000	1,523,000									5,523,000	4,000,000	1,523,000	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000											
7	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000	6,075,000	4,399,000	1,676,000									6,075,000	4,399,000	1,676,000	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000											
8	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000	6,627,000	4,799,000	1,828,000									6,627,000	4,799,000	1,828,000	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000											
9	0	0	0	0	0	7,179,000	5,199,000	1,980,000									7,179,000	5,199,000	1,980,000	0	0	0	0	0											
10	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000	7,179,000	5,199,000	1,980,000									7,179,000	5,199,000	1,980,000	27,614,000	19,998,000	7,616,000	1,009,000	6,607,000											
11	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
12	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
13	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
14	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
15	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
16	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
17	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
18	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
19	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
20	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
21	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
22	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
23	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
24	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
25	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
26	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
27	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
28	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
29	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
30	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
31	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
32	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
33	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
34	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
35	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
36	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
37	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
38	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
39	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
40	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
41	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
42	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
43	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
44	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
45	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
46	0	0	0	0	0	7,732,000	5,599,000	2,133,000									7,732,000	5,599,000	2,133,000	0	0	0	0	0											
47	0	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0											
48	0	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0											
49	0	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0											
50	0	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0											
Total	386,595,000	279,969,000	106,626,000	14,126,000	92,500,000	321,429,000	232,760,000	88,669,000	0	0	0	0	0	0	0	0	321,429,000	232,760,000	88,669,000	386,595,000	279,969,000	106,626,000	14,126,000	92,500,000											

Cost Flow (11) : Infrastructure Development: Watchout Tower

(Unit: Ceds)

Year	Total																					
	Investment					O&M			Private Company					Local People			Forestry Department					
	Total	F/C	L/C		Other	Total	F/C	L/C	Total	F/C	Investment		O&M	Investment	L/C	O&M	Total	Investment		Total	O&M	
			Unskilled Lab								Total	Unskilled Lab						Other	Unskilled Lab		F/C	L/C
1	15,751,000	484,000	15,267,000			0	0	0									15,751,000	484,000	15,267,000	0	0	0
2	31,501,000	968,000	30,533,000			315,000	10,000	305,000									31,501,000	968,000	30,533,000	315,000	10,000	305,000
3	15,751,000	484,000	15,267,000			945,000	29,000	916,000									15,751,000	484,000	15,267,000	945,000	29,000	916,000
4	15,751,000	484,000	15,267,000			1,260,000	39,000	1,221,000									15,751,000	484,000	15,267,000	1,260,000	39,000	1,221,000
5	0	0	0			1,575,000	48,000	1,527,000									0	0	0	1,575,000	48,000	1,527,000
6	15,751,000	484,000	15,267,000			1,575,000	48,000	1,527,000									15,751,000	484,000	15,267,000	1,575,000	48,000	1,527,000
7	15,751,000	484,000	15,267,000			1,890,000	58,000	1,832,000									15,751,000	484,000	15,267,000	1,890,000	58,000	1,832,000
8	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
9	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
10	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
11	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
12	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
13	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
14	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
15	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
16	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
17	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
18	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
19	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
20	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
21	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
22	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
23	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
24	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
25	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
26	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
27	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
28	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
29	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
30	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
31	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
32	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
33	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
34	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
35	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
36	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
37	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
38	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
39	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
40	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
41	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
42	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
43	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
44	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
45	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
46	0	0	0			2,205,000	68,000	2,137,000									0	0	0	2,205,000	68,000	2,137,000
47	0	0	0			0	0	0									0	0	0	0	0	0
48	0	0	0			0	0	0									0	0	0	0	0	0
49	0	0	0			0	0	0									0	0	0	0	0	0
50	0	0	0			0	0	0									0	0	0	0	0	0
Total	110,256,000	3,388,000	106,868,000	0	0	93,555,000	2,884,000	90,671,000	0	0	0	0	0	0	0	0	110,256,000	3,388,000	106,868,000	93,555,000	2,884,000	90,671,000

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Year	Total									Private Company				Local People			Forestry Department							
	Total	F/C	Investment			Total	O&M		Total	F/C	Investment		O&M	Investment L/C	Local People		Total	F/C	Investment		O&M			
			Total	L/C	Unskilled Lab		Other	F/C			L/C	Total			Unskilled Lab	Other			Total	F/C		L/C	Unskilled Lab	Others
1	1,889,000	0	1,889,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2	8,544,000	0	8,544,000	0	0	133,000	0	133,000	0	0	0	0	133,000	0	133,000	0	0	1,889,000	0	1,889,000	0			
3	15,200,000	0	15,200,000	0	0	304,000	0	304,000	0	0	0	0	304,000	0	304,000	0	0	8,544,000	0	8,544,000	0			
4	10,434,000	0	10,434,000	0	0	512,000	0	512,000	0	0	0	0	512,000	0	512,000	0	0	15,200,000	0	15,200,000	0			
5	0	0	0	0	0	817,000	0	817,000	0	0	0	0	817,000	0	817,000	0	0	10,434,000	0	10,434,000	0			
6	0	0	0	0	0	817,000	0	817,000	0	0	0	0	817,000	0	817,000	0	0	0	0	0	0			
7	0	0	0	0	0	817,000	0	817,000	0	0	0	0	817,000	0	817,000	0	0	0	0	0	0			
8	1,889,000	0	1,889,000	0	0	817,000	0	817,000	0	0	0	0	817,000	0	817,000	0	0	1,889,000	0	1,889,000	0			
9	0	0	0	0	0	950,000	0	950,000	0	0	0	0	950,000	0	950,000	0	0	0	0	0	0			
10	6,655,000	0	6,655,000	0	0	950,000	0	950,000	0	0	0	0	950,000	0	950,000	0	0	6,655,000	0	6,655,000	0			
11	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
12	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
13	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
14	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
15	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
16	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
17	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
18	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
19	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
20	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
21	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
22	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
23	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
24	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
25	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
26	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
27	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
28	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
29	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
30	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
31	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
32	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
33	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
34	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
35	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
36	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
37	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
38	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
39	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
40	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
41	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
42	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
43	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
44	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
45	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
46	0	0	0	0	0	988,000	0	988,000	0	0	0	0	988,000	0	988,000	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Total	44,611,000	0	44,611,000	0	0	41,685,000	0	41,685,000	0	0	0	0	41,685,000	0	41,685,000	0	0	44,611,000	0	44,611,000	0			





## (2) Project Cost –Total-

### Summary of Total Financial Costs (Without Escalation)

(Unit: 1,000c)

