

Working Paper 3

**Activity plan to improve the
investment climate in the
Mozambican planted forest sector**

TA Project:
Improving the business climate for planted forests

5/21/2016

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List of Acronyms

CCP	Company-Community Partnership
CGRN	Community Natural Resource Management Committee
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
DPCA	Provincial Directorate of Environmental Coordination
DUAT	Portuguese acronym for: Acquired land use right (Direito de Uso e Aproveitamento de Terra)
FAO	Food and Agricultural Organization
FIP	Forest Investment Program
FNI	National Research Fund
FSC	Forest Stewardship Council
GoM	Government of Mozambique
IFC	International Finance Corporation
IIAM	Agriculture Research Institute
INE	National Statistics Institute
MAI	Mean Annual Increment
MASA	Ministry of Agriculture and Food Security
MITADER	Ministry of Land, Environment and Rural Development
NGO	Nongovernmental Organizations
PIREP	Portuguese acronym for: Technical and professional training sector (Programa Integrado de Reforma da Educação Profissional)
PPP	Public-private partnership
REDD+	Reducing Emission from Deforestation and Degradation
R&D	Research and Development
SADC	Southern African Development Community
SME	Small and Medium Enterprises
TA	Technical Assistance

1. INTRODUCTION

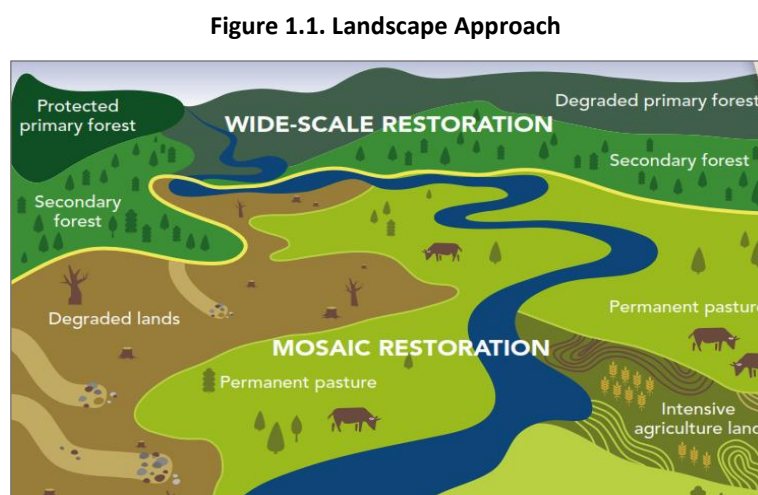
1.1 Background

1. The Government of Mozambique (GoM) aims to increase the area of commercial forest plantations from its current area of 60,000 ha to 1 million ha in 2030, requiring investments within the range of USD 2 to 4 billion from commercial private investors. Mozambique has been found to have the necessary characteristics required to develop a successful planted forest sector: (a) biophysical conditions which secure relatively high growth rates and competitive yields, (b) available land that can be forested without jeopardizing food security, (c) a growing timber market, and (d) a strong political will to enhance the planted forest sector, which has been formulated in the National Reforestation Strategy. However, the actual pace of investments has been slower than expected indicating shortcomings in the business climate. Therefore, it is crucial that the GoM—in collaboration with the private sector, development partners, and other stakeholders—mitigates investment barriers to support the creation of an enabling environment for the establishment of value-generating forest plantations (small-, medium- and large-scale plantations) and proactively removes other impediments.

2. This report presents an activity plan to improve the investment climate in the Mozambican planted forest sector, with a focus on commercial forestry which utilizes fast-growing tree species. Since the objective of these plantations is to support commercial timber production, forest plantations with purely ecological or landscape restoration objectives, such as the utilization native species to restore degraded natural forests, were not considered within the scope of this assignment and are not presented in this report.

1.2 Commercial Forestry in Productive Landscapes

3. Commercial forest plantations can play a major role with respect to establishing productive landscapes and promoting sustainable landscape management in Mozambique. Of particular interest are the large areas of degraded, previously forested lands which can have their productivity restored through the establishment of planted forests and which have commercial potential.



Source: IUCN and WRI (2014).

Within a landscape, planted forests coexist with natural forests and diverse land uses such as cattle grazing and mechanized agriculture (Figure 1). Well-planned reforestation, for example, on degraded, previously forested lands supports climate-change mitigation (for example, through carbon stock enhancement), contributes to socioeconomic development in rural areas

by diversifying the regional economy, supports job creation, and builds the raw material base for wood energy and processing industries. When focusing commercial reforestation activities on land that is not considered suitable for sustainable agriculture, these activities should not jeopardize food security.

4. Experiences from other countries show that depending on the type of plantation and degree of mechanization, around 20 direct jobs are sustainably created by the reforestation of 1,000 ha. According to the different value chains fed with the timber produced within this reforested area, this figure can more than double (for example, in case of two or more transformation steps such as sawmilling - drying - planning - furniture manufacturing).

1.3 Lifting Potentials and the Way Forward

5. Competitive production costs, access to markets, and a sound business environment are key criteria for enabling commercially driven investments in planted forests. The integration of smallholders and small- and medium-sized forest enterprises is important to enhance the socioeconomic impact of commercial forestry.

6. The GoM's target of establishing 1 million ha of forested land by 2030 is highly ambitious. If the challenges with respect to improving the investment climate are efficiently addressed, reaching between 300,000 to 500,000 ha of planted forests in the next 15 years would be a major accomplishment. Even this accomplishment would create between 6,000–25,000 qualified jobs in the plantation sector, bring development (that is, infrastructure, vocational training) in rural areas and form the basis for establishing a wood-processing industry, which could bring about even more social and economic benefits.

7. The roadmap and action plan developed in this study tackle the main shortcomings of the investment climate in Mozambique's forestry sector. The background for this comes from two reports prepared as part of this study—*Assessing the investment climate in the planted forest sector in Mozambique* and *Addressing smallholder needs in planted forests in Mozambique*. (The key issues from these reports are summarized in the following section.) The roadmap has been designed considering the manifold implications of large forestry investments through triple-bottom benefits and trade-offs, and is in compliance with the National Reforestation Strategy.

1.4 Summary of Main Issues from Background Reports

8. Assessing the investment climate in the planted forest sector in Mozambique (Task 1 report)

Production costs

- Current growth rates in Mozambique's plantations are moderate compared with main competitors: productivity can be improved though by adopting best practices (including state-of-the-art technology) and an applied research program.
- Lack of skilled labor and professional service providers also increases costs: vocational training and support for small and medium enterprises (SME) development are essential.

Markets

- The domestic timber market is dominated by informality and timber from unmanaged natural forests: until this is regulated, plantation forests will remain export orientated.
- A regional cluster approach is recommended to encourage the development of a local timber processing industry and SMEs.
- The poor state of infrastructure is a major limiting factor for investors: government investment in railways and a regional road network would be a strong incentive for developing both the domestic and international timber markets.

Enabling environment

- Theoretically there is plentiful land available for forest plantations. However, what is not clear is which land would qualify for developing forestry plantations under international certification rules: for this, a national definition of ‘forest’ is required.
- A land use map which identifies land that is suitable for forestry development would be of great value for potential investors.
- The complex land negotiation (Direito de Uso e Aproveitamento de Terra [DUAT]) process needs streamlining and local government (or an independent, professional institution) should be present in these negotiations to ensure any agreements made follow the law, are duly recorded (with clear timeframes for delivery) and are clearly understood by all parties.

9. Addressing smallholder needs in planted forests in Mozambique (Task 2 report)

Community-Company Partnerships (CCPs)

- Clarification is needed as to what is expected of investors as currently communities expect them to deliver what should be the government’s responsibility—notably health, education, and infrastructure projects.
- Investors generally expect to contribute to social causes (under the corporate social responsibility [CSR] banner) for good community relations and as a risk management strategy but in Mozambique, it is unclear what is compulsory (to obtain the DUAT) and what is voluntary.
- Setting up a community fund should be considered, whereby the communities decide on their priorities.

Communication

- Investors must ensure that the communities’ expectations—for jobs or other services—must be realistic: the issues of mechanization and the need for skilled labor must also be made clear by the companies.
- There needs to be better channels of communication between all parties—companies, communities, and the government—and these channels should be used to keep all parties informed of progress and any changes to their plans.

Support for tree growing

- Smallholders will require substantial support both financially and technically for tree planting: this support could come from the private or public sectors—or a combination of both.
- Schemes supporting private tree growers in other countries demonstrate well how such schemes could be adapted for Mozambique.
- While some agricultural support schemes for smallholders in Mozambique have had some success, forestry is very different, with its long time-scale and most of the costs upfront in the first year.

