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INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT DOCUMENT

final

No change from
Rev 1. Proposal.

TITLE	PARTICIPATORY TROPICAL FOREST DEVELOPMENT BY WOMEN IN INDIGENOUS COMMUNITIES
SERIAL NUMBER	PD 49/98 Rev.1 (F)
COMMITTEE	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY	GOVERNMENT OF GHANA
ORIGINAL LANGUAGE	ENGLISH

SUMMARY

The project aims at supporting the 31st December Women's Movement an NGO and indigenous Communities in Worobong South of the Eastern Region of Ghana to develop 1,200ha community plantation of Teak integrated with other indigenous timber species. This will improve the living standards of rural women living in the project area and also restore the integrity of a degraded forest reserve and consequently increase the supply of timber to the domestic and international interests.

EXECUTING AGENCY 31st DECEMBER WOMEN'S MOVEMENT IN COLLABORATION WITH FORESTRY DEPARTMENT

COOPERATING GOVERNMENT

DURATION 36 MONTHS

APPROXIMATE STARTING DATE UPON APPROVAL AND FUNDING

BUDGET AND PROPOSED SOURCES OF FINANCE	Source	Contribution in US\$	Local Currency Equivalent
	ITTO	589,534	
	Gov't of Ghana	243,800	
	TOTAL	833,334	

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PARTICIPATORY TROPICAL FOREST DEVELOPMENT BY WOMEN
IN INDIGENOUS COMMUNITIES

A. RELEVANT TO ITTO

1. Compliance with ITTO Objectives

This project proposal meets the following objectives established under Article 1 of the International Tropical Timber Agreement, 1994

- (c) To contribute to the process of sustainable development;
- (d) To enhance the capacity of members to implement a strategy for achieving exports of tropical timber and timber products from sustainably managed sources by the year 2000;
- (j) To encourage members to support and develop industrial tropical timber reforestation and forest management activities as well as rehabilitation of degraded forest land, with due regard for the interests of local communities dependent on forest resources
- (k) To improve marketing and distribution of tropical timber exports from sustainably managed sources.

2. Compliance with ITTO Criteria

The project proposal is consistent with the following ITTO criteria:

- (a) The project is related to the production of industrial tropical timber
- (b) It will yield benefits to the tropical timber economy as a whole and be relevant to producing as well as consuming members;

- CONTINUED ON
- (c) The project offers reasonable prospects for positive economic returns in relation to costs based on the concept of the involvement of women in community reforestation and forest management.

3. Relationship to ITTO Action Plan

The proposal is consistent with ITTO Action Plan and is related to the priorities established by the Committee on Reforestation and Forest Management, particularly in relation to the following strategies:

- (c) Instill a sense of urgency amongst consumer and producer nations to maintain tropical timber supply through sustainable forest management;
- (d) Demonstrate the economic viability and promote long term investments in sustainable forest management;
- (i) Encourage the development of sustainable timber production from tree plantations to rehabilitate and manage non-forest and degraded lands and to reduce the dependency on natural forests for timber supply
- (k) Facilitate the establishment of demonstration areas that reflect different models of management to enhance the transfer of technology and scientific knowledge
- (l) Encourage the full participation of local institutions in the development and implementation of projects.

B. Relevance to National Policies

1. Relationship to Sectoral Policies Affecting Tropical Timber

The objectives of the project are in consonance with the forest policy which aims at (i) managing industrial forest production and export earnings in accordance with sustained yield policy (ii) promoting conservation and tree planting on farms to counteract fuel wood shortage and ecological degradation and deterioration; (iii) strengthening the structural base of the sector and its institutions to enable them carry out the necessary policy reforms.

2. Relationship to Sub-Sectoral Aims and Programmes

The Forest and Wildlife Policy of Ghana emphasizes public participation in district forest management and protection, investment in tree planting and wood production, conservation, support for awareness and training by NGOs and trade associations. Since the local people own both the land and resources thereon, they have an unalienable right to a significant portion of the benefits accrued. The present laws place the responsibility for management of timber in the hands of Government and the communities especially in situation where the communities are found to be more efficient, they are encouraged and provided the where withal to do so.

In order to encourage local people to care about the forest and trees in their vicinities, it is appropriate that they be increasingly allowed to participate in decision-making on management of the resource and to benefit from the use of traditional non-timber products of the forest. It is important that

such use be based on sustainable management systems, and if possible enhanced by planting schemes which can expand availability of raw material and generate income-earning and industrial opportunities.

Forests play an important role in the lives of most Ghanaians and it is essential that all Ghanaians become aware of this importance. Through increased awareness, rural people can be encouraged to become involved in the protection, care and management of forest resources in their neighbourhood.

The project will create the enabling environment for the rural public to participate and fully enjoy the benefits of enhanced forest management.

Within the forest reserves, it is estimated that there are some 397,000ha, suitable areas for planting. There is no estimate for off-reserves and the savanna zone, as these are still subject to shifting cultivation. A nationwide planting target of 200,000ha had been proposed for establishment by annual plantings of 10,000ha, over the next 20 years on unproductive forest lands and in the savanna zone. If attained, the additional tree cover would occupy 10% of the present area of the forest estate. Under the proposed scheme, the intention is to mobilize a wide range of Ghanaians to undertake tree growing ventures within each district of the country. The tree growing scheme would be implemented largely by mobilizing private sector participation with Government's provision of technical advice, promotional incentives and public education to encourage the involvement of people in special projects that will afforest denuded lands, reforest under-stocked forest areas, plant and care for trees on farms and establish and manage industrial plantations.

3. Institutional and Legal Framework

The project will be implemented by of the 31st December Women's Movement (DWM), a nation-wide Non-Governmental Organization, with active collaboration of the Forestry Department.