Actor	Private Company Cost			Local People Cost			Forestry Department Cost			Total Cost		
	Investment	O &M	Total	Investmen	O &M	Total	Investmen	O &M	Total	Investment	O &M	Total
<b>Forest Management Activities</b>												
<b>Plantation Establishment &amp; Management</b>												
<b>Industrial Plantation with Taungya</b>												
Plantation & Wood Production	1,771,849	8,321,972	10,093,821	472,967	2,866,642	3,339,609	0	0	0	2,244,816	11,188,614	13,433,430
NTFP & Crop Production				0	11,835,450	11,835,450	0	0	0	0	11,835,450	11,835,450
Sub-total	1,771,849	8,321,972	10,093,821	472,967	14,702,092	15,175,059	0	0	0	2,244,816	23,024,064	25,268,880
<b>without Taungya</b>												
Plantation & Wood Production	2,348,370	5,082,009	7,430,379	0	0	0	0	0	0	2,348,370	5,082,009	7,430,379
Sub-total	2,348,370	5,082,009	7,430,379	0	0	0	0	0	0	2,348,370	5,082,009	7,430,379
Total	4,120,219	13,403,981	17,524,200	472,967	14,702,092	15,175,059	0	0	0	4,593,186	28,106,073	32,699,259
<b>Community Woodlots</b>												
Sub-total	0	0	0	92,016	1,591,358	1,683,374	4,303	0	4,303	96,319	1,591,358	1,687,677
Sub-total	0	0	0	92,016	1,591,358	1,683,374	4,303	0	4,303	96,319	1,591,358	1,687,677
<b>Green Fire Belts</b>												
Plantation & Wood Production	0	0	0	311,620	1,065,050	1,376,670	23,731	0	23,731	335,351	1,065,050	1,400,401
NTFP & Crop Production				0	2,101,383	2,101,383	0	0	0	0	2,101,383	2,101,383
Sub-total	0	0	0	311,620	3,166,433	3,478,053	23,731	0	23,731	335,351	3,166,433	3,501,784
Total	4,120,219	13,403,981	17,524,200	876,603	19,459,883	20,336,486	28,034	0	28,034	5,024,856	32,863,864	37,888,720
<b>Natural Forest Conservation / Improvement</b>												
<b>No.1 Enrichment Planting</b>												
Total	0	0	0	0	0	0	73,443	127,592	201,035	73,443	127,592	201,035
Total	0	0	0	0	0	0	73,443	127,592	201,035	73,443	127,592	201,035
<b>Seedling Production</b>												
<b>Central Nursery</b>												
Central Nursery	576,530	62,585	639,115	0	0	0	596,881	63,182	660,063	1,173,411	125,767	1,299,178
Village Nursery				128,066	4,711	132,777	0	0	0	128,066	4,711	132,777
Sub-total	576,530	62,585	639,115	128,066	4,711	132,777	596,881	63,182	660,063	1,301,477	130,478	1,431,955
Total	4,696,749	13,466,566	18,163,315	1,004,669	19,464,594	20,469,263	698,358	190,774	889,132	6,399,776	33,121,934	39,521,710
<b>Support &amp; Operation Activities</b>												
<b>Infrastructure Development</b>												
<b>Forest Road – Fire Break</b>												
Forest Road – Fire Break	4,401,590	3,162,007	7,563,597	0	0	0	0	0	0	4,401,590	3,162,007	7,563,597
Sub-total	4,401,590	3,162,007	7,563,597	0	0	0	0	0	0	4,401,590	3,162,007	7,563,597
<b>Nurseries &amp; Other Facilities</b>												
Central Nursery	0	0	0	0	0	0	1,295,104	2,343,240	3,638,344	1,295,104	2,343,240	3,638,344
Village Nurseries	0	0	0	0	321,429	321,429	386,595	0	386,595	386,595	321,429	708,024
Watchout Towers	0	0	0	0	0	0	110,256	93,555	203,811	110,256	93,555	203,811
Water Source Facilities	0	0	0	0	41,685	41,685	44,611	0	44,611	44,611	41,685	86,296
Sub-total	0	0	0	0	363,114	363,114	1,836,566	2,436,795	4,273,361	1,836,566	2,799,909	4,636,475
Total	4,401,590	3,162,007	7,563,597	0	363,114	363,114	1,836,566	2,436,795	4,273,361	6,238,156	5,961,916	12,200,072
<b>Extension &amp; Education</b>												
Direct Contact to Key Farmers	0	0	0	0	0	0	54,280	0	54,280	54,280	0	54,280
Workshops	0	0	0	0	0	0	992,510	0	992,510	992,510	0	992,510
On Site Training	0	0	0	0	0	0	164,197	0	164,197	164,197	0	164,197
Training Courses	0	0	0	0	0	0	954,325	0	954,325	954,325	0	954,325
Sub-total	0	0	0	0	0	0	2,165,312	0	2,165,312	2,165,312	0	2,165,312
<b>Support for People Participation</b>												
<b>NGO</b>												
NGO	0	0	0	0	0	0	129,800	0	129,800	129,800	0	129,800
Total	0	0	0	0	0	0	129,800	0	129,800	129,800	0	129,800
<b>Management Consultants</b>												
Management Consultants	0	0	0	0	0	0	1,267,800	0	1,267,800	1,267,800	0	1,267,800
Total	0	0	0	0	0	0	1,267,800	0	1,267,800	1,267,800	0	1,267,800
<b>Forest Management Planning Committee</b>												
Forest Management Planning Committee	0	0	0	0	0	0	149,760	0	149,760	149,760	0	149,760
Total	0	0	0	0	0	0	149,760	0	149,760	149,760	0	149,760
<b>Strengthening PG Management &amp; Operation</b>												
Strengthening PG Management & Operation	753,600	0	753,600	0	0	0	0	0	0	753,600	0	753,600
Total	753,600	0	753,600	0	0	0	0	0	0	753,600	0	753,600
<b>Forest Management Center</b>												
<b>Secretariat for Coordination &amp; Mediation</b>												
Secretariat for Coordination & Mediation	0	0	0	0	0	0	0	43,200	43,200	0	43,200	43,200
Total	0	0	0	0	0	0	0	43,200	43,200	0	43,200	43,200
Total	5,155,190	3,162,007	8,317,197	0	363,114	363,114	5,549,238	2,479,995	8,029,233	10,704,428	6,005,116	16,709,544
<b>Taxation &amp; Environmental Consideration</b>												
<b>Taxation</b>												
<b>Rent</b>												
Industrial Plantation with Taungya	0	239,472	239,472	0	0	0	0	0	0	0	239,472	239,472
Industrial Plantation without Taungya	0	240,437	240,437	0	0	0	0	0	0	0	240,437	240,437
Subtotal	0	479,909	479,909	0	0	0	0	0	0	0	479,909	479,909
<b>Loyalty</b>												
Industrial Plantation with Taungya	0	9,519,392	9,519,392	0	0	0	0	0	0	0	9,519,392	9,519,392
Industrial Plantation without Taungya	0	9,939,574	9,939,574	0	0	0	0	0	0	0	9,939,574	9,939,574
Subtotal	0	19,458,966	19,458,966	0	0	0	0	0	0	0	19,458,966	19,458,966
Total	0	19,938,875	19,938,875	0	0	0	0	0	0	0	19,938,875	19,938,875
<b>Environmental Consideration</b>												
Industrial Plantation with Taungya	0	150,190	150,190	0	0	0	0	0	0	0	150,190	150,190
Industrial Plantation without Taungya	0	74,304	74,304	0	0	0	0	0	0	0	74,304	74,304
Forest Road-Fire Break	0	75,636	75,636	0	0	0	0	0	0	0	75,636	75,636
Total	0	300,130	300,130	0	0	0	0	0	0	0	300,130	300,130
Total	0	20,239,005	20,239,005	0	0	0	0	0	0	0	20,239,005	20,239,005
Total	9,851,939	36,867,578	46,719,517	1,004,669	19,827,708	20,832,377	6,247,596	2,670,769	8,918,365	17,104,204	59,366,055	76,470,259

Summary of Total Financial Costs (Without Escalation) 1 US\$=2290c

(Unit: 1,000 US\$)