2. ACTIVITY PLAN

2.1 Phased Activity Plan Toward 2030

10. The activity plan is based on the findings of (a) an assessment regarding Mozambique's planted forest sector and its competitiveness¹ and (b) an analysis of smallholder integration² into the planted forest sector.

11. The plan was elaborated in close cooperation with the GoM, implementing the suggestions and experiences of the responsible authorities. The following aspects were considered:

- Identifying high-priority actions as well as 'low-hanging fruits', focusing first on the most feasible actions that promise quick wins.
- Identifying alternatives to improve 'inclusiveness', to optimize socioeconomic and environmental benefits from investments in planted forests.
- Developing strategies and creating incentives to enhance the management of productive landscapes, in which commercial forestry plays a major role.
- Seeking synergies with parallel initiatives, such as the Forest Investment Program (FIP), Reducing Emission from Deforestation and Degradation (REDD+) Strategy, Value Chain Program, and Let's Work Partnership.
- Considering potential or perceived trade-offs, for example, (a) food security issues—when the labor force and land both shift from agriculture to forestry; (b) poverty reduction issues—when formalizing the forest sector; and (c) the implementation of technology and mechanization versus job creation and ensuring safe working conditions.
- Addressing gender aspects.
- Considering the lessons learned from initiatives to enhance agricultural production.
- Finally, special focus was given to harmonizing the planned actions with the national development agenda and the National Reforestation Strategy in particular.

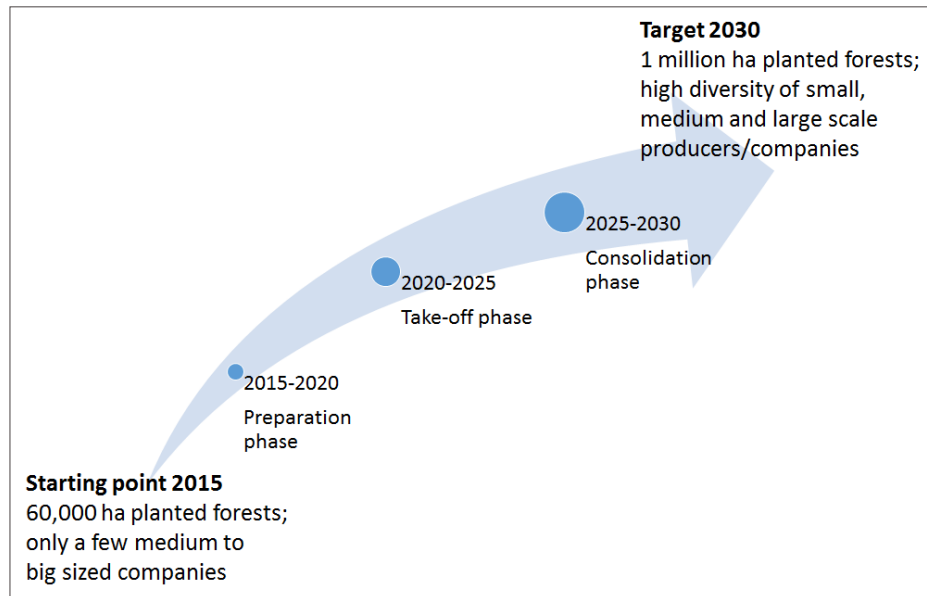
12. For the project a phased activity plan has been elaborated (see Figure 2). The actions along the roadmap target key opportunities and actions to overcome issues and challenges related to timber production, markets, the creation of an enabling environment, the integration of smallholders, and the establishment of community-company partnerships (CCPs). Some of them can be implemented at the same time, while other are structured as consecutive actions.

¹ See report on "Assessing the investment climate in the planted forest sector in Mozambique" (task 1 report of the technical assistance on "Improving the Business Climate for Planted Forests").

² See report on "Addressing smallholder support needs in planted forest development" (task 2 report of the technical assistance on "Improving the Business Climate for Planted Forests").

In Section 2.2 an overview of the actions is presented, and in Sections 3 and 4 the recommended actions are described more in detail.

Figure 2.1. Phased Activity Plan to Enhance Planted Forest Sector



2.2 Overview on Recommended Actions

13. Table 1 presents the list of recommended actions as building blocks to improve the forest investment climate in Mozambique. This list resulted from an interactive discussion with the GoM to ensure ownership over the developed recommendations and to ensure their relevance in the national context. At first, the table shows the urgency to take several but coordinated actions right from the beginning (the preparation phase) to create a strong foundation for the establishment of an effective investment climate in forest plantations. It is also noticeable that while most actions are expected to be short-lived and produce results in the short to medium term, others are expected to be permanent. Actions have been classified within four major categories (production, market, environment enabling, and smallholder integration), although, there are inter-links between the categories.

Table 2.1. List of Recommended Actions, Timeline, and Cost Estimate

Action	Preparation phase	Take-off phase	Consolidation phase	Cost estimate	
					time required
					+
1 Production related actions:					
1.1	Applied research on plantation forestry including clonal program	clonal program: →			9.0
1.2	Facilitate access to state of the art technology	→			n.a.
1.3	Best practice guidelines for plantation forestry	→			0.1
1.4	Research and development (R&D) program and company-company dialogue	→			14.0
1.5	Multi-level vocational training	→			15.0
2 Market related actions					
2.1	Provision of reliable market information	→			0.7 - 0.8
2.2	Improvement of infrastructure for forestry (master plan)	→			1.0
2.3	Addressing illegal logging and formalization of the forest sector	→			0.3
2.4	Cluster policy	→			0.7
3 Enabling environment related actions					
3.1	Definition of natural forest	→			0.05
3.2	Mapping of land qualifying for international forest certification schemes	→			0.7 - 1.0
3.3	Quick and transparent administrative processes	→			0.7
3.4	Updating forest legislation related to non-native timber species	→			0.05
3.5	Guidelines for CSR	→			0.3
3.6	Facilitate company community negotiations on land allocation for	→			0.3
4 Smallholder integration related actions					
4.1	Formalizing Community Company Partnerships (CCP)	→			2.0-3.0
4.2	Support for private tree growers including outgrowers	→			0.2
4.3	Capacity building for decentralized Government in CCP	→			1.0-1.5
				Total costs estimated:	46.1-48.1

14. The cost estimate of adopting all recommended actions corresponds to a total amount of around USD 47 million and the individual activities range between USD 20,000 and USD 14 million. This does not include the investments in the plantations themselves or infrastructures. It needs to be noted that several activities—for example, training—have notable recurrent costs that are not included. According to the nature of the action, the funding can come from Government sources (actions related to legislation), donor organizations (actions related to enabling environment), or private sector enterprises (actions related to production). Some actions lend themselves to a shared financing, for instance through applied research or vocational training.

3. DETAILED ACTION PLAN

3.1 Production-related Actions

15. Production-related actions target optimizing the production costs of the produced wood. The production costs per unit primarily depend on three factors: (a) the cost of land, (b) operational costs, and (c) the growth potential.

16. The cost of land in Mozambique is low, even when considering the high transaction costs for obtaining and maintaining a DUAT (land use rights) to establish forest plantations, and the required compensation payments to communities. The operational costs for the establishment of forest plantations from planting until the creation of the first revenues are USD 2,000 and above per ha which is high by international standards. The Mean Annual Increment (MAI) in Mozambique today ranges from 20 to 30 m³/ha/year for eucalypts. This is an acceptable growth rate for commercial forestry, but it is still below the best growth rates observed globally (South America).

17. Achievement and maintenance of improvements in both growth and yield needs to be addressed by research and development (R&D) programs focused on identifying suitable genetic material for plantation forestry. Within relatively short periods of time applied research can be successful and enhance the overall competitiveness of Mozambique's planted forest sector. The lack of skilled labor and professional service providers as well as state-of-the-art technology, however, is a limitation which makes the planted forest sector less competitive. These limitations must be addressed to improve the business climate of the planted forest sector, and diverse approaches must be considered, for example, establishing platforms for company-company dialogue which bring together different private sector actors within the planted forest sector.

18. The production-related actions described in the report are:

- Applied research on plantation forestry, including clonal programs;
- Facilitate access to state-of-the-art technology;
- Best practice guidelines for plantation forestry;
- R&D programs, public-private partnerships (PPP), company-company dialogue;
- Multi-level vocational training.