The MFL is responsible for policy formulation whilst the FD is also responsible for implementation of forest conservation and management programmes. The DWM is an NGO with membership of over 2.0 million throughout the country. The movement operates at Unit, District, Regional and National levels and enjoys cooperation with state agencies and private organizations. It has a track record of successful management of a wide range of projects which aim at:

- the motivation of communities and rural people to conserve the environment;
- the use of wood-saving fume-free domestic stoves
- the establishment of woodlots for the production of fuelwood and fodder for agro-forestry systems, and for the amelioration of the climate;
- organization of seminars, workshops, symposia etc. on tree planting, maintenance of biodiversity and sustainable management of NTFPs

Among the numerous successful projects executed by the movement in the last couple of years include;

UNDP Sponsored Project on Population, Education and Income
Generation for Women in Ghana, a US \$365,000 project

Women and Community Development in Ghana, Sponsored by
African Development Bank, Total cost was Us \$2,797,581.00

Workshop on Women and Forestry: A look at African
Experiences, Sponsored by ITTO

PART II THE PROJECT

1. Origin

Ghana has established 266 forest reserves, 216 of which occupy 1,634,100 hectares in the high forest zone. The forest reserves were originally created for purposes of ecological stability, watershed management while seeking to guarantee the flow of goods and services for socio-economic development. Outside the gazetted areas, the forested land was widely exploited and deforested, leaving today an estimated 400,000 ha of forest cover (off-reserves) from which the bulk of timber is currently being extracted. Within forest reserves, there are some 15,000 ha of timber plantations (mainly Teak, Cedrela and Gmelina). Based on a 1986-94 forest inventory, forest reserves in the high forest zone have been classified according to the condition of the estate. apart from timber production and protection areas, 32% of the forest reserves is in a degraded state and needs both rehabilitation (by natural convalescence of some 122,000 ha to timber plantations) to enhance their productive capacity.

Areas of Forest Reserves in the High forest Zone

Forest Management Category	Hectare	Percentage
Timber production areas	762,400	47.0
Permanent protection area	352,500	21.0
Convalescence area	122,000	7.5
Conversion area	127,000	8.0
Not inventoried (conversion)	270,000	16.5
Total Reserve Area	1,634,100	100.00

The International Tropical Organization is financing a project on 'Women and Tropical Forest Development Programme' PD 27/94 Rev. 2(F). This project is being executed by the 31st December Women's Movement in collaboration with the Forestry Department of Ghana. This project is supporting a Non-Governmental Organization to establish three central nurseries in the three ecological zones of Ghana, namely the coastal savannah, high forest and guinea savannah.

It has however, been realized that these nurseries have to be supported by a plantation programme to be able to realize the full benefits of the project.

The major problems identified so far with PD 27/94 Rev. 2 (F) is the poor patronage in terms of marketing of the seedlings produced.

As at September, 1997, over 500,000 seedlings of *Triplochiton Sclerexylon*, *Tectona grandis*, *leuceana leucocephala*, *ceiba pertandra* and cashew have been produced in the three nurseries at Weija, Eduaben and Vca.

Marketing of these seedlings have been slow. It is therefore proposed that alongside promoting the sale of these seedlings, plantations could be established so that seedlings that are not sold would go into the plantations to support Ghana's tropical reforestation programme.

2.0 Project Objectives

2.1 Development Objectives

To support community-based tropical reforestation of degraded forest lands which will help to improve the living standards of the rural women.

2.2 Specific Objective

1. To support the strengthening of community organizations and local institutions to achieve sustainable management of their forests.
2. To support the implementation of community plantation programmes in degraded areas.

3.0 Project Justification

3.1 Problem to be Addressed

Ghana's forest and logging sector contributes about 6 percent of total GDP and ranks third, next to minerals and cocoa, among commodity exports. Forests play an important role in supplying all the country's timber needs and a major part (75 per cent) of its energy requirement.

If Forestry is to maintain its role in the economy, it is important that sustained management be carried out effectively.

There are three main ecological zones in Ghana. Coastal savanna, high forest and guinea savanna. All three regions have suffered extensive forest degradation in recent years and are experiencing local shortages of timber for domestic and industrial purposes.

Shifting cultivation, logging and bushfires have left about half of reserved forests in various stages of degradation. These degraded forests are characterized by eroded or nutrient deficient soils, hydrologic instability, reduced primary productivity and low biological diversity. The goal of rehabilitation of degraded forests is therefore to facilitate, accelerate and direct natural succession so as to increase biological productivity, reduce erosion, increase soil fertility and increase biotic control within the recovering forest. Among the many proposals to remedy the situation is to support community based efforts to establish plantations within the degraded areas using carefully selected indigenous and exotic species.

In Ghana, the Forestlands are owned by the communities with the Forestry Department exercising management responsibilities. Unfortunately the early balance between the three main interests in the resource; environmental protection, industrial production and community maintenance had clearly been lost. The communities were alienated from forest management and this has led to the present state of degradation.

New policies and new relationships which seek to involve local communities in forest management have been put in place. This system of collaboration seeks to re-establish the local communities as owners of the resource and as working partners in support of more equitable and efficient forestry.

Under a new legislation for timber production, the resource owning community will be consulted before any area is given out for timber production under a contract system which requires that the concessionaire should enter into a social responsibility agreement with the resource owning community.

Throughout African rural society, women are actively involved in forest resource gathering, processing and marketing, particularly fuelwood for domestic energy. Women are major caretakers and users of forests. African women are leading protagonists in the use of natural forest primary products.

Besides fuelwood and charcoal, the forest provides women with various fruits, leaves, gums, oil, and medicinal products which they sell in raw or processed form.

Despite the crucial role women play in the management and use of forests, forestry is typically regarded as a man's profession. This project will alter this false perception.

3.2 Location of the Project

The project will be carried out in the Worobong South Forest Reserve which has been degraded by bush fires.

The Forestry Department and the Communities have agreed to release 1,200ha of the reserve to the 31st December Women Movement to undertake a reforestation project. Agreement to this effect has been concluded.