Actor	Private Company Cost		Local People Cost			Forestry Department Cost			Total Cost			
	Investmen	O &M	Total	Investmen	O &M	Total	Investmen	O &M	Total	Investmen	O &M	Total
<b>Forest Management Activities</b>												
<b>Plantation Establishment &amp; Management</b>												
<b>Industrial Plantation with Taungya</b>												
Plantation & Wood Production	774	3,634	4,408	207	1,252	1,458	0	0	0	980	4,886	5,866
NIFP & Crop Production	0	0	0	0	5,168	5,168	0	0	0	0	5,168	5,168
Sub-total	774	3,634	4,408	207	6,420	6,627	0	0	0	980	10,054	11,034
<b>without Taungya</b>												
Plantation & Wood Production	1,025	2,219	3,245	0	0	0	0	0	0	1,025	2,219	3,245
Sub-total	1,025	2,219	3,245	0	0	0	0	0	0	1,025	2,219	3,245
<b>Total</b>												
Community Woodlots	0	0	0	40	695	735	2	0	2	42	695	737
Sub-total	0	0	0	40	695	735	2	0	2	42	695	737
<b>Green Fire Belts</b>												
Plantation & Wood Production	0	0	0	136	465	601	10	0	10	146	465	612
NIFP & Crop Production	0	0	0	0	918	918	0	0	0	0	918	918
Sub-total	0	0	0	136	1,383	1,519	10	0	10	146	1,383	1,529
Total	1,799	5,853	7,652	383	8,498	8,881	12	0	12	2,194	14,351	16,545
<b>Natural Forest Conservation / Improvement</b>												
No.1 Enrichment Planting	0	0	0	0	0	0	32	56	88	32	56	88
Total	0	0	0	0	0	0	32	56	88	32	56	88
<b>Seedling Production</b>												
Central Nursery	252	27	279	0	0	0	261	28	288	512	55	567
Village Nursery	0	0	0	56	2	58	0	0	0	56	2	58
Total	252	27	279	56	2	58	261	28	288	568	57	625
Total	2,051	5,881	7,932	439	8,500	8,939	305	83	388	2,795	14,464	17,258
<b>Support &amp; Operation Activities</b>												
<b>Infrastructure Development</b>												
<b>Forest Road - Fire Break</b>												
	1,922	1,381	3,303	0	0	0	0	0	0	1,922	1,381	3,303
Sub-total	1,922	1,381	3,303	0	0	0	0	0	0	1,922	1,381	3,303
<b>Nurseries &amp; Other Facilities</b>												
Central Nursery	0	0	0	0	0	0	566	1,023	1,589	566	1,023	1,589
Village Nurseries	0	0	0	0	140	140	169	0	169	169	140	309
Watchout Towers	0	0	0	0	0	0	48	41	89	48	41	89
Water Source Facilities	0	0	0	0	18	18	19	0	19	19	18	38
Sub-total	0	0	0	0	158	158	802	1,064	1,866	802	1,223	2,025
Total	1,922	1,381	3,303	0	159	159	802	1,064	1,866	2,724	2,603	5,328
<b>Extension &amp; Education</b>												
Direct Contact to Key Farmers	0	0	0	0	0	0	24	0	24	24	0	24
Workshops	0	0	0	0	0	0	433	0	433	433	0	433
On Site Training	0	0	0	0	0	0	72	0	72	72	0	72
Training Courses	0	0	0	0	0	0	417	0	417	417	0	417
Total	0	0	0	0	0	0	946	0	946	946	0	946
<b>Support for People Participation</b>												
NGO	0	0	0	0	0	0	57	0	57	57	0	57
Total	0	0	0	0	0	0	57	0	57	57	0	57
<b>Management Consultants</b>												
Total	0	0	0	0	0	0	554	0	554	554	0	554
<b>Forest Management Planning Committee</b>												
Total	0	0	0	0	0	0	65	0	65	65	0	65
<b>Strengthening PC Management &amp; Operation</b>												
Total	329	0	329	0	0	0	0	0	0	329	0	329
<b>Forest Management Center</b>												
Secreatariat for Coordination & Mediation	0	0	0	0	0	0	0	19	19	0	19	19
Total	0	0	0	0	0	0	0	19	19	0	19	19
Total	2,251	1,381	3,632	0	159	159	2,423	1,083	3,506	4,674	2,622	7,297
<b>Taxation &amp; Environmental Consideration</b>												
<b>Taxation</b>												
<b>Rent</b>												
Industrial Plantation with Taungya	0	105	105	0	0	0	0	0	0	0	105	105
Industrial Plantation without Taungya	0	105	105	0	0	0	0	0	0	0	105	105
Subtotal	0	210	210	0	0	0	0	0	0	0	210	210
<b>Loyalty</b>												
Industrial Plantation with Taungya	0	4,157	4,157	0	0	0	0	0	0	0	4,157	4,157
Industrial Plantation without Taungya	0	4,340	4,340	0	0	0	0	0	0	0	4,340	4,340
Subtotal	0	8,497	8,497	0	0	0	0	0	0	0	8,497	8,497
Total	0	8,707	8,707	0	0	0	0	0	0	0	8,707	8,707
<b>Environmental Consideration</b>												
Industrial Plantation with Taungya	0	66	66	0	0	0	0	0	0	0	66	66
Industrial Plantation without Taungya	0	32	32	0	0	0	0	0	0	0	32	32
Forest Road - Fire Break	0	33	33	0	0	0	0	0	0	0	33	33
Total	0	131	131	0	0	0	0	0	0	0	131	131
Total	0	8,838	8,838	0	0	0	0	0	0	0	8,838	8,838
Total	4,302	16,099	20,402	439	8,658	9,097	2,728	1,166	3,894	7,469	25,924	33,393

## 5. Project Evaluation

### (1) Economic Analysis

Benefit Flow (Economic)