Activity 1.1 Applied research on plantation forestry: clonal program

Rationale of the action and objective

19. Site-species matching is of high priority for establishing productive and ecologically sound plantation forestry. Ideally, different provenances, hybrids, or clones are tested in experimental trials for at least one rotation cycle (often with a production goal within the range of 7 to 15 years—sometimes more) before the real operations commence. A broad variety of soil and climatic conditions exist in Mozambique, but few experimental trials focusing on site-species matching or genetic improvement of the used material have been established. Another crucial aspect is determining which silvicultural systems should be applied to ensure success in establishing and tending to forest plantations, to guarantee high growth rates and effective management. This essential research base has not been established in the country, and as such activities are urgently needed determine the best genetic material options combined with adequate silvicultural regimes to support the development of a competitive planted forest sector. A variety of low-risk genetic materials with high-productivity potential together with guidelines on how to manage the stands will attract investors, and keep the private plantation forestry sector competitive at the international level.

20. The main objective of this action is to have a variety of highly productive genetic materials for different site conditions available for companies and farmers. Small- and medium-scale companies in particular rely on support with appropriate planting material because of the high costs associated with long-term trials. Specific objectives of the tree-breeding program are:

- Establishing genetic improvement programs for different climatic and soil conditions;
- Promoting species with a high resistance to biotic and abiotic stress factors;
- Encouraging the use of species with high productivity (volume production);
- Promoting the use of high-quality species for specific end uses;
- Supporting human capacity development at the national level.

21. This action will contribute substantially to the economic performance of Mozambique's planted forest sector. Additionally, local capacities and human resources will be developed.

Products/Deliverables

- Provide information on the best silvicultural regimes (species-clones, spacing, planting systems, irrigation schemes, thinning, and so on). In a second step, a specific tree-breeding program will be promoted by the GoM in certain regions with the aim to improve tree growth, and pest or drought resistance.
- Develop the commercial structure for the production and marketing of adequate planting material, which should be available at competitive prices.

Involved stakeholders

22. Tree-breeding programs have to be developed in close cooperation with the private sector. While some larger investors might develop their own tree-breeding programs, there is already improved genetic material available in the public domain which could be made available (after screening and testing) for investors.

Hence the importance of the government being involved in this research program. The following is a brief description of the key stakeholders and their roles in supporting this action:

- Ministry of Agriculture and Food Security (MASA)—leading coordination of the program;
- Companies—land, know-how, genetic materials already in use (Portucel, Green Resources, Florestas de Niassa);
- Research organizations (public and private universities and research institutions, cooperation with international research entities)—research trials, data analysis, and evaluation;
- Consultants (national and international)—to bring experiences from other countries, suggest already adapted genetic materials, assist local researchers in specific tree-breeding programs.

Available information and studies with respect to the proposed action

23. There is already plenty of information about genetic improvements of eucalypt and pine species available in other countries. In general, there are public and private research institutions offering seeds, hybrids, clones and technical know-how that might be useful for research activities within Mozambique.

South Africa:

- CSIR (<http://www.csir.co.za/>),
- FABI (<http://www.fabinet.up.ac.za/>),
- ICFR (<http://www.icfr.ukzn.ac.za/>),
- FESA (<http://www.forestry.co.za/>),
- SAIF (<http://www.saif.org.za/>)

Brazil:

- IPEF (<http://www.ipef.br/sementes>),
- EMBRAPA Florestas (<https://www.embrapa.br>),
- ArborGen do Brasil (<http://www.arborgen.com.br/>)

Australia/New Zealand:

- CIFOR (<http://www.cifor.org/>),
- SCION (<http://www.scionresearch.com>)

Mozambique (Universities with forestry programs):

- Eduardo Mondlane University (UEM)

- Catholic University of Mozambique (UCM)
- University of Zambeze (UZ)
- Saint Tomas University (USTM)
- Lurio University (UNILURIO)

24. Additionally, there exist a variety of private organizations, universities, and commercial nurseries that provide assistance in tree-breeding issues. An international pool of researchers in the respective areas of tree breeding can also be found at IUFRO (www.iufro.org), while another useful partner organization is CAMCORE (<http://www.camcore.org>) located in the United States, which has associations with plenty of large global players in the plantation forestry sector.

Activities

25. This action is a long-term activity, which requires the continuous improvement of the available genetic materials. This will ensure that the materials are appropriate and react to dynamic conditions such as climate change, pest resistance, changes in qualitative aspects or the demand for new wood uses. The following activities will be developed:

Activity	Time Required	Leader
Definition of basic characteristics (drought and pest resistance, wood characteristics, and so on) and research needs	3 months	MASA (coordination), assisted by consultants and companies (assisted by universities)
Mapping of existing materials at the company level, within national programs and trials; screening of worldwide experiences	4 months	Consultants and companies (assisted by universities)
Definition of (regional) tree-breeding programs at the company level	2 months	Consultants and companies in coordination with MASA
Establishing a task force	Ongoing	Companies, MASA, universities
Establishing permanent experimental breeding trials and clonal programs for continuous improvement (joint effort of companies located within the same region)	Month 12 to ongoing	Companies, MASA, universities, National Research Organization
Establishing tree nurseries	12 to 24 months	Private entrepreneurs
Knowledge dissemination and capacity building	Ongoing	MASA

Key actors and role

- Companies—each company nominates a responsible person for the tree-breeding trials, and provides the required land and takes over the management costs;
- MASA—coordination and knowledge dissemination, promoting research (1 team leader, 1 assistant);
- Universities—providing renowned experts (if not available at the national level an international coordinator should be contracted), involving the identification of a leading researcher within the respective area and 1 assistant;
- Consultants—National experts from research institutions and private companies (forestry companies, nurseries), or international consultants as needed on a case-by-case basis to support the program in getting started, accumulating know-how, and supporting the development of a successful tree-breeding and clonal program;
- Nursery establishment—innovative entrepreneurs and the use of state-of-the-art nursery equipment.

Assumptions and risks

- Tree-breeding programs are long-term commitments with high impact on the individual performance of the companies.

Risk: Exchange and dissemination of knowledge is not always wanted by companies, outstanding genetic material is often patented and not provided to the markets.

Risk mitigation: MASA should coordinate and co-finance the program to ensure that the property rights of the improved genetic material remain in the public domain, thereby enhancing the competitiveness of the plantation forestry sector.

- Tree-breeding programs can only generate reliable results in 5 to 6 years.

Risk: Due to ambitious timelines, studies may not be sufficient to ensure robust results that mirror real conditions.

Risk mitigation: Companies should maintain an adequate genetic diversity until research results are fully reliable.

Risk: Low diversity of few clones may lead to a high vulnerability to pest and diseases.

Risk mitigation: Provide a plant pathology and disease control system, while increasing clone diversity.

- Existence of innovative entrepreneurs and private sector finance to establish professional clonal nurseries.

Risk: No investment in private nurseries.

Risk mitigation: Establishment of a PPP.

Cost estimate and finance

Total costs: USD 9,000,000 (for the first 5 years)

Cost structure:

- Personnel (including consultants researchers): USD 5,500,000
- Labs, research, and field equipment: USD 2,500,000
- Travel costs and knowledge dissemination: USD 1,000,000

Finance: GoM, participating companies, international donor organizations.

Nursery establishment: According to the nurseries capacity, costs are estimated to be in the range of USD 3 and 7 million; financed by private sector investment.

Comments

Close synergy with the action on 'R&D and company-company dialogue'.

Activity 1.2 Improve access to state of the art technology

Rationale of the action and objective

26. Modern plantation forestry, often called 'precision forestry', relies to a large extent on the availability of specifically adapted modern technology. This guarantees the high survival rate of the plants, continuous production of qualitatively outstanding wood, and high performance in harvesting and transport operations, beside the essential aspects of ergonomics and working safety required by state-of-the-art certification processes.

27. The objective of this action is to provide plantation forest companies with:

- Quick and easy access to modern technology at competitive costs and
- The establishment of a working reseller, maintenance, and spare part distribution system.

28. Specific forest technology needed to run a competitive business is not available in Mozambique and has to be imported by the forest companies from other countries/regions (South America, Europe, South Africa). The GoM (that is, the Ministry of Industry and Commerce) therefore, together with the private sector, made a list of specific technology which may be imported via a fast and less bureaucratic channel, with reduced waiting time and specific tax reductions. However, forest technologies show high development rates and the existing list of technology is outdated. The problem is that the bureaucracy to include new technology or update technical specifications of equipment in the existing list is a prolonged process, leading to problems in running forest operations in an efficient manner.