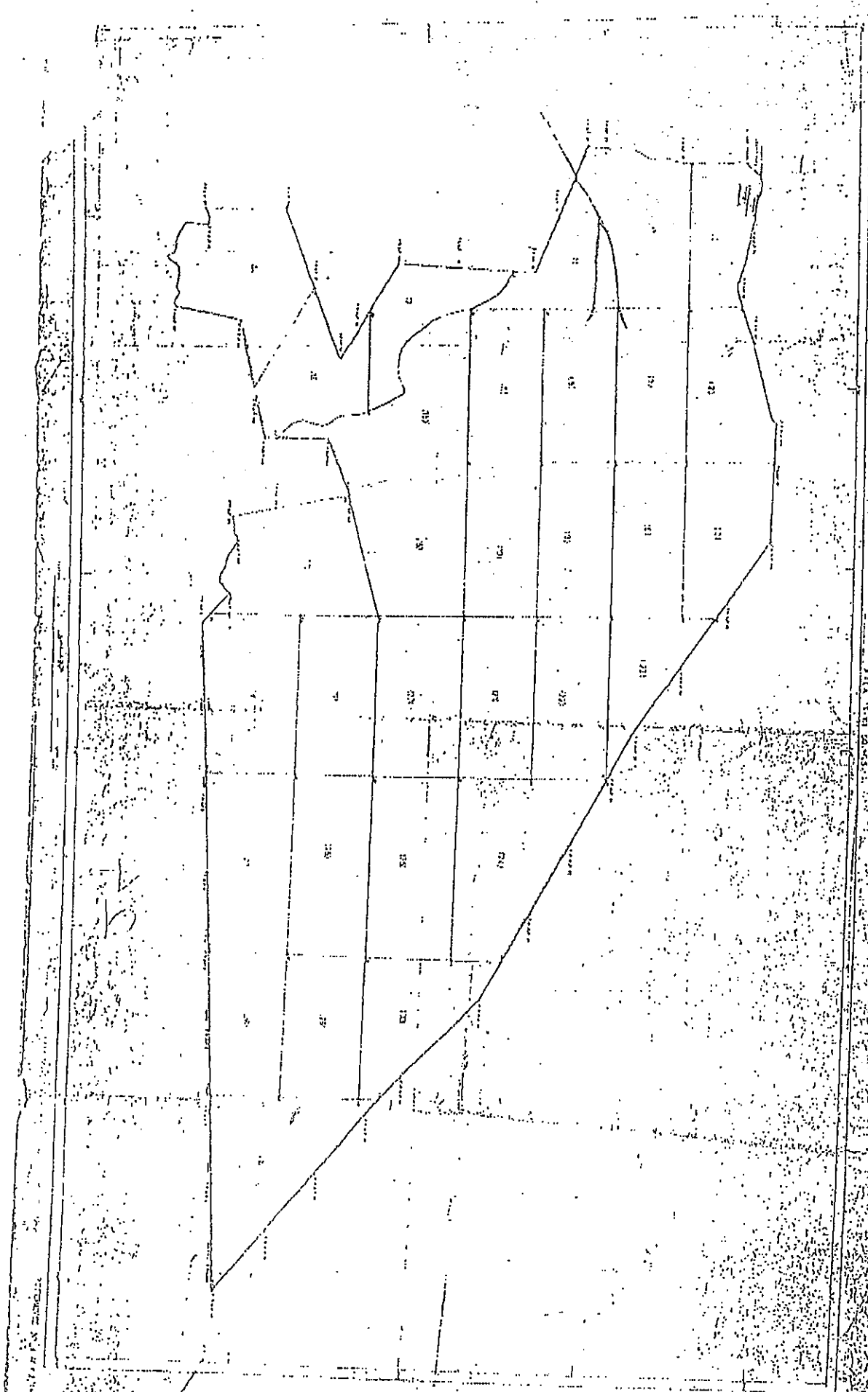
The reserve lies within the moist semi-deciduous zone. The zone lies between latitude 4° 3' and latitude 8° in the southern part of Ghana. The mean annual rainfall ranges between 1250 - 1500mm. The soils are of the Ochrosol type. This soil type is very ideal for teak cultivation.

Cocoa and other crops are very much evident all over the moist semi-deciduous forest. The inhabitants are mainly farmers and their farming activities are mainly restricted to subsistence agriculture.

Communities within the project area include:- Mianya, Feyiase, Ayigbe Town, Matahcko, and Ankasi.

FILE PLAN OF REFUGEE ACTION PROJECT FOR 31ST DECEMBER WOMEN MOVEMENT

WOROBO NG SOUTH FOREST RESERVE
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3.3 Other Relevant Aspects of the Pre-project Situation

The 31st DWM have demonstrated clear commitment and interest in the production of seedlings and establishment of plantations throughout the country. The project PD 27/94 Rev. 2 (F) concentrated on the establishment of three central nurseries in the three ecological zones of the country. However it is now necessary to assist the communities to establish plantations which will utilize the existing nurseries which were established under PD 27/94 Rev. 2 (F). This will be done with the active collaboration of the Forestry Department.

Cooperation between the DWM and the Forestry Department is already a reality and was amply demonstrated during PD 27/94 Rev. 2 (F). The women have gained a lot of experience in nursery establishment.

3.4. Land and Tree Tenure

The land in the project area belongs to the stools who hold them in trust for the people. According to the new forest policy planted trees will become the property of the planter. The plantation is located in a degraded Forest Reserve and an agreement between all the interest groups has been worked out, in terms of sharing of the benefits.

3.4.1 Community Involvement

Widespread occurrence of degraded forest lands due to excessive cutting of trees and abandoned shifting cultivation areas is common in Ghana. One promising approach to reverse this trend is to raise community awareness on forest values, and to provide opportunities to the villagers to participate in the forest management.

3.5 Intended Situation After Project Completion

The following situations are expected to result from the implementation of this project.

- institutional capability of DWM for effective delivery of sustainable management concept among women developed;
- local communities trained and involved on forest plantations;
- improved cooperation between government organizations in the forestry sector, Non-Governmental Organizations (eg. DWM) and local communities;
- process of recuperation of degraded areas in the region, by reconverting into forests, initiated;
- increased future availability of timber produced from sustainable sources, and reduction of pressure over the natural tropical forests;
- project will serve as a model for other environmental NGOs

3.6 Target Beneficiaries

The main beneficiaries of the project will be:

- local communities that will be involved in a new economic activity, involving collection of seeds and plantation establishment;
- rural women, particularly carctakers and users of forests

- individuals, groups and NGOs engaged in rural forestry activities;
- all those concerned with forest conservation and the environment as a whole, as degraded areas will be recovered;
- the Forestry Department
- other groups in other regions of Africa involved in similar initiatives;
- the timber industry.