Year	Industrial Plantation with Taungya					Industrial Plantation without Taungya					Green Fire Belt					Grand Total (Cedis)	Grand Total (,000Cedis)
	Total	Private Company	Local People	Forestry Department	Crop Production	Total	Private Company	Local People	Forestry Department	Total	Private Company	Local People	Forestry Department	Crop Production			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	1,895,000	0	0	0	1,895,000	1,895,000	1,895	
3	205,557,000	0	0	0	205,557,000	0	0	0	0	12,315,000	0	0	0	12,315,000	217,872,000	217,872	
4	484,989,000	0	0	0	484,989,000	0	0	0	0	13,986,000	0	0	0	13,986,000	498,975,000	498,975	
5	1,642,787,000	0	0	0	1,642,787,000	0	0	0	0	49,300,000	0	0	0	49,300,000	1,692,087,000	1,692,087	
6	2,483,271,000	0	0	0	2,483,271,000	0	0	0	0	79,171,000	0	0	0	79,171,000	2,562,442,000	2,562,442	
7	4,324,119,000	0	0	0	4,324,119,000	905,580	905,580	0	0	142,568,000	0	0	0	142,568,000	4,467,592,580	4,467,593	
8	4,216,702,000	0	0	0	4,216,702,000	2,530,980	2,530,980	0	0	138,847,000	0	0	0	138,847,000	4,358,079,980	4,358,080	
9	6,712,176,000	0	0	0	6,712,176,000	1,044,900	1,044,900	0	0	198,243,000	0	0	0	198,243,000	6,911,463,900	6,911,464	
10	4,254,019,000	0	0	0	4,254,019,000	5,433,480	5,433,480	0	0	368,886,000	0	0	0	368,886,000	4,628,338,480	4,628,338	
11	6,345,065,000	0	0	0	6,345,065,000	11,124,540	11,124,540	0	0	746,836,000	0	0	0	746,836,000	7,103,027,540	7,103,028	
12	4,672,366,840	7,301,840	0	0	4,685,065,000	10,797,780	10,797,780	0	0	869,233,000	0	0	0	869,233,000	5,552,397,620	5,552,398	
13	6,462,164,240	11,762,240	0	0	6,450,402,000	15,462,540	15,462,540	0	0	937,483,000	0	0	0	937,483,000	7,415,109,780	7,415,110	
14	2,651,696,360	21,773,360	0	0	2,629,923,000	38,334,360	38,334,360	0	0	1,002,483,000	0	0	0	1,002,483,000	3,692,513,720	3,692,514	
15	3,968,018,040	38,855,040	0	0	3,929,163,000	32,471,920	32,471,920	0	0	1,067,483,000	0	0	0	1,067,483,000	5,067,972,960	5,067,973	
16	42,427,360	42,427,360	0	0	42,427,360	45,819,280	45,819,280	0	0	1,135,733,000	0	0	0	1,135,733,000	1,223,979,640	1,223,980	
17	34,735,520	34,735,520	0	0	34,735,520	87,698,520	87,698,520	0	0	1,184,483,000	0	0	0	1,184,483,000	1,306,917,040	1,306,917	
18	67,704,160	67,704,160	0	0	67,704,160	94,059,040	94,059,040	0	0	1,197,227,000	0	0	0	1,197,227,000	1,358,990,200	1,358,990	
19	85,920,800	85,920,800	0	0	85,920,800	75,499,920	75,499,920	0	0	1,171,073,000	0	0	0	1,171,073,000	1,332,493,720	1,332,494	
20	62,580,640	62,580,640	0	0	62,580,640	147,578,000	147,578,000	0	0	854,998,000	0	0	0	854,998,000	1,065,154,640	1,065,155	
21	43,169,920	43,169,920	0	0	43,169,920	174,197,440	174,197,440	0	0	525,973,000	0	0	0	525,973,000	743,340,360	743,340	
22	241,680,944	215,197,011	26,483,933	0	241,680,944	78,848,640	78,848,640	0	0	151,482,000	0	0	0	151,482,000	472,011,584	472,012	
23	335,355,584	292,693,683	42,661,901	0	335,355,584	213,967,728	213,967,728	0	0	146,674,000	0	0	0	146,674,000	655,997,312	655,997	
24	585,415,376	506,442,925	78,972,451	0	585,415,376	441,170,448	441,170,448	0	0	149,112,000	0	0	0	149,112,000	1,175,697,824	1,175,698	
25	1,242,362,159	1,062,330,047	180,032,112	0	1,242,362,159	476,998,234	476,998,234	0	0	209,463,000	0	0	0	209,463,000	1,928,823,393	1,928,823	
26	783,221,684	657,046,259	106,175,405	0	783,221,684	610,560,288	610,560,288	0	0	398,058,000	0	0	0	398,058,000	1,771,839,952	1,771,840	
27	1,168,288,177	956,134,222	212,153,955	0	1,168,288,177	1,026,297,920	1,026,297,920	0	0	746,838,000	0	0	0	746,838,000	2,941,424,097	2,941,424	
28	2,055,566,240	1,689,663,168	365,903,072	0	2,055,566,240	1,019,472,770	1,019,472,770	0	0	869,233,000	0	0	0	869,233,000	3,944,272,010	3,944,272	
29	2,845,766,360	2,301,893,024	543,873,336	0	2,845,766,360	2,042,753,087	2,042,753,087	0	0	937,483,000	0	0	0	937,483,000	5,826,002,447	5,826,002	
30	4,594,092,138	3,690,903,214	903,188,924	0	4,594,092,138	1,666,850,350	1,666,850,350	0	0	1,004,116,000	0	0	0	1,004,116,000	7,265,058,488	7,265,058	
31	3,757,082,691	3,035,456,617	721,626,074	0	3,757,082,691	3,239,723,466	3,239,723,466	0	0	1,071,730,000	0	0	0	1,071,730,000	8,068,536,157	8,068,536	
32	1,512,184,517	1,209,747,614	302,436,903	0	1,512,184,517	4,353,046,386	4,353,046,386	0	0	1,120,122,000	0	0	0	1,120,122,000	6,985,352,903	6,985,353	
33	3,179,275,741	2,543,420,593	635,855,148	0	3,179,275,741	2,495,791,306	2,495,791,306	0	0	1,162,671,000	0	0	0	1,162,671,000	6,837,738,047	6,837,738	
34	1,777,738,871	1,422,191,097	355,547,774	0	1,777,738,871	3,549,146,133	3,549,146,133	0	0	1,150,579,000	0	0	0	1,150,579,000	6,477,464,004	6,477,464	
35	1,099,099,966	879,279,973	219,819,993	0	1,099,099,966	4,962,448,092	4,962,448,092	0	0	876,957,000	0	0	0	876,957,000	6,938,505,058	6,938,505	
36	2,094,928,795	1,675,943,036	418,985,759	0	2,094,928,795	2,769,939,220	2,769,939,220	0	0	546,813,000	0	0	0	546,813,000	5,411,681,015	5,411,681	
37	3,615,586,506	2,892,469,205	723,117,301	0	3,615,586,506	10,797,780	10,797,780	0	0	251,136,000	0	0	0	251,136,000	3,877,520,286	3,877,520	
38	5,824,202,697	4,659,362,158	1,164,840,539	0	5,824,202,697	1,923,877,613	1,923,877,613	0	0	144,567,000	0	0	0	144,567,000	7,892,847,310	7,892,847	
39	10,781,319,038	8,625,055,230	2,156,263,808	0	10,781,319,038	5,372,109,819	5,372,109,819	0	0	134,590,000	0	0	0	134,590,000	16,288,018,857	16,288,019	
40	19,239,501,045	15,391,600,836	3,847,900,209	0	19,239,501,045	2,234,489,311	2,234,489,311	0	0	184,477,000	0	0	0	184,477,000	21,658,467,356	21,658,467	
41	14,571,140,134	11,656,912,107	2,914,228,027	0	14,571,140,134	11,496,309,715	11,496,309,715	0	0	438,060,000	0	0	0	438,060,000	26,505,509,849	26,505,510	
42	6,830,193,509	5,464,154,807	1,366,038,702	0	6,830,193,509	19,363,912,787	19,363,912,787	0	0	811,119,000	0	0	0	811,119,000	27,005,225,296	27,005,225	
43	14,329,268,095	11,463,414,476	2,865,853,619	0	14,329,268,095	11,201,371,968	11,201,371,968	0	0	943,983,000	0	0	0	943,983,000	26,474,623,063	26,474,623	
44	8,290,387,185	6,632,309,748	1,658,077,437	0	8,290,387,185	15,800,317,903	15,800,317,903	0	0	1,008,983,000	0	0	0	1,008,983,000	25,099,688,088	25,099,688	
45	5,180,299,676	4,144,239,741	1,036,059,935	0	5,180,299,676	22,243,589,327	22,243,589,327	0	0	1,070,733,000	0	0	0	1,070,733,000	28,494,622,003	28,494,622	
46	9,433,680,644	7,546,944,515	1,886,736,129	0	9,433,680,644	12,666,990,791	12,666,990,791	0	0	1,070,733,000	0	0	0	1,070,733,000	23,171,404,435	23,171,404	
47																	
48																	
49																	
50																	
Total	174,107,106,632	101,031,036,186	24,732,832,446	0	174,107,106,632	48,343,238,000	132,003,737,362	0	0	28,297,930,000	0	0	0	28,297,930,000	334,408,773,994	334,408,773	

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Summary of Economic Cost

(Unit: Cedis)