29. Forest technologies in general run under heavy duty conditions with high wear-out, where frequent maintenance and repairs are necessary. There is no reseller and maintenance service provider system existing at national level, leading to problems in running operations in an efficient manner. The availability of state-of-the-art technology is a precondition to produce wood at competitive costs, observing the modern standards of working safety and occupational health.

Products/Deliverables

30. The action aims to make technology and support available to plantation forest investors by facilitating access to technology imports, while also reducing taxes and helping to establish a working reseller and maintenance system.

Involved stakeholders

31. The import of foreign technology and its exceptions are regulated by the Ministry of Industry and Commerce, while the above mentioned list for priority import for the forest sector is provided by MASA. Both governmental institutions have to closely cooperate together to support this action. For implementing the reseller and maintenance system (service providers) the Ministry of Science, Technology, Higher Level Education and Professional Technicians, the Ministry of Labor and MASA have to be involved.

Available information and studies with respect to the proposed action

32. There might be national experiences available from other economic sectors, for example, mining or industrial agriculture, in reducing taxes on imported goods and the establishment of a reselling and service sector for forestry machinery.

Activities

33. A task force should be established involving the four previously mentioned ministries in close cooperation with the private sector.

Activity	Time Required	Leader
Evaluating and updating the import lists to include state-of-the-art technology	Ongoing	MASA, companies
Defining a tax reduction/liberation system according to economic conditions within the sector	4 months, ongoing adaption	Ministry of Industry and Commerce, Ministry of Finance (Tax Authority)
Supervising import processes and recording delay times at customs	Ongoing	Ministry of Industry and Commerce, companies
Providing the structure to build up a working reseller and maintenance system (close synergy to action 1.5)	3 years	Ministry of Science, Technology, Higher Level Education and Professional Technicians, Ministry of Labor and MASA, companies

Key actors and roles

34. The staff is already available in the designated ministries, but a task force still has to be created which involves both governmental and private sector members.

Assumptions and risks

35. The forest sector requires state-of-the-art technology to ensure competitive wood production under acceptable conditions of work safety and occupational health. Unless a considerable number of big players are established in Mozambique, relying entirely on market-based mechanisms will not work in the country. The GoM should provide benefits to overcome the problems at the beginning.

Risk: Problems in the overall supply of adequate machinery, missing services, and spare parts.

Risk mitigation: Provide access to fast imports of key technology at competitive costs with efficient import and customs procedures, building up a working reseller and maintenance industry, and attracting technology manufacturers to produce and sell their goods in Mozambique.

Risk: Creating very few local jobs for unskilled labor leading to a high level of dissatisfaction in the local communities.

Risk mitigation: Promote recruitment and training programs for local young community members.

Cost estimate and finance

36. There are no direct costs for technology import benefits granted to forest companies. However, by the reducing import taxes and fees the government will lose a source of income. This amount can only be calculated by the respective governmental organizations and depends on the granted privileges.

37. The forestry costs and investments in machinery in an area spanning 1 million ha of forest in Brazil, corresponding to highly mechanized plantations, is about USD 75 million each year. Tax reductions might be multiplied with this value.

38. Further costs may arise for vocational training and education program for machine maintenance and mechanics in Mozambique. The promotion of a national reseller system for forest technologies and spare parts might be linked to additional economic losses for the GoM due to financial incentives.

Comments

39. Other countries (that is, Brazil, Australia, Uruguay) have already implemented harsh restrictions for manual and motor-manual plantation forest operations (that is, harvesting) due to employee health and safety issues, which has led to mechanization of many forest operations (for example, silviculture, harvesting, loading, and modern transport).

40. It is recommended to look for synergies with the action on 'multi-level vocational training' regarding training and education of mechanics and maintenance professions.

Activity 1.3 Best practice guidelines for plantation forestry

Rationale of the action and objective

41. The planted forest sector in Mozambique still faces a lot of technical challenges with respect to site-species identifying, the best silvicultural regimes (spacing, thinning, pruning), and the best applied technology (site preparation, planting, fertilizing, pest management, harvesting, fire management). To get reliable information, forestry research based on many years of investigation is required. To adopt the best possible forestry practices, experience and know-how from forest companies with experience operating in Mozambique and in comparable environments outside of Mozambique should be collected, systematized, and documented within best-practice guidelines.

42. The objective of the action is to improve the performance, quality, and cost efficiency of planted forests by applying key information and experience-based best practices.

Products/Deliverables

- Best practice guidelines for plantation forestry in Mozambique.

Involved stakeholders

Leading organization: MASA

Involved stakeholders: (a) forest companies; (b) forest consultants; (c) research institutions and universities

Available information and studies with respect to the proposed action

43. There is already plenty of information available from other countries with well-established plantation forestry programs and similar species/growth conditions. Nearly all institutions listed in activity 1.4 also provide detailed information about best practices in plantation forestry that may be adapted and used as a basis for developing best practice guidelines for Mozambique's plantation forestry sector.

Activities

44. The action can be performed within 12 months. The following activities will be developed:

Activity	Time Required	Leader
Definition of key terms and expected outputs; tendering process	3 months	MASA
Conducting the consultancy, including the elaboration of the best practice guideline	6–9 months	Consultants

Key actors and roles

45. Consultants with a track record in plantation forestry and the development of best practice guidelines; a coordinator from MASA who will coordinate the task of the consultants.

Assumptions and risks

46. The action is based on the following assumptions:

- Companies starting with the establishment of new plantation will consider the recommendations from the guidelines and adapt their management accordingly.

Risk: The guidelines are not of the expected quality (for example, not practice oriented; not considering up-to-date forestry practices; not translating experiences from other countries to the Mozambican context).

Risk mitigation: Careful selection of the consultants conducting the work, and ensuring that general guidelines are adapted to the context of Mozambique and its specific-conditions.

Cost estimate and finance

Total costs: USD 100,000

Cost structure:

- Consultants: USD 100,000

Finance: GoM; international donor organizations

Comments

47. Best practice guidelines is a 'living document'. With the establishment of research programs, scientifically based results on the best practices and materials for plantation forestry in Mozambique will be generated and will have to be integrated in the guidelines.

48. The guidelines need to be designed in a way that is relevant to potential smallholders and wood energy producers as well. It is likely that this group is in a particular need of this type on guidance.

Activity 1.4 PPP and company-company dialogue on R&D

Rationale of the action and objective

49. To establish a competitive plantation forest sector it is necessary to focus research on the specific site, climate, and production conditions in Mozambique. To optimize the forestry value chain, critical issues have to be identified and problem-oriented, applied research has to be carried out. Research can often incur considerable costs that might be reduced if resources are bundled. The objective of the action is to establish an R&D program coordinated by a specific department of MASA. The department should also identify national and international research facilities and coordinate the cooperation between them, including the existing capacities of the private sector and specifically promote the exchange of knowledge between all stakeholders.

Products/Deliverables

50. Practice-oriented and research-based solutions addressing technical and managerial challenges along the forestry value chain. It is expected that the research results and the open communication between all stakeholders will substantially help overcome existing problems and transform Mozambique's planted forest sector into an internationally competitive player.

Involved stakeholders

- MASA: Identification of the problems and research focus, description of expected outcomes
- Ministry of Science, Technology, Higher Level education and Professional Technicians
- Agriculture Research Institute (IIAM)
- National Research Fund (FNI): Funding and coordination of the program
- National Universities with forestry/agricultural departments (Eduardo Mondlane University (UEM), Catholic University of Mozambique (UCM), University of Zambeze (UniZambeze), Saint Thomas University (USTM), Lurio University (UNILURIO)
- Forest companies and private research facilities: Identification of research needs, field research, technical know-how/knowledge transfer (Portucel, Green Resources, Florestas de Niassa, among others)

Available information and studies with respect to the proposed action

51. In countries with considerable areas of planted forests, joint R&D programs, open dialogue, and permanent knowledge exchange are well established at the institutional level. Good examples are as follows:

South Africa:

- Institute for Commercial Forestry Research (ICFR - <http://www.icfr.ukzn.ac.za/>): ICFR plays an important role in coordinating and facilitating industry-level research programs.

- Forest Engineering Southern Africa (FESA - <http://www.forestry.co.za/>): FESA has produced some very useful handbooks on harvesting and transport, infrastructure, fire control, and modelling/mensuration.
- Forestry and Agricultural Biosciences Institute (FABI - <http://www.fabinet.up.ac.za/>): based at the University of Pretoria, South Africa. FABI is a world leader in pest and disease management, an increasingly important consideration with eucalypt plantations worldwide.
- Council for Scientific and Industrial Research (CSIR - <http://www.csir.co.za/>): CSIR is one of the leading scientific and technology research, development, and implementation organizations in South Africa. CSIR undertakes directed and multidisciplinary research, technological innovation, as well as industrial and scientific development to improve the quality of life of the country's people.
- Forestry South Africa (FSA - <http://www.forestry.co.za/>) is South Africa's premier and largest forestry organization representing timber growers in South Africa.