Throughout the life of the project, the implementing agency will maintain close links with the intended beneficiaries.

3.7. Project Strategy

3.7.1 Reasons for Selection

The Government of Ghana is committed to increasing the country's tree cover by 10% of total land area over a period of 10 years. The wider development objectives of the proposed reforestation programme will make a significant contribution to the Government's long-term aim of expanding the nation's forest estate.

There are two key strategies underlying the project design. Support to community-based and private sector reforestation and the involvement of women in the development of Ghana's forest resources. The two strategies are complimentary and indeed are inter-linked.

Most of the land available for planting are stool lands, that is land held by the local traditional authority for the benefit of the community. It is only by utilizing these lands, which constitute about 84% of the total land area of the country can the country's forest estate be significantly expanded. About 75% of the forest in these areas have been significantly degraded due to shifting cultivation, excessive logging, and bushfires.

It should also be noted that private sector timber interests have also recently began leasing areas of land for plantation establishment. It is therefore clear that if a tropical reforestation program is to succeed it has to be targeted at community and private sector interests.

Acting alone, the GOG is unlikely to be able to make significant progress on tropical reforestation. Its efforts have to be complimented by those of local community groups, the private sector and NGOs. In particular the GOG needs to utilize the existing network of community based volunteers to publicize and support local tree planting initiatives. The 31st DWM is ideally placed to provide this service.

Studies have also indicated that rural communities are more receptive to tree planting when it is integrated with food production. Therefore, fruit trees production have also been incorporated into the project design.

3.7.2 Lessons Drawn from Past Evaluation

This project proposal is a follow-up to PD 27/94 Rev. 2(F).

In the past, forest management was mainly derived from central planning, with major emphasis on timber production for the state. Public education and extension services had been given low priority in forestry, and as a

result, local communities are scarcely involved in managing the forests. Since late 1980s, the Forestry Department has given increasing attention to the participatory approach in forest management. It realizes very well that the Government alone cannot cope with all issues that need to be resolved for sustainable development of forests. Accordingly, private investment and people participation in the forestry sector development activities are being encouraged and promoted.

It has also been realized from PD 27/94 Rev. 2 (F) that relying on communities to collect seedlings and plant on their farms sometimes leads to a situation whereby large stocks of seedlings are not distributed in time and therefore remain in the nurseries for too long a time. This has been due to the fact that the communities have problems with transporting of seedlings to the field as well as the high cost of land preparation. This project intends to correct this situation by utilizing all seedlings produced under PD 27/94 Rev. 2(F) for the establishment and development of community plantation within the High Forest Zone, close to one of the nurseries established under PD 27/94 Rev. 2 (F).

3.7.3 Technical and Scientific Aspects

The project has been designed to be implemented using collaborative Forest Management and rural/agroforestry technique. It will also rely on the phenological studies on various indigenous and exotic species conducted by the Forestry Research Institute of Ghana to overcome the technical and biological constraints that inhibit the development of indigenous species. It will utilize the existing knowledge for the propagation of *Triplochiton Sclerexylon*.

The project will also benefit from FD's expertise in nursery management and plantation establishment.

The people in the communities will assist the DWM and the Forestry Department in the establishment and management of the plantations. They will undertake the clearing, pegging and planting. They will also construct fire lines and fighting of bushfires. Interested community groups and individuals would be employed to work in the plantations and nurseries. While participating in these forestry activities, the communities will continue with their normal agricultural activities and also invest in their own plantations.

The project site is degraded forest where natural regeneration is not possible due to the extent of degradation. The only way, this could be reforested is through artificial regeneration. Teak has been successfully established under similar conditions. The Teak will be interspersed with *Triplochiton scleroxylon* (obeche).

3.7.4 Economic Aspects

The project will provide economic benefits to those directly involved in the project through employment and the supply of forest products cultivated in community-based plantations. The sale of these products will provide economic benefit to the DWM, the District Assemblies and the Forestry Department.

The sustainability of the project will depend on the social partners ploughing back the profits from this project into new plantation establishment thereby increasing the forest cover and ensuring that

timber production come from sustainably managed sources as contained in ITIA 1994.

This will be done through the establishment of a sustainability fund into which a 2/3rds of the proceeds from the plantation will be deposited into a Forest Plantation Fund and managed by the social partners - the Forestry Department the 31st December Women's Movement and the Communities within the project area.

This fund will be used to establish other plantations in degraded forest areas.

The project will also embark on community education programmes in all the degraded forest areas of the country. This will be done through the acquisition of a cinema van and the production of documentaries for the long term sustainability of the project.

3.75 Environmental Aspects

The project will be located in deforested areas and as such will contribute significantly in general terms towards environmental conservation in the areas. Those environmental aspects to be enhanced include:

- reduction in the destruction of new lands
- reduction in hydrological and evapotranspiration changes as well as protection of land from erosion, bush fires and other natural hazards
- protection of water bodies for effective functioning of the ecosystem.

Sustainability of the environmental outputs and values especially in terms of watershed management and biodiversity, depends on the willingness of communities to manage their forests or have them managed. This is surest way of ensuring environmental protection and forest sustainability.

3.7.6 Social Aspect

The concept of the project and its design are developed in the light of a number of recent studies of the sociological aspects of forestry, timber related matters and customary land tenure system.

Community participation at each stage of the project cycle, is therefore a sine qua non of this project. Community involvement in the planning stage of the project is particularly critical. Start-up workshops will be held in each community to create local awareness of the project to enable communities to participate fully in the project. This will be done through the extensive network of the 31st DWM.

On-going project monitoring, particularly beneficiary contact monitoring will be an important activity throughout the life of the project. The 31st DWM network will provide the channel through which communities can report back on project progress and impact.

3.7.7 Managerial Aspects

The 31st DWM will implement the project in collaboration with the Forestry Department. The Forestry Department will provide technical

advice in project planning and monitoring as well as advice on the day to day operations of the project activities. Under PD 27/94 Rev.2(F) some women were trained by the Forestry Department in the nursery establishment and management. More women will be trained by the Department under this project. The DWM will be responsible for implementation of project activities. The DWM extensive network at the village, district, regional and national levels as well as their extensive experience in community-based development initiatives makes them an ideal partner for this project.