Year	Investment										O&M											
	F/C				L/C				Grand Total	F/C				L/C				Grand Total				
	Construction Cost	Physical Contingency 15%	Price Contingency 0.0%	F/C Total	Construction Cost	Unskilled CF 0.750	Others SCF 0.958	Physical Contingency 15%		Price Contingency 0%	L/C Total	Labor etc.	Price Contingency 0.0%	F/C Total	Labor etc.	Environmental Consideration 0.858	Domestic CF 0.750		Rent	Loyalty	Price Contingency 0%	L/C Total
1	568,447,200	85,287,080	0	653,734,280	1,018,405,804	825,032,450	394,373,154	152,810,841	0	1,172,318,445	1,828,030,725	3,000	0	3,000	38,781,942	34,081,942	2,700,000	0	0	0	38,781,942	38,784,942
2	343,882,200	51,579,330	0	395,461,530	634,889,971	521,668,825	282,233,346	95,248,498	0	730,238,487	1,125,879,897	48,825,000	0	48,825,000	17,547,132	4,827,132	12,720,000	0	0	0	17,547,132	64,172,132
3	487,398,800	74,809,820	0	572,008,620	841,307,101	69,183,125	772,143,878	128,198,085	0	967,503,186	1,538,511,786	54,531,000	0	54,531,000	32,298,087	8,824,892	25,371,375	0	0	0	32,298,087	86,827,087
4	609,424,200	91,413,630	0	700,837,830	888,317,016	107,227,415	781,089,801	133,247,552	0	1,021,564,568	1,722,402,398	67,585,000	0	67,585,000	69,307,749	8,113,599	81,194,150	0	0	0	69,307,749	138,882,749
5	703,842,800	105,578,420	0	809,421,220	1,044,881,298	150,822,748	893,858,550	158,702,195	0	1,201,383,483	2,010,802,713	84,525,000	0	84,525,000	138,322,119	10,954,519	125,387,119	0	0	0	138,322,119	220,847,119
6	711,287,400	106,893,110	0	817,980,510	829,177,418	175,073,014	854,104,404	124,378,813	0	953,554,031	1,771,534,541	86,223,000	0	86,223,000	220,941,553	11,828,778	209,114,775	0	0	0	220,941,553	307,164,553
7	545,302,500	81,795,375	0	627,097,875	681,799,533	187,135,417	514,664,118	102,289,930	0	784,089,483	1,411,187,338	83,117,000	0	83,117,000	337,202,818	10,541,018	326,661,800	0	0	0	337,202,818	420,319,618
8	574,008,800	86,101,335	0	660,110,235	632,528,890	190,739,010	441,789,880	94,879,029	0	727,405,889	1,387,518,124	95,244,000	0	95,244,000	482,898,472	12,831,422	450,358,050	0	0	0	482,898,472	558,233,472
9	542,644,500	81,396,875	0	624,041,375	597,492,679	158,413,802	441,078,877	89,823,902	0	687,116,581	1,311,157,758	91,714,000	0	91,714,000	551,013,259	13,257,934	537,755,325	0	0	0	551,013,259	642,727,259
10	583,617,500	87,542,825	0	671,160,325	540,540,497	150,279,082	390,261,435	81,081,075	0	621,821,572	1,282,781,897	91,858,000	0	91,858,000	651,323,013	14,464,593	636,858,420	0	0	0	651,323,013	743,178,013
11	301,387,000	45,205,050	0	346,572,050	330,727,899	144,791,783	185,935,938	49,089,155	0	300,338,554	728,908,904	100,418,000	0	100,418,000	732,320,649	11,724,129	720,596,520	0	0	0	732,320,649	832,738,649
12	11,628,000	1,744,200	0	13,372,200	172,255,252	71,543,421	100,711,831	25,838,288	0	198,093,540	211,465,740	89,251,000	0	89,251,000	739,854,377	8,451,227	731,503,350	0	0	0	739,854,377	829,205,377
13	0	0	0	0	21,780,725	5,974,875	15,805,850	3,287,109	0	25,047,834	25,047,834	89,223,000	0	89,223,000	685,471,805	7,175,535	678,296,070	0	0	0	685,471,805	774,894,805
14	0	0	0	0	22,141,013	6,491,700	15,649,313	3,321,152	0	25,482,165	25,482,165	89,231,000	0	89,231,000	355,631,469	5,783,389	549,848,100	0	0	0	355,631,469	457,811,194
15	0	0	0	0	23,023,027	7,328,400	15,694,627	3,453,454	0	28,478,481	28,478,481	89,285,000	0	89,285,000	457,811,194	4,615,194	452,996,010	0	0	0	457,811,194	548,376,194
16	0	0	0	0	21,588,189	5,704,050	15,884,139	3,238,225	0	24,826,394	24,826,394	89,189,000	0	89,189,000	403,470,120	3,971,025	399,499,095	0	0	0	403,470,120	482,859,120
17	0	0	0	0	21,087,385	5,823,425	15,483,940	3,183,105	0	24,250,470	24,250,470	89,219,000	0	89,219,000	423,728,244	4,212,154	419,514,990	0	0	0	423,728,244	512,945,244
18	0	0	0	0	20,952,359	5,327,475	15,624,884	3,142,854	0	24,095,213	24,095,213	89,203,000	0	89,203,000	428,284,203	4,152,548	422,128,855	0	0	0	428,284,203	515,487,203
19	0	0	0	0	22,754,153	7,218,075	15,536,078	3,413,123	0	26,187,278	26,187,278	89,225,000	0	89,225,000	387,845,485	3,451,310	384,394,175	0	0	0	387,845,485	457,070,485
20	0	0	0	0	23,775,805	8,114,325	15,661,480	3,568,371	0	27,342,176	27,342,176	89,231,000	0	89,231,000	355,398,268	3,333,888	352,062,800	0	0	0	355,398,268	444,827,268
21	0	0	0	0	20,942,398	5,249,400	15,692,998	3,141,380	0	24,083,758	24,083,758	89,193,000	0	89,193,000	387,061,584	3,441,834	383,619,750	0	0	0	387,061,584	456,254,584
22	0	0	0	0	21,769,494	6,286,575	15,482,908	3,285,423	0	25,034,907	25,034,907	89,238,000	0	89,238,000	358,322,174	3,340,374	354,981,800	0	0	0	358,322,174	445,560,174
23	0	0	0	0	21,984,731	6,254,850	15,729,881	3,287,710	0	25,282,441	25,282,441	89,217,000	0	89,217,000	352,247,984	3,310,484	348,937,500	0	0	0	352,247,984	441,464,984
24	0	0	0	0	22,135,599	6,518,475	15,617,124	3,320,340	0	25,455,939	25,455,939	89,283,000	0	89,283,000	352,178,182	3,352,157	348,826,025	0	0	0	352,178,182	441,439,182
25	0	0	0	0	25,729,284	8,953,575	15,872,718	3,858,944	0	29,585,238	29,585,238	89,257,000	0	89,257,000	328,178,553	3,113,328	325,065,225	0	0	0	328,178,553	417,435,553
26	0	0	0	0	21,112,285	5,274,000	15,838,285	3,188,993	0	24,280,278	24,280,278	89,214,000	0	89,214,000	328,178,553	3,113,328	325,065,225	0	0	0	328,178,553	417,392,553
27	13,833,800	2,075,070	0	15,908,870	28,384,287	10,482,785	17,881,472	4,254,840	0	32,818,907	48,527,777	89,587,000	0	89,587,000	328,278,143	3,213,818	325,064,325	0	0	0	328,278,143	417,848,143
28	27,175,400	4,076,310	0	31,251,710	38,915,141	15,761,850	21,153,291	5,537,271	0	42,452,412	73,704,122	89,731,000	0	89,731,000	328,399,372	3,334,147	325,065,225	0	0	0	328,399,372	418,130,372
29	54,822,800	8,238,420	0	63,061,220	51,044,313	25,286,833	27,757,480	7,856,847	0	58,700,960	121,862,180	90,173,000	0	90,173,000	334,712,891	3,650,881	331,062,010	0	0	0	334,712,891	424,885,891
30	79,259,800	11,888,970	0	91,148,770	73,499,188	42,130,875	31,368,293	11,024,875	0	84,524,043	175,872,813	90,947,000	0	90,947,000	343,834,982	3,838,507	339,896,455	0	0	0	343,834,982	434,781,982
31	84,806,400	12,720,980	0	97,527,380	70,017,280	37,882,773	32,154,487	10,502,588	0	80,519,849	178,047,209	90,458,000	0	90,458,000	359,813,827	4,210,812	355,603,015	0	0	0	359,813,827	450,071,827
32	74,980,000	11,248,950	0	86,228,950	60,435,852	30,583,503	29,852,349	9,085,378	0	69,501,230	155,739,300	89,805,000	0	89,805,000	374,328,924	4,454,719	369,874,205	0	0	0	374,328,924	464,134,924
33	82,218,400	12,332,780	0	94,551,180	71,985,595	38,804,132	32,181,483	10,784,839	0	82,760,454	177,311,594	90,438,000	0	90,438,000	385,054,370	4,747,005	380,307,365	0	0	0	385,054,370	485,483,370
34	70,385,200	10,557,780	0	80,942,980	62,523,202	33,061,490	29,481,712	9,378,490	0	71,901,682	152,844,682	89,913,000	0	89,913,000	388,815,898	4,702,841	384,113,057	0	0	0	388,815,898	488,528,898
35	74,833,600	11,225,040	0	86,058,640	58,711,122	29,331,482	29,378,890	8,806,888	0	67,517,790	153,578,430	89,858,000	0	89,858,000	412,881,948	4,984,781	407,897,165	0	0	0	412,881,948	502,339,648
36	66,822,800	10,023,420	0	76,846,220	63,888,213	34,013,988	29,874,245	9,553,232	0	73,241,445	150,987,865	90,008,000	0	90,008,000	415,849,582	4,950,887	410,898,695	0	0	0	415,849,582	505,857,582
37	0	0	0	0	38,531,243	19,424,149	19,107,994	5,779,886	0	44,310,929	44,310,929	89,237,000	0	89,237,000	418,998,801	4,811,788	414,187,013	0	0	0	418,998,801	508,236,801
38	0	0	0	0	21,872,731	6,242,850	15,729,881	3,285,910	0	25,285,910	25,285,910	89,217,000	0	89,217,000	398,191,059	4,772,584	393,418,475	0	0	0	398,191,059	485,408,059
39	0	0	0	0	22,224,069	6,809,975	15,617,124	3,333,815	0	25,557,714	25,557,714	89,287,000	0	89,287,000	382,592,358	5,115,843	377,476,515	0	0	0	382,592,358	451,859,358