Brazil:

- Brazilian Pulp and Paper Association (BRACELPA - <http://bracelpa.org.br>): BRACELPA is the association that represents the Brazilian pulp and paper industry.
- EMBRAPA Florestas: Governmental research institution to promote the forestry sector.
- Many university-linked foundations (for example, FUPEF, IPEF, FEPAGRO).

United States:

- CAMCORE (<http://www.camcore.org>): A nonprofit, international tree-breeding organization, which primarily serves the private forestry sector to ensure that it has access to a broad genetic base of the best-adapted and productive species for use in plantation forestry programs in the tropics, subtropics, and sub-temperate regions. It has 29 active members in 11 countries in the Americas and Africa.

Activities

52. The action can be performed within the first year and throughout the entire planned timeframe. The following activities will be developed:

Activity	Time Required	Leader
Identification and development of research program; designating the responsible representatives/authorities in the ministries, governmental organizations and universities and persons in charge	Year 1	MASA, IIAM, and Ministry of Education and Human Development
Budget estimation for activities	Year 1	Ministries, IIAM

Activity	Time Required	Leader
Definition of the research program and delegation of tasks to local (national) research institutions	Year 1	Ministries/universities
Organize cooperation with private sector, ensuring continuity, and sustained commitment via periodic meetings, round tables, task force	Year 1	Ministries, IIAM, assisted by universities
Coordination of research activities, evaluation of reports, knowledge transfer to forestry sector, training	Year 1 to end	Ministries, IIAM, assisted by universities
Budget control, release of new research programs	Year 1 to end	Ministries, IIAM, assisted by universities

Key actors and roles

The requirements include:

- National: 4 persons within the ministries (2 coordinators, 2 assistants)
- 4 regional coordinators (from IIAM)
- Coordination assistance by leading national universities;
- An office for the central coordination is necessary as well as 4 regional offices (IIAM Zone Centers can be used)
- A permanent proactive contact person within the private sector

Assumptions and risks

53. The R&D program is based on efficiently conducted applied research, organization, and coordination between research institutions, universities, the government, and the private sector.

Risk: Gap in transparent and permanent communication between all stakeholders.

Risk mitigation: Clear and transparent communication between public and private forestry stakeholders, characterized by strong and efficient coordination. Targets, products, and milestones of each research program have to be defined clearly and frequent auditing of all activities is recommended.

Risk: Some companies have already invested a considerable amount of money in research, for instance, their own clonal program or specific pest management, which gives them substantial advantages over competitors. Companies usually want to keep this advantage, at least until their investment has paid off.

Risk mitigation: The GoM should ensure that the productivity of the whole sector is maintained at the highest level possible, generating tax income and offering work. Therefore, the government should stimulate inter-company dialogues and strengthen PPPs and R&D programs.

Cost estimate and finance

Total cost for 5 years: USD 14 million

Cost structure:

- Staff, permanent and temporary: USD 500,000 per year
- Annual research budget for the research tasks defined in task 1 of this report: Expected to amount to approximately USD 2.3 million per year (including projects of national and international research facilities and consultants and research equipment/labs for universities), for at least 5 years.

Options to finance the action: GoM, International donor organizations, co-finance by forest companies.

Activity 1.5 Vocational training

Rationale of the action and objective

54. In the long run, qualified personnel have to be available at the national level to promote the plantation forestry sector and attract investors. Availability of employees with a high degree of knowledge and professional experience are indispensable for building up competitive forestry enterprises. Gender aspects are very important for planning the future labor market and should be evaluated and implemented in the action.

55. The objectives of the action are to:

- Forecast the need of vocational training for the forestry sector (for example, number of qualified persons at each level, build up curricula for training and education programs);
- Provide the legal framework for education, and workplace safety and health within the sector;
- Develop the required institutional capacities for training and education;
- Create a favorable climate for entrepreneurship development (training, subsidies).

Products/Deliverables

56. Make a pool of qualified personnel available to the forest sector labor market at all working levels (long-term) by building up the necessary educational capacities and by developing the necessary legal framework.

Involved stakeholders

57. The program will be driven by the Ministry of Science, Technology, Higher Level education and Professional Technicians (Ministério de Ciência, Tecnologia, Ensino Superior e Técnico Profissional, PIREP; planning of training facilities, staff etc.) and the Ministry of Labor (legal framework, occupational safety), assisted by MASA (definition of capacity building needs, number of personnel per year etc.). Universities and technical schools (UEM, UniZambeze, UniLurio, ISPM, IAC, IAB) – supported by external experts – may assist in building up and implementing the curricula for different professions within the sector. Companies may help in detecting labor force demand and providing the necessary qualifications.

Available information/preliminary studies with respect to the proposed action

58. The Ministry of Science, Technology, Higher Level Education and Professional Technicians has established a technical training program (PIREP) in the agricultural and forestry areas. Curricula have been developed and initial training has taken place. However, the curricula have to be updated and continuously adapted to the specific needs of a modern and technology-driven plantation forestry sector.

Activities

59. This action is a long-term activity—building up the capacity for training and education, enhancing the legal framework and providing continuously qualified labor to the market.

Activity	Time Required	Leader
Estimation of qualified labor and entrepreneurship demand for successfully managing 1 million ha of planted forests	2 months	Ministry of Science, Technology, Higher Level Education and Professional Technicians, MASA, consultants, companies
Planning of the curricula for the required professions (and their associated qualifications) as determined in Activity 1, and identifying or establishing the educational facilities necessary for conducting the training/education.	6 months	Ministry of Science, Technology, Higher Level Education and Professional Technicians, Ministry of Labor, MASA, consultants
Execution: building up the facilities and staff recruitment - initiate training programs	2 years	Ministry of Science, Technology, Higher Level Education and Professional Technicians
Adapt, improve, and define new training needs and required capacities as the market develops	Ongoing	Ministry of Science, Technology, Higher Level Education and Professional Technicians
Promote entrepreneurship by providing training and subsidies	Ongoing	Ministry of Economy and Finances

Key actors and roles

Ministry of Science, Technology, Higher Level Education and Professional Technicians—required staff already available

Ministry of Labor—required staff already available

MASA—required staff already available

Experts and consultants assisting the program development

Assumptions and risks

Risk: The action is based on the required development of the plantation forestry sector by attracting foreign investors. It is possible that there is a gap between planning and reality, which may lead to a lack or surplus of labor within the market.

Risk mitigation: The program should be built up in successive stages, always forecasting the demand for the respective timeframe associated with the defined curricula. Frequent market analyses and communication with companies within the sector may be useful to adapt training contents and ensure that a number of personnel are absorbed by the market each year.

Cost estimate and finance

Total costs: USD 15,000,000 (for the first 5 years)

Cost structure:

- Facilities for education and training: USD 10,000,000
- Running costs (personnel, maintenance facilities): USD 1,000,000 per year

Finance: GoM; Forest companies, international donor organizations

Comments

60. Use already existing capacities of related educational areas (like agriculture) and forestry programs offered by universities and technical schools. Involve the private sector in training programs and forecast future labor demand. Consider gender aspects in training and education.

3.2 Market-related Actions

61. Market access is often considered as a bottleneck for investments in planted forests. The domestic energy biomass market in Mozambique is huge, but highly informal with over 90 percent of the consumed energy biomass sourced from unmanaged, open access forests. Therefore, energy wood production in plantations is currently not competitive in Mozambique's domestic market. An interesting domestic market is the growing construction industry, especially considering the planned expansion of the electricity grid. Currently domestic market prices for construction wood in Mozambique are well above regional reference prices indicating high market demand. However, with regard to volume, this market still is considered as a niche market. The relatively high prices for pine lumber (around USD 300 per m³ in town centers), indicates that there is not a sufficient supply of this planted forest product. Hence, not only eucalyptus but also pine should be considered when establishing plantations in Mozambique. A big step towards the commercialization of timber from plantations is the planned establishment of a large pulp mill in Mozambique, which would strengthen the domestic market for timber products.

62. Accessing global markets with forestry products made in Mozambique is a viable option, because of the availability of harbors and Mozambique's proximity to major consumers in Asia. An important drawback for exportation consists of the weak infrastructure for transporting wood and other forest products, which increases the cost to access the international market.