A Project Directorate will be established to oversee and guide the project. In addition, an International Project Steering Committee will be constituted. This will comprise representatives from the following organizations:

31st December Women's Movement

Forestry Department

Ministry of Lands and Forestry

Ministry of Agriculture

District Authorities of the project area

ITTO Secretariat

Donor Government(s)/Agencies

3.8 Reasons for ITTO Support

3.8.1 ITTO Aspects

ITTO's assistance is being sought because the proposed project is a follow up of PD 27/94 Rev.2(F). It is also a follow-up to project PD 119/91 Rev. 1(F) - Workshop on Women and Forestry: A look at the African Experience. The experiences of these projects which were supported by

the ITTO have made the ITTO the obvious choice for assistance when it comes to seeking a "fast-track" less cumbersome support in implementing projects of this nature.

The proposal is also relevant to the ITTO priorities and action plan.

3.8.2 Relationship to Relevant Action Supported by Other Donors

The project relates to the following interventions:

- i. The Rural Forestry Component of the World Bank sponsored Forest Resource Management Project
- ii. The ODA assisted collaborative Forest Management System.

3.9 Risk

The major risks associated with this project are

- (1) that Government continues to support private and community reforestation initiatives.
- (2) threat of bushfires. However this has been taken care of in the project planning through the implementation of a fire management plan and bushfire prevention programme.

4.0 PROJECT OUTPUTS

4.1 Specific Objective 1

To support the strengthening of community organizations and local institutions to achieve sustainable management of their forests.

Output 1.1

Management and administrative structure of DWM and district Environmental Management Unit in the project area strengthened.

Output 1.2

Technical capabilities of DWM in Forest Management in the District strengthened.

4.2 Specific Objective 2

To establish 1,200ha of community plantation in a degraded forest area.

Output 2.1

800 ha of teak plantations in pure stands established for industrial supply.

Output 2.2

400 ha of agroforestry plantation with food crops of farmers choice and with *Sena siamea* and *Triplochiton scleroxylon* established.

5.0 ACTIVITIES AND INPUTS

OUTPUT 1.1	INPUTS
<p>Activity 1.1.1</p> <p>Training of indigenous DWM members in Participatory Rural Diagnosis and Community Forestry Practices</p>	<p>5mm Participatory Rural Diagnosis and Community Forestry Expert</p>
<p>Activity 1.1.2</p> <p>Establish Collaborative Forest Management Groups for forest protection and management</p>	<p>1 mm: Project Team</p>
<p>Activity 1.1.3</p> <p>Educate and disseminate information to rural women on the need to establish plantations and preserve the natural forest</p>	<p>Documentary materials etc. Cinema Van</p>
Output 1.2	
<p>Activity 1.2.1</p> <p>Train District Assemblies and DWM members within the project area in plantation establishment and agroforestry system</p>	<p>Plantation Expert 3mm.</p>
Output 2. 1	
<p>Activity 2.1.1</p> <p>Carry out a detailed soil-site survey of the land identified for reforestation</p> <p>2.12 Clear site, including burning, aligning and pegging</p> <p>2.1.3 Demarcate plantation blocks with different spacing and staking</p> <p>2.14 Raise 800,000 seedlings of Teak from</p>	<ul style="list-style-type: none"> - 6mm of 2 Field Assistants - 2.0mm Project Director - Sub-contract of laboratory for soil analysis - 2mm of labourers for soil samples - 12 Travels - 2mm Soil Scientist - Purchase one 4WD - 6mm Plantation Manager - 1 Tractor + 2 Trailers (Sub contract) - 5,200 m/d labours for site preparation

existing nurseries	
2.15 Purchase 200,000 seedlings of Obeche and develop and train communities on propagation techniques	
2.1.6 Carry out planting, patching, tending and fire protection	<ul style="list-style-type: none"> - 3mm planting officer(3) - Fuel and maintenance for Tractor - 14,900 m.d for labours in transporting and planting - 36 m/m of 6 field Assistants - 3mm of Plantation Expert
Activity 2.1.7 Maintain plantation	<p>Sub-contract</p> <ul style="list-style-type: none"> ◆ Main road construction of 20m width (including clear sites) 20Km ◆ Fire strip construction of 15m width ◆ Road and Fire strip maintenance ◆ Fire post-guard (10m height) 4 places <p>Purchase</p> <ul style="list-style-type: none"> ◆ motorbikes for control and communication ◆ Desk-Top Computer ◆ equipment for communication and fire control <p>Replanting (Less than 30%)</p> <p>18,000 m/d for labour for replanting, guarding weeding and other maintained works.</p>
OUTPUT 2.2	INPUTS
Activities	
2.2.1 Conduct socio-economic survey around	3mm Agroforestry Project Staff

project area for needs assessment	
2.2.2 Demarcate 400ha for Agroforestry plantation	
2.2.3 Planting of seasonal Agricultural food crops, Obeche and Cassia Siamea	Local Community labour, Project staff, Seeds for Food Crops, Obeche seedling, Cassia Simaea seedlings, cashew seedlings

6.0 LOGICAL FRAMEWORK

The project logical framework presenting indicators, means of verification and assumptions required to achieve expected project outputs is shown in Annex 1

7.0 WORK PLAN

The project workplan which will guide the project management and implementation is also shown in Annex 2.

8.0 INSTITUTIONAL ARRANGEMENT FOR PROJECT EXECUTION AND OPERATIONS

8.1 MANAGEMENT STRUCTURE

The project will make use of the management structure, and administrative experience of the DWM. A project manager will be appointed by the DWM. Day to day management of project activities will be the responsibility of the project manager, nursery and plantation managers. They will be supported by Field Assistants.

Extension services will be provided entirely by the existing DWM structure. Extension officers will be trained during the project and will receive on-going

support and back-up from the project manager and technical experts employed for the project.

Implementation of the project will be guided by a project directorate with representation from DWM and FD. The directorate will receive reports from the project manager and will have the authority to intervene directly in project activities.