## (2) Financial Analysis

Benefit Flow (Financial)

Year	Industrial Plantation with Taungya					Industrial Plantation without Taungya					Green Fire Belt					Grand Total (Cedis)	Grand Total (,000Cedis)
	Total	Private Company	Local People	Forestry Department	Crop Production	Total	Private Company	Local People	Forestry Department	Total	Private Company	Local People	Forestry Department	Crop Production			
1	0					0				0				0	0	0	
2	0					0				0				0			
3	180,096,000	0	0		180,096,000	0	0			1,608,000				1,608,000	1,608,000	1,608	
4	424,924,000	0	0		424,924,000	0	0			10,636,000				10,636,000	190,732,000	190,732	
5	1,476,624,000	0	0		1,476,624,000	0	0			12,286,000				12,286,000	437,210,000	437,210	
6	2,227,190,540	0	1,710,540		2,225,480,000	0	0			43,412,000				43,412,000	1,520,036,000	1,520,036	
7	3,928,203,440	0	2,755,440		3,925,448,000	905,580	905,580			70,378,000				70,378,000	2,297,568,540	2,297,569	
8	3,794,282,660	0	5,100,660		3,789,182,000	2,530,980	2,530,980			128,116,000				128,116,000	4,057,225,020	4,057,225	
9	6,123,694,240	0	9,102,240		6,114,592,000	1,044,900	1,044,900			124,039,000				124,039,000	3,920,852,640	3,920,853	
10	3,786,765,060	0	10,619,060		3,776,146,000	5,433,480	5,433,480			179,004,000				179,004,000	6,303,743,140	6,303,743	
11	5,746,238,520	0	9,232,520		5,737,006,000	11,124,540	11,124,540			330,149,000				330,149,000	4,122,347,540	4,122,348	
12	4,186,810,540	7,301,840	21,388,700		4,158,120,000	10,797,780	10,797,780			666,964,000				666,964,000	6,424,327,060	6,424,327	
13	5,951,441,480	11,762,240	29,385,240		5,910,294,000	15,462,540	15,462,540			777,134,000				777,134,000	4,974,742,320	4,974,742	
14	2,420,614,160	21,773,360	27,824,800		2,371,016,000	38,334,360	38,334,360			839,357,000				839,357,000	6,806,261,020	6,806,261	
15	3,726,499,400	38,855,040	30,002,360		3,657,642,000	32,471,920	32,471,920			898,617,000				898,617,000	3,357,565,520	3,357,566	
16	83,756,360	42,427,360	41,329,000			45,819,280	45,819,280			957,877,000				957,877,000	4,716,848,320	4,716,848	
17	69,768,280	34,735,520	35,032,760			87,698,520	87,698,520			1,020,100,000				1,020,100,000	1,149,675,640	1,149,676	
18	124,072,280	67,704,160	56,368,120			94,059,040	94,059,040			1,064,545,000				1,064,545,000	1,222,011,800	1,222,012	
19	170,396,160	85,920,800	84,475,360			75,499,920	75,499,920			1,076,845,000				1,076,845,000	1,294,976,320	1,294,976	
20	117,909,280	62,580,640	55,328,640			147,576,000	147,576,000			1,053,677,000				1,053,677,000	1,299,573,080	1,299,573	
21	75,586,240	43,169,920	32,416,320			174,197,440	174,197,440			766,344,000				766,344,000	1,031,829,280	1,031,829	
22	255,809,440	185,638,880	70,170,560			78,848,640	78,848,640			469,396,000				469,396,000	719,179,680	719,180	
23	306,331,840	245,079,680	61,252,160			194,407,200	194,407,200			134,872,000				134,872,000	469,530,080	469,530	
24	497,745,760	418,303,520	79,442,240			386,501,280	386,501,280			131,770,000				131,770,000	632,509,040	632,509	
25	1,044,708,800	861,400,192	183,308,608			382,586,240	382,586,240			133,174,000				133,174,000	1,017,421,040	1,017,421	
26	622,468,160	538,546,240	83,921,920			493,197,120	493,197,120			207,219,000				207,219,000	1,634,514,040	1,634,514	
27	875,723,960	719,353,888	156,370,072			829,020,800	829,020,800			356,006,000				356,006,000	1,471,671,280	1,471,671	
28	1,552,267,680	1,281,286,848	270,980,832			786,052,280	786,052,280			666,964,000				666,964,000	2,371,708,760	2,371,709	
29	2,091,020,360	1,694,888,032	396,132,328			1,545,408,040	1,545,408,040			777,134,000				777,134,000	3,115,453,960	3,115,454	
30	3,336,535,040	2,682,874,048	653,660,992			1,303,227,240	1,303,227,240			839,357,000				839,357,000	4,475,785,400	4,475,785	
31	2,756,780,380	2,230,065,728	526,714,652			2,392,245,200	2,392,245,200			900,045,000				900,045,000	5,539,807,280	5,539,807	
32	1,093,011,040	872,204,480	220,806,560			3,138,714,380	3,138,714,380			961,509,000				961,509,000	6,110,534,580	6,110,535	
33	2,297,296,580	1,833,756,736	463,539,844			1,800,123,140	1,800,123,140			1,005,268,000				1,005,268,000	5,236,993,420	5,236,993	
34	1,290,817,360	1,025,372,096	265,445,264			2,559,156,820	2,559,156,820			1,043,603,000				1,043,603,000	5,141,022,720	5,141,023	
35	803,048,740	633,943,744	169,104,996			2,000,178,220	2,000,178,220			1,032,238,000				1,032,238,000	4,882,212,180	4,882,212	
36	1,519,635,400	1,208,322,304	311,313,096			10,797,780	10,797,780			784,156,000				784,156,000	5,166,549,260	5,166,549	
37	2,624,655,548	2,085,413,980	539,241,558			1,389,796,956	1,389,796,956			488,069,000				488,069,000	4,007,880,620	4,007,881	
38	4,222,882,968	3,359,309,414	863,573,554			3,879,422,856	3,879,422,856			227,976,000				227,976,000	2,863,429,328	2,863,429	
39	7,790,507,392	6,218,496,922	1,572,010,470			1,618,242,400	1,618,242,400			130,747,000				130,747,000	5,743,426,924	5,743,427	
40	13,882,680,248	11,097,044,582	2,785,635,666			8,291,825,776	8,291,825,776			123,343,000				123,343,000	11,793,273,248	11,793,273	
41	10,524,568,688	8,404,406,710	2,120,161,978			13,966,220,960	13,966,220,960			166,607,000				166,607,000	15,667,529,648	15,667,530	
42	4,939,710,360	3,939,549,248	1,000,161,112			8,084,165,688	8,084,165,688			392,632,000				392,632,000	19,209,026,464	19,209,026	
43	10,349,283,056	8,264,898,685	2,084,384,371			11,396,021,896	11,396,021,896			725,628,000				725,628,000	19,631,559,320	19,631,559	
44	6,010,230,496	4,781,766,221	1,228,464,275			16,041,084,912	16,041,084,912			845,283,000				845,283,000	19,278,731,744	19,278,732	
45	3,752,491,184	2,987,916,179	764,575,005			9,139,192,544	9,139,192,544			904,543,000				904,543,000	18,310,795,392	18,310,795	
46	6,809,642,704	5,441,200,083	1,368,442,621							960,840,000				960,840,000	20,754,416,096	20,754,416	
47										960,840,000				960,840,000	16,909,675,248	16,909,675	
48																	
49																	
50																	
Total	135,864,725,824	73,427,269,331	18,690,886,493		43,746,570,000	96,028,737,168	96,028,737,168	0	0	25,390,307,000	0	0		25,390,307,000	257,283,769,992	257,283,769	