63. Legality and formality are key preconditions to ensure fair market competition and sustainable forestry. Governmental strategies to improve the timber market and investment climate should concentrate on efforts to formalize the forestry sector and to establish regional forestry clusters to integrate and develop small- and large-scale plantation forestry activities, while also supporting the establishment of local service providers, and the development of a professional timber-processing industry. Finally, improvements in infrastructure, particularly investments in railways and road networks, could significantly increase the competitiveness of Mozambique's planted forest sector in international markets. The natural forest sector in Mozambique has suffered from notable illegality, creating unfair competition in domestic markets, which in turn creates a potential reputational risk for Mozambican wood products in international markets—also for planted forest products.

64. The market-related actions described are:

- Provision of reliable market information;
- Improvement of infrastructure (master plan);
- Addressing illegal logging and promoting the formalization of the forest sector;
- Cluster policy.

Activity 2.1 Provision of reliable market information

Rationale of the action and objective

65. The consumption of over 90 percent of energy from biomass is sourced from unmanaged open access natural forests, which is a major problem in Mozambique. The 'informality' of the timber market prevents the building up of a sustainable and economically competitive domestic bioenergy market based on planted forests. A future domestic market with high potential can be found in the construction industry and also in development of the electric power grid, which is still considered a niche market. Within the construction sector timber fetches high prices, which could be either linked to high production/transport costs or unsatisfied market demand. A very interesting option for Mozambique is the pulp and paper sector. The planned establishment of a large pulp mill in the country may be a big step forward in commercializing wood and wood products owing to the favorable logistic options and proximity to key international markets.

66. However, reliable information and data on the domestic timber market and the potential to produce for international markets is not available. Market information is crucial for investors when analyzing investment potential. The objective of the action is to improve timber market intelligence and to provide reliable timber market information to investors.

Products/Deliverables

- Market study (product specifications, volumes, prices) on domestic timber market and on international export markets
- Timber market database and concept on how to keep it up to date
- Strategy to sustain timber market database

Involved stakeholders

Leading organization: MASA or Ministry of Commerce.

Involved stakeholders: (a) forest companies; (b) timber consuming and processing industries; (c) MASA or Ministry of Commerce; (d) forest market consultants.

Available information and studies with respect to the proposed action

67. While the Institute for Promotion of Exports (IPEX, Instituto para a Promoção de Exportações) keeps data on international forest product markets, no institution collects data systematically on domestic forest product markets. It would be possible to host the database at the Ministry of Commerce or the National Statistics Institute (INE).

Activities

68. The action can be performed within 24 months. The following activities will be developed:

Activity	Time Required	Leader
Definition of terms and expected outputs; tendering process	3 months	MASA

Activity	Time Required	Leader
Conducting the timber market study	6–9 months	Consultants
Structuring of a timber market database (open or restricted access to be defined)	3–6 months	Consultants
Concept on how to keep market database up to date and	3–6 months	Consultants
Implementation of required structures	6–12 months	Ministry of Commerce/INE

Key actors and roles

Task force in the involved ministries (MASA and Ministry of Commerce/INE);

Consultants with substantial experience in timber market analyses.

Assumptions and risks

69. The action is based on the following assumptions:

- Availability of (a) national and (b) international timber market information is one element to attract private sector investors

Risk: Outcomes of market study are not as expected and prior call for substantial investments in planted forests for accessing (a) national or (b) international markets.

Risk mitigation: None, but if the target markets are for the export of wood and wood products, the companies have already made feasibility studies on the planned investment

- Market intelligence structure established by Government will be supported by the private sector (forest companies, timber-processing industries)

Risk: Private sector does not provide support (market data, co-finance).

Risk mitigation: Persuading private sector and ensuring their involvement when defining objectives and outputs.

Cost estimate and finance

Total costs within the next 5 years: USD 700,000 to 800,000

Cost structure:

- Timber market study (consultants): USD 100,000 to 200,000
- Concept for timber market database: USD 100,000
- Structure to sustain market intelligence: USD 100,000 per year

Finance: GoM; forest companies (for example, via access fees); international donor organizations

Comments

70. This action is closely related to the enhancement of species selection (site-species-market matching) and to the establishment of a forest cluster policy.

Activity 2.2 Infrastructure master plan

Rationale of the action and objective

71. The forest-based industry is highly sensitive to the transport costs of raw material, half-finished products, and final products. Regarding the plan of establishing up to 1 million ha of forest plantations over the next decade, the target markets of many of the sector's products will be overseas. Therefore, acceptable distances and means of transport are a precondition to attract investors.

72. The objective of this action is to provide a master plan on infrastructural improvements addressing the needs of the forest sector. The master plan has to be based on and linked with the overall infrastructure development plan of Mozambique.

Products/Deliverables

73. Provide a master plan for infrastructural development specifically regarding the forestry sector and wood industry to meet the 1 million ha target of planted forests and the adjacent wood industry.

Involved stakeholders

74. Infrastructure (mainly transport) has to be planned with other economic sectors (for example, agriculture, mining, energy). Therefore, the planning will involve a series of ministries covering diverse sectors such as Agriculture, Energy, Mineral Resources, Industry and Commerce, Land, Environment and Rural Development, Economy and Finance, Housing, Public Works and Water Resources, Transport and Communications.

Available information/preliminary studies with respect to the proposed action

75. The Development Corridor Program and the Special Economic Zones Office (GAZEDA) are two integrated initiatives that bring together several sectors to promote development based on integrated investments. The Maputo Corridor, the Zambezi Corridor, the Beira Corridor and the Nacala Corridor are the most integrated operational programs that bring together investments in infrastructure to encourage operational and competitive investments in the agriculture (for example, Prosavana in Nacala Corridor), forestry (for example, Niassa and Nampula plantations in Nacala Corridor), and mining sectors (in Zambezi and Beira Corridors), among others. Large investments have been made in these corridors, including roads, harbors, airports, railways, warehouses, and other facilities. Forest plantations have the potential to join these initiatives.

Activities

76. Infrastructural planning is a dynamic activity that has to be adapted according to the economic and social development of a country. Therefore, it is a long-term activity without a determined end.

77. The following activities will be developed:

Activity	Time Required	Leader
Definition of the needs of the forest sector and wood industry (roads, railway, harbors, energy demand)	2 months	MASA, consultants

Activity	Time Required	Leader
according to the plans (size of the sector and regional distribution)		
Assessment of existing infrastructure development plans in Mozambique. Design of a master plan addressing forestry needs and coordination with the other economic sectors (see list of ministries above)	6 months	See list of ministries, consultants
Implementation plan and continuous development and adjustment according to the increasing plantation areas/growth of the wood industry	Ongoing	Ministry of Economy and Finance (GAZEDA), MASA

Key actors and roles

- Ministries: Staff already available
- Staff of the Special Economic Zones Office - GAZEDA³
- Consultants for the first 6 months

Assumptions and risks

78. Established functional infrastructure is indispensable for building up the forestry sector and to attract investors. MASA should communicate and emphasize the specific needs of the sector.

Risk: Delays in planning and execution may result in hesitation and the cancelation investments, the plan of establishing 1 million ha of planted forests will not be executed.

Risk mitigation: The consequent planning and implementation of the action should be a clear commitment of the central government that should be taken over by the central coordination body responsible for all infrastructural planning.

Cost estimate and finance

79. Cost estimates of this Action Plan only include the detection of needs of the forest sector and the planning of the infrastructure. Costs for roads, railway, harbors and energy are not included.

Total costs: USD 1,000,000 (needs assessment and compilation of master plan)

³ <http://www.gazeda.gov.mz/>

Cost structure:

- Personnel (task force in ministry, consultants, experts and researchers): USD 1,000,000

Finance: GoM, international donor organizations

Comments

80. Close cooperation with other ministries is indispensable. Coordination should be taken over by the Central Government.

Activity 2.3 Addressing illegal logging and formalization in the forest sector

Rationale of the action and objective

81. Legality and formality are key preconditions to ensure fair market competition and sustainable forestry. However, the domestic forest product market is still dominated by timber coming from unmanaged natural forests and is characterized by its informality. Improvement options to enhance fair market competition should concentrate on efforts to formalize the forestry sector. As structural incentives for illegal logging are especially high where transparency, accountability, and intra-institutional competition are low, effective control requires cross-cutting reforms in many policy areas and is associated with the promotion of good governance. This includes actions to tackle corruption and industrial and fiscal policy reform, but also social and development programs since rural populations depend on additional income from the illegal use of forests.

82. The overall objective is to have fully legal and formalized operating timber value chains starting from both natural forests and forest plantations. However, this is not a simple feat but instead a long process which likely requires more than 10 years to achieve. To initiate this process, a sound strategy on forest sector formalization is required.