The FD will provide services to the project in the form of financial administration, technical advice and training support.

By the end of the project period, the post of project manager and forestry advisors will no longer be required. Nursery and plantation managers will be operating independently with all administrative support provided by the DWM.

Consultancies in support of project activities will be commissioned directly by the Project Manager in consultation with the directorate.

8.2 Future Operation and Maintenance

The DWM has considerable experience in the management and administration of small enterprises. Therefore they will be well placed to continue operation and maintenance of the plantations.

8.3 Key Staff

Key project personnel include:

Mr E. O Nsenkyire, Chief Conservator of Forests,

Mrs Edith Abruquah M.Sc. Social Forestry with emphasis on women,

Ms Sherry Ayitey of 31st December Women's Movement.

The terms of reference for the key project consultants are presented in Annex III.

9.0 PRIOR OBLIGATION AND PRE REQUISITES

There are no prior obligations or pre-requisites.

10.0 POSSIBLE FUTURE ACTIONS

In the course of project implementation, future actions needed are likely to be identified. DWM and FD are committed to the proposed programme and will meet all future obligations if they arise.

PART IV

OVER ALL PROJECT BUDGET

ENT/ACTIVITY	UNIT	QTY. PER YEAR			UNIT COST US\$	YEAR 1	YEAR 2	YEAR 3	ITIO US\$	DWM US\$	TOTAL US\$
		1	2	3							
Personnel											
Project Manager	mm	12	12	12	500	6,000	6,000	6,000	18,000	-	18,000
Plantation	mm	24	24	24	300	7,200	7,200	7,200	21,600	-	21,600
Assistant (3)	mm	36	36	36	200	7,200	7,200	7,200	21,600	-	21,600
Trainers (1)	mm	12	12	12	200	2,400	2,400	2,400	7,200	7,200	7,200
Five Personnel											
Contractor	mm	12	12	12	500	6,000	6,000	6,000	18,000	18,000	18,000
Trainer	mm	1	1	2	2,000	2,000	2,000	4,000	8,000	-	8,000
Secretary	mm	12	12	12	200	2,400	2,400	2,400	7,200	7,200	7,200
Consultants											
1/Agroforestry	mm	3	2	1	2,000	6,000	4,000	2,000	12,000	-	12,000
Education Experts	mm	3	2	1	2,000	6,000	4,000	2,000	12,000	-	12,000
Scientists	mm	2	-	-	2,000	4,500	-	-	4,000	-	4,000
Surveys	m/d	5,200	5,200	5,200	3	26,000	26,000	26,000	78,000	-	78,000
Training Workshop	bulk	-	-	-	-	-	10,000	-	10,000	-	10,000
Management											
Training Workshop in	bulk	-	-	-	-	-	10,000	-	10,000	-	10,000
Prevention											
Total									195,200	32,400	227,600

NO.	COMPONENT/ACTIVITY	UNIT	QTY. PER YEAR			UNIT COST US\$	YEAR	YEAR	YEAR	ITTO	DWM	TOTAL
			1	2	3							
20	Sub-Contract											
21	Laboratory Mm Analysis of Soil Samples	2				1000	2,000			2,000		2,000
22	Land Preparation	Bulk							30,000			30,000
23	Fire Strip Construction	Km			2	5,000		10,000				10,000
29	Component Total								42,000			42,000
30	Duty Travel											
31	D. S. A.											
	31.1. Project Manager	mm	12	12	12	100	1,200	1,200				3,600
	31.2. Nursery Manager(2)	mm	24	24	24	100	2,400	2,400				7,200
	31.3. Field Officer(3)	mm	36	36	36	100	3,600	3,600				10,800
	31.4. Drivers (1)	mm	12	12	12	100	1,200	1,200				3,600
	31.5. Labourers	m'd	15,300	15,300	15,300	2	30,600	30,600				91,800
32	Transport Cost											
	32.1. Running of 4x4 WD	bulk	1	1	1	12,000	12,000	12,000				36,000
	32.2. Running of Motor-bike (12)	bulk	1	1	1	3,000	3,000	3,000				9,000
	32.3. Running of Cenima Van	Per/yr	1	1	1	10,000	10,000	10,000				30,000
39.	Component Total								96,600		95,400	192,000
40	Capital Items											

NO.	COMPO/ACTIVITY	UNIT	QTY. PER YEAR			UNIT COST US\$	YEAR	YEAR	YEAR	ITTO USS	DWM US\$	TOTAL USS
			1	2	3							
41.	Prem	months	12	12	12	1,000	12,000	12,000	12,000	36,000	36,000	
42.	Land	Bulk								50,000	50,000	
43. Capital equipment												
43.1.	Vel: (4x4 WD)	1	1	-	-	25,000	-	-	25,000	-	25,000	
43.2.	Cira Van	1	1			30,000			-	30,000	30,000	
43.3.	McKees (12)	6	6	6		3,000	18,000	18,000	36,000	-	36,000	
43.4.	D Top Computer with Prin	1	-	1	-	4,000	-	4,000	4,000	-	4,000	
43.5.	Co. Equipment		2			4,000	-	8,000	8,000	-	8,000	
43.6.	Fic-equipment bulk					20,000	-	-	20,000	-	20,000	
43.7.	Niry Materials & Tools					10,000	-	-	10,000	-	10,000	
49	Compon Total					73,000	30,000	30,000	103,000	116,000	219,000	
50	Consuma											
51	Raw Matls											
51.1.	h Provenance Teak See					30,000			30,000	-	30,000	
51.2.	Tecktion Seed-ings					10,000			10,000	-	10,000	
51.3.	Wden Posts for Plot Derrition					2,000			2,000	-	2,000	
52	Spares											
52.1	Vel Spares							5,000	5,000	-	5,000	
53	Utilities											
53.1	Haing Wells with Pumps		3			10,000	30,000		30,000		30,000	
54	Office Sties											