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Summary of Financial Cost

(Unit: Cadia)

Year	Investment										Grand Total	O&M								Grand Total										
	F/C			Construction Cost	L/C		Price Contingency 0%	L/C Total	F/C			L/C				Price Contingency 0%	L/C Total													
	Construction Cost	Physical Contingency 15%	Price Contingency 0.0%		F/C Total	Unskilled			Others	Labor etc.		Price Contingency 0.0%	F/C Total	Labor etc.	Environmental Consideration			Domestic	Rent		Loyalty									
1	588,447,200	85,267,080	0	673,714,280	1,245,039,600	633,376,600	411,563,000	186,755,940	0	1,431,795,540	2,095,509,520	3,000	0	3,000	39,176,140	35,676,140	3,600,000	0	0	0	0	0	0	0	39,176,140	30,179,140				
2	343,362,200	51,579,330	0	395,441,530	677,930,600	69,959,500	608,375,100	101,689,590	0	779,620,190	1,175,061,720	46,625,000	0	46,625,000	22,219,760	5,038,760	16,960,000	221,000	0	0	0	0	0	0	22,219,760	68,944,760				
3	497,398,800	74,609,820	0	572,008,620	899,213,300	905,990,800	134,731,990	1,604,953,915	0	1,032,945,295	1,604,953,915	54,531,000	0	54,531,000	7,228,290	33,828,500	694,000	0	0	0	0	0	0	0	0	41,750,780	96,281,780			
4	609,424,200	91,413,630	0	700,837,830	959,303,500	142,969,897	815,333,613	143,745,625	0	1,102,049,025	1,402,886,856	67,585,000	0	67,585,000	8,469,310	81,592,200	1,680,000	0	0	0	0	0	0	0	0	0	91,741,510	159,326,510		
5	703,942,900	105,676,420	0	809,419,220	1,134,143,500	201,096,997	933,046,503	170,121,525	0	1,103,049,025	1,304,265,025	213,694,246	0	213,694,246	11,434,780	167,156,900	11,434,780	0	0	0	0	0	0	0	0	0	0	191,582,580	266,107,580	
6	711,287,400	106,893,110	0	817,980,510	916,211,900	233,430,686	682,781,215	137,431,765	0	1,053,643,686	1,371,624,136	84,525,000	0	84,525,000	295,743,990	12,345,290	278,819,700	4,579,000	0	0	0	0	0	0	0	0	0	482,720,950	556,607,950	
7	545,302,600	81,795,375	0	627,097,975	760,074,900	222,847,222	537,227,678	114,011,236	0	874,096,135	1,501,184,010	83,117,000	0	83,117,000	452,120,950	6,189,000	6,189,000	0	0	0	0	0	0	0	0	0	0	621,369,600	7,707,000	
8	574,008,300	86,101,355	0	660,110,235	715,475,100	254,318,680	461,156,420	107,321,285	0	1,482,906,600	95,244,000	91,856,000	0	91,856,000	15,088,740	13,185,200	600,477,400	7,707,000	0	0	0	0	0	0	0	0	0	9,151,000	9,151,000	
9	542,944,500	81,396,875	0	624,041,175	669,908,100	208,551,736	460,416,364	100,345,215	0	1,393,354,490	91,714,000	91,714,000	0	91,714,000	739,897,280	13,639,190	717,007,100	9,151,000	0	0	0	0	0	0	0	0	0	0	10,793,000	10,793,000
10	583,617,500	87,542,625	0	671,160,125	607,743,100	230,372,082	407,371,018	91,151,465	0	1,452,214,795	1,370,064,890	91,856,000	0	91,856,000	15,088,740	13,185,200	600,477,400	7,707,000	0	0	0	0	0	0	0	0	0	0	9,151,000	9,151,000
11	301,367,000	45,205,050	0	346,572,050	387,143,300	193,055,684	194,087,616	58,071,495	0	445,214,795	243,898,360	89,251,000	0	89,251,000	9,661,420	9,661,420	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	11,628,000	1,744,200	0	13,372,200	200,518,400	95,391,228	105,127,172	30,077,760	0	230,598,160	791,785,946	100,416,000	0	100,416,000	965,142,490	12,236,130	980,795,360	12,109,000	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	24,465,300	7,966,500	16,498,800	3,669,795	0	463,214,795	243,898,360	89,251,000	0	89,251,000	1,000,234,540	8,621,740	976,337,800	12,109,000	3,966,000	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	24,991,000	8,655,600	16,336,400	3,748,650	0	28,135,095	28,135,095	89,251,000	0	89,251,000	934,247,860	7,490,120	904,394,780	12,109,000	9,254,000	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	26,153,900	9,771,200	16,382,700	3,748,650	0	28,135,095	28,135,095	89,251,000	0	89,251,000	934,247,860	7,490,120	904,394,780	12,109,000	9,254,000	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	24,165,900	7,497,300	16,141,900	3,546,870	0	30,076,985	30,076,985	89,251,000	0	89,251,000	768,462,720	6,036,920	730,130,900	12,109,000	17,186,000	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	23,639,600	7,605,400	16,580,500	3,627,885	0	27,813,785	27,813,785	89,189,000	0	89,189,000	644,717,200	4,817,520	603,994,680	12,109,000	23,796,000	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	23,413,200	7,103,300	16,103,900	3,511,900	0	27,185,770	27,185,770	89,219,000	0	89,219,000	587,877,580	4,146,120	532,665,460	12,109,000	38,968,000	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	25,841,900	9,624,100	16,217,200	3,876,195	0	28,925,189	28,925,189	89,230,000	0	89,230,000	653,870,360	4,339,820	562,835,540	12,109,000	58,982,520	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	27,167,200	10,819,100	16,348,100	3,607,985	0	29,717,495	29,717,495	89,230,000	0	89,230,000	653,870,360	4,339,820	562,835,540	12,109,000	58,982,520	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	23,380,200	6,999,200	16,381,000	3,507,000	0	26,897,230	26,897,230	89,193,000	0	89,193,000	600,770,120	3,929,520	489,416,800	12,109,000	105,530,000	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	24,759,300	8,539,800	16,141,900	3,748,650	0	28,473,195	28,473,195	89,230,000	0	89,230,000	600,770,120	3,929,520	489,416,800	12,109,000	105,530,000	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	24,991,000	8,655,600	16,336,400	3,748,650	0	28,473,195	28,473,195	89,230,000	0	89,230,000	600,770,120	3,929,520	489,416,800	12,109,000	105,530,000	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	24,991,000	8,655,600	16,336,400	3,748,650	0	28,473,195	28,473,195	89,230,000	0	89,230,000	600,770,120	3,929,520	489,416,800	12,109,000	105,530,000	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	29,708,700	13,138,100	16,588,600	4,468,005	0	28,742,095	28,742,095	89,217,000	0	89,217,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	23,665,700	7,032,000	16,533,700	3,534,955	0	27,185,770	27,185,770	89,263,000	0	89,263,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	0
27	13,833,800	2,076,070	0	15,909,870	32,642,480	13,977,060	18,665,420	4,896,372	0	31,242,280	31,242,280	89,230,000	0	89,230,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	
28	27,175,400	4,076,310	0	31,251,710	43,096,480	21,015,900	22,080,600	6,494,472	0	31,242,280	31,242,280	89,230,000	0	89,230,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	
29	54,822,800	8,238,420	0	63,061,220	60,802,600	33,715,777	26,896,723	9,090,375	0	37,538,652	37,538,652	89,214,000	0	89,214,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	
30	79,259,800	11,888,370	0	91,148,170	89,918,000	56,174,499	32,743,521	12,607,182	0	49,692,875	49,692,875	89,731,000	0	89,731,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	
31	84,806,400	12,720,960	0	97,527,360	84,047,680	50,463,697	33,354,133	12,607,182	0	60,692,652	60,692,652	89,731,000	0	89,731,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	
32	92,218,400	13,248,500	0	105,466,900	86,238,500	71,939,120	40,778,004	31,161,116	0	102,255,723	102,255,723	90,173,000	0	90,173,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	
33	70,385,200	10,557,780	0	80,942,980	86,643,640	54,081,987	30,763,353	11,225,301	0	96,955,082	96,955,082	90,468,000	0	90,468,000	646,674,620	3,465,620	465,250,000	12,109,000	167,960,000	0	0	0	0	0	0	0	0	0	0	
34	74,833,600	11,225,040	0	86,058,640	80,942,980	74,835,340	44,081,987	15,225,301	0	102,255,723	102,255,723	90,468,000	0																	