Products / Deliverables

- In the short run: Forest sector formalization strategy and its integration into the National Forest Strategy.
- In the long run: Legal and formalized timber value chains.

Involved stakeholders

Leading organization: The Ministry of Land, Environment and Rural Development (MITADER)

Involved stakeholders: (a) forest companies; (b) forest product traders; (c) timber consuming and processing industries; (d) Food and Agricultural Organization (FAO); (e) forest market consultants

Available information and studies with respect to the proposed action

83. Studies by CIFOR,⁴ Environmental Investigations Agency,⁵ and others have revealed losses of millions of dollars per year in revenues due to illegal logging in Mozambique. Recently, the GoM showed initiatives to reduce the impact of illegal logging and create a better environment for 'good' operators. An action plan has been approved by MITADER to curb illegal logging.

84. FAO's Mozambique Country Office is in process of establishing a forest monitoring mechanism that will improve the transparency of forestry operations, and expose illegal operators and activities.

⁴ http://www.cifor.org/publications/pdf_files/WPapers/WP122Ekman.pdf.

⁵ <https://eia-international.org/mozambique-loses-a-fortune-to-illegal-timber-exports>.

Activities

85. The legal part of the action can be performed within 24 months (the development of the strategy), the implementation of the strategy is a long-term project. The following activities will be developed:

Activity	Time Required	Leader
Definition of terms and expected outputs of strategy development; tendering process	3 months	MITADER
Strategy on forest sector formalization	9 months	Consultants
Integration into the National Forest Strategy	6–12 months	MITADER
Implementation of the strategy	10–20 years	

Key actors and roles

86. Task force in the involved ministry (MITADER); experienced consultants

Assumptions and risks

87. The action is based on the following assumptions:

- Existence of political will to formalize the forest sector.

Risk: Long process, time required for evident improvements/proof of concept often longer than the average persistence of decision makers in the Government.

Risk mitigation: First focus on low-hanging fruits.

- Formalization can be implemented without negatively affecting SMEs along the value chain.

Risk: Some value chains dominated by SMEs only work in an informal environment (for example, charcoal).

Risk mitigation: Special consideration on the future role of SMEs; accompanying programs for SMEs.

Cost estimate and finance

88. *Total costs (only strategy development):* USD 300,000

Cost structure:

- Consultants: USD 200,000
- Consultation process, integration in National Forest Strategy: USD 100,000

Finance: GoM; international donor organizations

Comments

89. The action is a precondition for well-functioning wood markets that allows the forecasting of supply and demand as well as cost and price development.

Activity 2.4 Cluster policy

Rationale of the action and objective

90. A cluster approach to the forest policy should incorporate regional aspects (initially focusing on a few promising regions/provinces), support by decentralized Government institutions, value chain integration, company-to-company partnerships, the promotion of SMEs and private sector associations and the establishment of applied research programs. Bringing these elements regionally together will provide incentives for developing value-added products, and for the establishment of a professional forest sector (involving forest producers and timber-processing industries at different scales).

91. The objective of this action is to have regional cluster strategies at the province level and a cluster management structure that can implement supporting actions within the forestry sector at the provincial level.

Products/Deliverables

- Cluster strategy for different provinces (Manica, Zambézia, Nampula, Niassa); starting with a pilot in only one province (region) to bundle efforts;
- Structure to implement cluster strategy (cluster management).

Involved stakeholders

Leading organization: MITADER or MASA.

Involved stakeholders: (a) forest companies; (b) forest product traders; (c) timber consuming and processing industries; (d) research institutions; (e) forest consultants

Available information and studies with respect to the proposed action

92. The concentration of interconnected businesses, suppliers, and associated institutions in the forest and wood sector are considered to increase the productivity of the sector allowing companies to compete both nationally and globally, improving the strategic management of the plantation forestry sector. In Europe and America forest-wood clusters are quite common and many functional examples can be found.

93. Mozambique already has some agricultural clusters. For example, the cashew sector of Nampula is an example of an emerging cluster strategy; it involves INCAJU (the state institute for cashews), an R&D initiative, producers (small- and medium-sized producers), processing plants, and marketing structures.

Activities

94. The time required to perform the action is a minimum 5 years. The following activities will be developed:

Activity	Time Required	Leader
Map existing stakeholders in the 4 provinces which currently contain forest plantations	1 month	Consultant

Activity	Time Required	Leader
Definition of terms and expected outputs of cluster strategy; tendering process	3 months	MITADER, MASA
Cluster strategy	9 months	Consultants
Establishment of an implementation structure (cluster management)	6–12 months	MITADER, MASA
Implementation of the strategy	2 –5 years	MITADER, MASA

Key actors and roles

95. Task force in the involved ministry (MASA) and within the government at the provincial level; experienced consultants.

Assumptions and risks

96. The action is based on the following assumptions:

- Interests of different stakeholders along the timber value chain can be aligned.

Risk: No cooperation between the different stakeholders.

Risk mitigation: Real integration of all relevant stakeholders in the formulation of the cluster policy/strategy.

Cost estimate and finance

97. *Total costs for the next 5 years assuming that the cluster policy will be implemented in 3 provinces:* USD 700,000.

Cost structure:

- Formulation of cluster policy/strategy (per province): USD 200,000
- Yearly budget for implementation of cluster activities (per province): USD 500,000

Finance: GoM; international donor organizations

Comments

98. This action is closely related to the research-related actions and to the formalization of the forest sector.

3.3 Enabling-environment-related Actions

99. While there have been substantial improvements in political stability and economic growth in the last decade, some current policies and legislation may be considered as limiting factors or barriers for investors. Major broadly shared concerns include the need to address the time-intensive and expensive bureaucratic procedures for establishing plantations, and the limited governmental presence and support in rural areas, especially with regard to local negotiations for land access. It is paramount to set up transparent administrative processes for the licenses needed to establish a project, and particularly for processes related to land acquisition. The establishment of an independent and professional institution to facilitate land negotiations with communities could provide support to the different parties involved.

100. Another challenge in the planted forest sector is that many forestry companies in Mozambique have problems in achieving SFM certification due to the lack of an official definition of natural forest in the country. The mapping of plantable forest land that would potentially qualify for Forest Stewardship Council (FSC) certification will be a key step towards improving the investment climate in Mozambique's forestry sector. The Mozambican REDD+ Readiness program is currently working on a uniform national forest definition that can be used for certification purposes.

101. The enabling-environment-related actions described in continuation are:

- Definition of natural forest;
- Mapping of land qualifying for forest certification schemes;
- Ensuring quick and transparent administrative processes;
- Updating forest legislation related to non-native timber species;
- Guidelines for CSR;
- Company-community negotiations on land allocation.

Activity 3.1 Definition of natural forest⁶

Rationale of the action and objective

102. The lack of clear definitions within the forestry legislation of Mozambique regarding what vegetation cover is considered as natural forest has hampered investments in the planted forest sector. Most of the available land for planted forests is covered with a combination of (a) remnants of Miombo vegetation in different stages of degradation, (b) vegetation coming from secondary succession, and (c) disused cashew plantations (Mozambique has 32 million of cashew trees on an area of approximately 0.5 million ha).

103. The lack of clarity on what vegetation types have to be considered as natural forest exposes companies to high reputational risks and leads to a deadlock situation, as the conversion of natural forest is incompatible with international certification standards (for example, FSC certification) and is non-justifiable to investors and society. Therefore, a clear definition of natural forest is key to receiving SFM certification and to attracting investors to the sector.

104. The objectives of the action are:

- Establish a clear definition of natural forest and degraded lands, which could qualify for plantations in the forest legislation of Mozambique. This definition should be in line with international natural forest definitions (FAO) and compatible with international certification standards.

105. The action helps all plantation forestry initiatives (small, medium, large) to be responsible from the start and to avoid non-reversible mistakes. It is directly related to the action “Mapping of plantation forestry land qualifying for international certification schemes.”

Products/Deliverables

106. Binding definition of natural forest approved by the responsible authorities and documented in the forest legislation.

Involved stakeholders

Leading organization: MITADER

Involved stakeholders: (a) responsible national authorities, (b) FAO (international harmonization of forest definitions), (c) national and international environmental nongovernmental organizations (NGOs) (consensus with ecological criteria), and (d) private forestry companies (consensus with productive and economic criteria).