NO.	COMPONENT/ACTIVITY	UNIT	QTY. PER YEAR			UNIT COST US\$	YEAR	YEAR	YEAR	ITTO US\$	DWM US\$	TOTAL US\$
			1	2	3							
59	54.1. Stationery for bulk Workshops and Training					5,000	1	2	3	5,000		5,000
60	Component Total									82,000		82,000
61	Miscellaneous											
61	Sundry					10,000						
69	Component Total									10,000		10,000
70	ITTO Monitoring, Evaluation & Administration									10,000		30,000
71	Monitoring & Evaluation									10,000		30,000
72	Administrative Cost (5.5%)									30,734		30,734
79	Component Total									60,734		60,734
	GRAND TOTAL									589,534	243,800	833,334

PROJECT BUDGET BY ACTIVITY

ACTIVITY	PROJECT PERSONNEL	SUB-CONTRACT	DUTY TRAVEL	CAPITAL ITEMS	CONSUMABLE ITEMS	MISCELLANEOUS	ITTO MONITORING	TOTAL
1.1.1 Training Indigenous DWM Women in PRD & Community/Agroforestry Practices	12,000				2,000			14,000
1.1.2 Establish collaborative Forest Management Groups	3,400		700					
1.1.3 Disseminate and educate rural women on the need to establish plantations	12,000	-	28,800	30,000				4,100
1.2.1 Train DA's and DWM members in plantation establishment	12,000				3,000			70,800
2.1.1 Carryout detailed soil site survey	10,400	2,000		25,000				15,000
2.1.2 Acquire land, clear site, including burning aligning and pegging	32,000	30,000	36,000	56,000	15,000			37,400
2.1.3 Purchase and raise 800,000 seedlings of Teak, 200,000 seedlings of Obeche from existing nursery	38,200			20,000	22,000			169,000
2.1.4 Carryout planting, patching, tending and fire protection	18,800	10,000	51,000	36,000				80,200
2.1.5 Maintain Plantation	64,200							115,800
2.2.1 Conduct socio-economic survey around project area for need assessment	6,000	-	60,800	39,000	30,000	10,000		204,000
2.2.2 Planting of seasonal Agric food crops in Agroforestry plantation	18,600			13,000	10,000			20,700
ITTO Monitoring & Evaluation								41,600
ITTO Administrative Cost (5.5%)							30,000	30,000
GRAND TOTAL	227,600	42,000	192,000	219,000	82,000	10,000	60,734	833,334

CONSOLIDATED ANNUAL BUDGET - ITTO CONTRIBUTION

NO.	DESCRIPTION	YEAR 1	YEARS 2	YEAR 3	TOTAL
10	PROJECT PERSONNEL				
	11. National Experts	20,400	20,400	20,400	61,200
	12. Administrative Personnel	2,000	2,000	4,000	8,000
	13. National Consultant	16,000	8,000	4,000	28,000
	14. Other Labour	26,000	26,000	26,000	78,000
	15. Training	-	10,000	10,000	20,000
	19. Component Total	64,400	64,400	64,400	195,200
20	SUB CONTRACTS				
	21. Laboratory Analysis of Soil Samples	2,000	-	-	2,000
	22. Land Preparation	30,000	-	-	30,000
	23. Fire Strip Construction	-	-	10,000	10,000
29	Component Total	32,000	-	10,000	42,000
30	DUTY TRAVEL				
	31. Daily Subsistence Allowance	7,200	7,200	7,200	21,600
	32. Transport Costs	25,000	25,000	25,000	75,000
	39. Component Total	32,200	32,200	32,200	96,600
40	CAPITAL ITEMS				
	41. Premises	-	-	-	-
	42. Land	-	-	-	-
	43. Capital Equipment	73,000	30,000	-	103,000
	49. Component Total	73,000	30,000	-	103,000
50	CONSUMABLE ITEMS				
	51. Raw Materials	42,000	-	-	42,000
	52. Spares	-	-	5,000	5,000
	53. Utilities	30,000	-	-	30,000
	54. Office Supplies	5,000	-	-	5,000
	59. Component Total	77,000	-	5,000	82,000
60	MISCELLANEOUS				
	61. Sundry	10,000	-	-	10,000
	69. Component Total	10,000	-	-	10,000

	SUB-TOTAL	289,800	129,800	112,800	528,800
70	ITTO ADMIN, MONITORING AND EVALUATION				
	71. Monitoring & Evaluation				30,000
	72. Administrative Costs				30,734
	79. Component Total				
	GRAND TOTAL				\$589,534

LOGICAL FRAMEWORK

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p><u>Development Objective</u></p> <p>To support community-based and private sector tropical reforestation of degraded forest lands in order to improve the living standards of rural women</p>	<p>Participatory forest management system implemented</p> <p>Improvements in the incomes of participatory indigenous community members</p>	<p>Progress reports</p> <p>Socio-economic survey of income levels</p>	<p>Government policy continues to encourage private and community involvement in forest management</p>
<p><u>Specific Objective 1</u></p> <p>To support the strengthening of community organizations and local institutions to achieve sustainable management of their forests</p>	<p>District Assemblies and District Women's Movement manage their forest resources</p>	<p>Consultation with District Assembly and DWM.</p> <p>Project progress report</p>	<p>DA and DWM will have sustained interest in forest management</p>
<p><u>Specific Objective 2</u></p> <p>To support the implementation of community plantation programmes in degraded areas</p>	<p>Community reforestation plan being implemented</p>	<p>Project progress reports</p>	<p>Community interests in forest management will be sustained.</p>
<p><u>Output 1.1</u></p> <p>Management and Administrative Structure of DWM and District Environmental Management Units in the project area strengthened</p>	<p>Forest Communities of DWM and District Assemblies constituted with clear mandate</p>	<p>- Visits to communities within the project</p> <p>- Project progress reports</p>	<p>There is interest in forest management among the communities</p>
<p><u>Output 1.2</u></p> <p>Technical Capabilities of DWM in Forest management in the Districts/Communities strengthened</p>	<p>- DWM provide support to the local communities</p> <p>- No. of women involved in afforestation</p> <p>- No. of agroforestry farms in the community</p>	<p>- Visits to the communities</p> <p>- Project progress reports</p>	<p>District Assemblies give priority status to forestry and environmental issues.</p>