Summary of Financial Cost - Private Company

Year	Investment											O&M											Grand Total
	F/C				L/C				Grand Total	F/C				L/C				Grand Total					
	Construction Cost	Physical Contingency 15%	Price Contingency 0.0%	F/C Total	Construction Cost	Unskilled	Others	Physical Contingency 15%		Price Contingency 0%	L/C Total	Labor etc.	Price Contingency 0.0%	F/C Total	Labor etc.	Environmental Consideration	Domestic		Rent	Loyalty	Price Contingency 0%	L/C Total	
1	67,294,000	10,094,100	0	77,388,100	71,720,000	442,000	71,278,000	10,758,000	0	82,476,000	159,866,100	0	0	35,576,140	35,576,140	0	0	0	0	0	35,576,140	35,576,140	
2	300,598,000	45,088,200	0	345,676,200	232,852,400	13,473,300	219,379,100	34,927,860	0	267,780,260	613,469,460	3,371,000	3,371,000	6,416,760	5,039,760	1,157,000	221,000	0	0	6,416,760	9,767,760		
3	433,209,000	64,981,350	0	498,190,350	313,493,300	21,415,900	292,077,400	47,023,995	0	360,517,295	856,707,645	9,133,000	9,133,000	20,481,290	7,229,290	12,559,000	894,000	0	0	20,481,290	23,614,290		
4	542,056,000	81,306,850	0	623,362,850	306,056,900	46,401,267	259,655,633	45,906,535	0	351,965,435	975,333,265	17,934,000	17,934,000	60,879,010	8,469,310	50,729,700	1,690,000	0	0	60,879,010	78,813,010		
5	671,595,000	100,739,250	0	772,334,250	434,546,200	67,171,097	347,374,103	65,181,780	0	489,726,980	1,272,011,230	26,600,000	26,600,000	134,544,060	11,494,760	120,118,300	2,991,000	0	0	134,544,060	163,144,060		
6	679,856,000	101,976,400	0	781,832,400	400,433,300	59,638,885	340,794,415	60,064,995	0	400,859,410	1,442,332,695	32,320,000	32,320,000	179,393,630	12,462,290	209,988,700	4,579,000	0	0	179,393,630	259,232,980		
7	518,811,000	77,321,650	0	596,132,650	272,016,000	72,534,322	199,481,678	40,902,700	0	312,820,700	909,463,360	33,374,000	33,374,000	491,985,000	13,185,200	461,092,800	7,707,000	0	0	491,985,000	522,707,000		
8	543,312,000	81,496,800	0	624,808,800	359,552,200	127,208,380	232,343,820	53,932,250	0	362,719,200	1,038,233,630	40,722,000	40,722,000	570,773,590	13,839,150	547,785,400	9,151,000	0	0	570,773,590	611,232,590		
9	535,905,000	80,385,750	0	616,290,750	315,408,000	74,296,236	241,111,764	47,311,200	0	362,719,200	979,939,950	40,459,000	40,459,000	672,006,600	15,066,740	645,116,760	10,759,000	0	0	672,006,600	714,399,500		
10	558,599,000	83,789,950	0	642,388,950	303,622,400	64,578,382	219,044,018	45,543,360	0	349,165,760	991,554,610	42,391,000	42,391,000	755,874,490	12,238,130	741,527,360	12,109,000	0	0	755,874,490	814,339,490		
11	295,490,000	44,319,000	0	339,779,000	200,969,000	121,195,984	79,773,016	30,145,350	0	231,114,350	570,893,350	48,465,000	48,465,000	784,362,740	8,821,740	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
12	11,628,000	1,744,200	0	13,372,200	86,074,400	49,825,028	36,249,372	12,911,160	0	98,985,560	112,357,760	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
13	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
14	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
15	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
16	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
17	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
18	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
19	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
20	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
21	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
22	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
23	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
24	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
25	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
26	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	784,362,740	7,480,120	769,456,000	12,109,000	3,966,000	0	784,362,740	827,216,740		
27	11,535,800	1,730,370	0	13,266,170	20,536,280	3,170,660	17,365,620	3,140,742	0	24,079,022	37,945,192	43,022,000	43,022,000	670,134,620	3,354,820	282,162,800	12,109,000	372,508,000	0	670,134,620	713,562,620		
28	23,473,400	3,521,010	0	26,994,410	25,754,460	5,161,560	20,592,900	3,983,189	0	41,289,387	95,940,897	43,335,000	43,335,000	774,882,260	3,810,920	286,746,340	12,109,000	470,214,000	0	774,882,260	818,217,260		
29	48,068,800	7,210,320	0	55,279,120	35,886,590	11,065,257	24,721,333	5,382,387	0	41,289,387	95,940,897	43,335,000	43,335,000	774,882,260	3,810,920	286,746,340	12,109,000	470,214,000	0	774,882,260	818,217,260		
30	67,028,800	10,054,470	0	77,083,270	50,387,240	21,292,419	29,094,821	7,558,086	0	57,945,326	135,029,596	43,705,000	43,705,000	881,946,360	4,112,220	239,320,140	12,109,000	586,374,000	0	881,946,360	925,650,360		
31	75,582,400	11,336,960	0	86,919,360	45,356,660	14,833,977	30,522,683	6,800,499	0	52,160,159	139,091,419	43,497,000	43,497,000	876,513,840	4,395,420	216,725,420	12,109,000	543,734,000	0	876,513,840	920,010,840		
32	70,726,000	10,608,900	0	81,334,900	45,657,800	15,777,594	29,880,216	6,846,670	0	52,506,470	133,841,370	43,157,000	43,157,000	861,965,360	4,650,020	233,494,040	12,109,000	265,608,000	0	861,965,360	898,060,600		
33	73,253,400	10,969,010	0	84,241,410	59,257,240	28,399,676	30,857,564	8,890,098	0	68,157,326	152,398,736	43,480,000	43,480,000	861,965,360	4,650,020	233,494,040	12,109,000	265,608,000	0	861,965,360	898,060,600		
34	65,372,200	9,805,830	0	75,178,030	45,581,200	16,364,947	29,197,153	6,934,180	0	54,252,182	136,776,952	43,077,000	43,077,000	861,965,360	4,650,020	233,494,040	12,109,000	265,608,000	0	861,965,360	898,060,600		
35	71,734,600	10,760,190	0	82,494,790	47,201,680	17,710,276	29,491,404	7,082,282	0	63,729,090	153,782,250	43,270,000	43,270,000	861,965,360	4,650,020	233,494,040	12,109,000	265,608,000	0	861,965,360	898,060,600		
36	60,915,800	9,137,370	0	70,053,170	56,416,600	26,399,387	29,017,203	8,312,480	0	63,729,090	153,782,250	43,270,000	43,270,000	861,965,360	4,650,020	233,494,040	12,109,000	265,608,000	0	861,965,360	898,060,600		
37	0	0	0	0	29,748,080	9,965,006	19,783,074	4,462,212	0	34,210,292	34,210,292	42,864,000	42,864,000	861,965,360	4,650,020	233,494,040	12,109,000	265,608,000	0	861,965,360	898,060,600		
38	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	861,965,360	4,650,020	233,494,040	12,109,000	265,608,000	0	861,965,360	898,060,600		
39	0	0	0	0	16,000,000	0	16,000,000	2,400,000	0	18,400,000	18,400,000	42,864,000	42,864,000	861,965,360	4,650,020	233,494,040	12,109,000						



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