<p>Output 2.1 1,000 ha of Teak plantation in pure stands and in mixture with Triplochiton Sclerxylong (obeche) established for industrial supply</p>	<p>1. Access of plantations established 2. Type of species planted</p>	<p>- Field Visits to project site - Reports and Records - ITTO Monitoring & Evaluation Reports</p>	<p>Funds are available and local people provide active participation</p>
<p>Output 2.2</p>			
<p>200ha Agroforestry plantation with food crops of farmers choice and with Sena siamea and obeche established</p>	<p>- Area of pure stand teak plantation - Area of mixed stands of teak and Obeche plantation - Area of agroforestry plantations</p>	<p>- Field Visits to project site - Progress reports - Project completion report</p>	<p>Funds are available and Government continues to support community participation in forest management</p>
<p>ACTIVITIES 1.1.1 Training of indigenous DWM members and District Assemblies in participatory Rural Diagnosis Community Forestry practices</p>	<p>- Training materials - No. of Trainees</p>	<p>- Progress report - Workshop report</p>	<p>Local people are interested in training in community forestry</p>
<p>1.1.2 Establishment collaborative forest management groups for forest protection and management</p>	<p>No. of Groups established</p>	<p>Progress reports</p>	<p>Cooperation from local communities</p>
<p>1.2.1 Train District Assemblies and DWM members in plantation establishment and agroforestry system</p>	<p>No. people trained Training materials</p>	<p>Training report</p>	<p>Communities interested in training</p>
<p>1.2.2 Conduct workshop on Nursery practices</p>	<p>No. of workshop participants</p>	<p>Workshop report</p>	
<p>2.1.1 Carryout a detailed soil-site survey of the project area</p>	<p>Laboratory results of soil test</p>	<p>Progress report</p>	<p>Sub-contractor accepts terms in conditions of contract</p>
<p>2.1.2 Clear site, including burning, aligning and pegging</p>	<p>Plantation site Land Preparation</p>	<p>Field inspection Reports Maps</p>	
<p>2.1.3 Demarcate plantation blocks with different spacing and staking</p>	<p>Formation of plantation blocks</p>	<p>Field reports</p>	

2.1.4	Raise 80,000 seedlings of Teak, and 20,000 seedlings of Sena siamea from existing nurseries	Seedlings planted in nursery	Reports Field Visits	Existing nurseries functioning properly
2.1.5	Purchase 22,000 seedlings of Obeche and develop and train communities on propagation techniques	Seedlings planted	Reports Field Visits	Seedlings available to purchase
2.1.6	Maintain Plantation	Survival rate of planted seedling	Field Visits	Viabale and healthy seedlings were planted
2.2.1	conduct socio-economic survey around project area for needs assessment	Agroforestry systems being practiced by the communities	Field Visits	
2.2.2	Demarcate 200ha for Agroforestry plantation	Formation of plantation blocks	Field Visits	
2.2.3	Planting of seasoned agricultural food crops, obeche and Sena siamea	Cultivation of food crops Increased income of local communities within the project area	Baseline survey Records Field Visits	

WORKPLAN

REF. NO.	ACTIVITIES	Year (line 1)												Year (line 2)												Year (line 3)											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1.1.1	Train indigenous DWM and DA members in participatory Rural Diagnosis																																				
1.1.2	Establish collaborative Forest Mgmt. Groups for forest protection & fire prevention																																				
1.2.1	Train DWM in DA's in plantation establishment and agroforestry system																																				
1.2.2	Conduct Workshop on nursery practices																																				
2.1.1	Carryout detailed soil-site survey of project area																																				
2.1.2	Clear site, including burning, aligning and pegging																																				
2.1.3	Demarcate Plantation blocks with different spacings and staking																																				
2.1.4	Raise 80,000 seedlings on 1ha, 20,000 seedlings of Sena Siamea from existing nursery																																				
2.1.5	Purchase 22,000 seedlings of Obeche																																				
2.1.6	Carryout planing, patching, feeding and fire protection																																				
2.1.7	Maintain Plantation																																				
2.2.1	Conduct socio-economic survey																																				
2.2.2	Demarcate 200ha for agroforestry plantations																																				
2.2.3	Planting of Seasonal agricultural food crops. obeche and Sena Siamea																																				

TERMS OF REFERENCE FOR KEY PERSONNEL AGROFORESTRY EXPERT

1. The National Consultant on sociology has the responsibility:
- i. to conduct social and Economic Survey of local communities in and around the project area;
 - ii. to programme regular meetings and open dialogues with forest user groups and local people for the assessment of behavioural and attitudinal change of the villagers;
 - iii. to assist the national project leader in identifying the real needs of the local communities;
 - iv. to assist the national project leader and the local communities to select agricultural food crops and fruit trees for agroforestry
 - v. to conduct agroforestry training for local DWM members and Forestry Department personnel; and ...
 - vi. to prepare and submit completion report with recommendations for future action

Qualification: At least Master degree in Agroforestry, 6 years experience or more in the field of Agroforestry

2. **National Consultant on Plantation Forestry**

The National consultant on plantation Forestry has the responsibility;

- i. to develop detail operational plantation work plan for raising seedlings, planting, tending, maintenance and protection
- ii. to demonstrate nursery techniques for tree species to be planted by the project
- iii. to assist and work closely with the national project leader and silviculturist in developing and adopting tending operations for the plantations;
- iv. to assist the national project leader in conducting trainings on plantation management, fire management and prevention and nursery practices
- v. to prepare and submit report with recommendations for future maintenance of the plantations

Qualification: At least, Masters degree in plantation Forestry with 10 years experience or more in reforestation works

Duration: 3 man/month

3. **National Consultant on Soil Conservation**

The National Consultant on soil conservation has the responsibility:

- i. to develop guidelines for measuring changes in nutrient status of forest soils for the plantations.
- ii. to develop guidelines to monitor the impact of planting *cassia siamea* on nitrogen content and forest soil
- iii. to lay out run-off plots to measure surface soils loss from the plantations
- iv. to develop guidelines and procedures to monitor the changes in soil structure over time due to project activities; and
- v. to prepare and submit report at the end of the assignment.

Qualification: At least a Masters degree in soil conservation, with 6 years experience or more in soil conservation

Duration: 2 man/month