Available information and studies with respect to the proposed action

107. A study in the context of REDD+ is being carried out. Although there is no final decision, the dominant definitions suggests changing from the current 10 percent crown cover to 30 percent crown cover. This study suggests that the forest definition shall not work as a stand-

⁶ There is ongoing work on forest definition by UT-REDD to address this in REDD context. If any further work is initiated, it is essential that it builds on work already being done. See www.forestcarbonpartnership.org/mozambique/.

alone concept to define whether an area could be converted or not, but additional concepts such as biodiversity, ecological or social value shall be used in combination with this definition.

Activities and time line

108. The action can be performed within 9 to 12 months. The following activities will be developed:

Activity	Time Required	Leader
Preliminary definition of natural forests between GoM and FAO	1 month	MITADER
Circulation of preliminary definition and stakeholder workshop	2 months	
Final agreement of definition, formal approval, and incorporation into forest legislation	6–9 month	

Key actors and roles

109. High-level representatives of key stakeholders - notably GoM and private companies.

Assumptions and risks

110. The action is based on the following assumptions:

- Constructive cooperation between the GoM, ecological driven organizations, certification institutions and private sector to balance the different interests and requirements.

Risk: No joint agreement on definition.

Risk mitigation: Considering the natural forest definition of FSC, which has been agreed in the three FSC chambers (social, ecological, and economic).

- Process can be started and finalized within 12 months.

Risk: Endless discussions on the 'right' definition with no result.

Risk mitigation: Strict and consequent time management.

Cost estimate and finance

Total costs: Less than USD 50.000 (not including work done by UT-REDD).

Cost structure:

- Stakeholder consultation and workshops.

Finance: GoM; international donor organizations.

Comments

111. The deliverables of this action form the base and starting point for the action “Mapping of FSC qualifying land for plantation forestry.” An in-time development is very important to resolve one of the crucial problems faced by forestry companies in Mozambique.

Activity 3.2 Mapping of land qualifying for forest certification schemes

Rationale of the action and objective

112. A rough mapping of suitable areas for plantation forestry in Mozambique is available (MINAG 2007). This mapping is currently in the process of being refined (ESA project). However, there is no geographic information available on the areas that are both suited for plantation forestry and likely to qualify for international certification schemes (for example, FSC certification). It is important to note that such categorization of land as suitable for reforestation would be no guarantee of FSC certification but it would at least comply with FSC's strict standard of not clearing 'forest' for plantations. To attract international investors, compliance with certification standards is essential.

113. The objectives of the action are:

- Mapping of land that is suited for forest plantations and qualifies for international certification standards (no conversion of natural forests);
- The mapping should be based on the existing information on land use mapping and the identification of areas suited for plantation forestry;
- The mapping should consider current land use, especially on community land, to minimize conflicts between companies and communities as well as food security issues
- The mapping should include degraded lands with the potential for rehabilitation with forest plantations.

114. The action supports a decision in favor of investing in planted forests in Mozambique, which ensures that an important investment risk is addressed and mitigated

115. The mapping should not only be conducted with the consideration of areas based on the natural forest definition, but also include other concepts such as areas with 'high conservation value'. It is directly related to the action "Definition of natural forest."

Products/Deliverables

116. Map with all areas suited for plantation forestry with a separate layer referring to areas which qualify for FSC certification.

Involved stakeholders

Leading organization: MITADER

Involved stakeholders: (a) Land use and GIS experts within MASA, (b) communities, (c) GIS and land use consultants, (d) international forest certification schemes (for example, FSC).

Available information and studies with respect to the proposed action

117. Mozambican forest companies have been certified or are in the final steps of the certification process. This suggests there are local experiences, either with the use of existing national definitions or other FSC procedures which can also be used as a starting point. Furthermore, the natural forest definition of FSC, which has been agreed in the three FSC chambers (social, ecological, and economic) should be implemented in the action.

Activities

118. The action can be performed within 18 to 24 months. The following activities will be developed:

Activity	Time Required	Leader
Compilation of existing GIS outputs regarding suitable areas for planted forests (MINAG, ESA) to support the elaboration of the base map	2 months	Consultants
Agreement on the base map	1 month	MITADER and MASA
Integration of a separate layer 'land qualifying for FSC certification'; remote sensing work and ground truthing	9 months	Consultants
Finalization of map 'suitable areas for responsible plantation forestry'	3 months	MITADER and MASA
Publication of map and presentation at international forest investment forums	3–9 months	MITADER and MASA

Key actors and roles

For mapping/remote sensing work: High-level representatives of MITADER and MASA, experienced consultants.

For promotion work: High-level representatives of MITADER and MASA, supported by marketing and promotion experts.

Assumptions and risks

119. The action is based on the following assumptions:

- Sufficient reforestation areas that qualify for international certification standards existent.

Risk: Only small areas qualifying for certification are available.

Risk mitigation: None.

- Process can be started and finalized within 24 months.

Risk: Project requires more time and/or runs out of budget.

Risk mitigation: Conduct the project with experienced consultants and sufficient budget.

Cost estimate and finance

Total costs: USD 700,000 to 1,000,000

Cost structure:

- Personnel (including consultants): USD 600,000 to 800,000
- Satellite images, travel costs for ground truthing: USD 100,000 to 200,000

Finance: GoM; international donor organizations.

Comments

120. Existence and presentation of such a map is a notable advantage in attracting international investors to Mozambique's planted forest sector.

121. The European Space Agency has conducted preliminary demonstration activities in using satellite data in mapping potential land areas for plantation development in Namarroi and Ile Districts in Zambezia Province.

Activity 3.3 Streamlining administrative processes for obtaining licenses

Rationale of the action and objective

122. Interactions with forestry companies in Mozambique indicate that there is a shared concern regarding long waiting periods for critical licenses (Environmental Impact assessment [EIA], UAT, environmental licenses). Once a company has successfully negotiated with local communities and come to a shared agreement to obtain a DUAT, the process related to obtaining the environmental licenses can sometimes take years. Understandably communities often have difficulties understanding the reason why it takes so long for companies to start operations since the land was 'given' to them long time ago. Actions from the government are therefore vital to overcome time gaps within the licensing process related to DUAT permission and environmental licensing. Another concern is regarding the patches of natural forest set aside for conservation within the DUAT area, where companies are held responsible, yet these areas should remain open access for local communities (where in turn sometimes these areas are converted to agriculture and are often the site of human-induced forest fires).

123. The objectives of the action are:

- Enhance faster and transparent administrative procedures concerning DUAT and EIA negotiations and implementation;
- Collaborate efficiently with different government cabinets to ensure quicker issue of licenses;
- Make public ongoing negotiation process to ensure the transparency of the process;
- Clarify the responsibility and access rights to patches of natural forests protected within the DUAT area.

124. The action supports the smooth and timely start-up of company activities by shortening the period between negotiations with communities and the effective initiation of activities, avoiding conflicts in company-community relationships.

Products / Deliverables

125. Design for streamlined administrative processes comply with requirements of current legal regulations.

Involved stakeholders

Leading organization: MITADER

Involved stakeholders: (a) Provincial Directorate of Environmental Coordination (DPCA) and MITADER, (b) Provincial Land and Cadaster Service (SPGC) and National Directorate of Land and Cadaster (DINAGECA), (c) District Services of Economic Affairs (SDAE) (d) Provincial Forestry Wildlife Service (SPFFB), (e) district administration, (f) communities, and (g) companies

Available information/preliminary studies with respect to the proposed action

126. Some good background studies are available, which will form the foundation for this activity.⁷

Activities and time line

127. The action can be performed within 20 to 24 months. The following activities will be developed:

Activity	Time Required	Leader
Establish and agree on a mechanism for close interaction between SDAE, district administration, companies and community leaders during DUAT and EIA process	3 months	MITADER
Establish a roadmap and a checklist with a timeframe for preparation and submission of relevant documents to provincial authorities: land processes to proceed to Land and Cadaster department and EIA to the Environmental department	1 month	Consultant
Establish a continuous interaction with other provincial departments involved in the processes to gather all information needed through an open access database and monitoring system	5 months	Consultant
Establish a guideline to support the compilation, approval and submission of all information to national authorities	6 months	Consultant
Clarify the use and access rights to natural forests protected within the DUAT area	2 months	Consultant
Engage decision makers to facilitate the final approval of DUATs by provincial governments (area < 1,000 ha), MITADER (between 1,000 and 10,000 ha) the Council of Ministers (for areas > 10,000 ha) and MITADER for EIA	6–9 months	Provincial government, MITADER in coordination with MASA, and Council of Ministers

⁷ ACIS. 2012. *Legal Framework for Recognizing and Acquiring Rights to Rural Land in Mozambique*. Edition 3; Chiziane, et al. 2015. "Legal Frameworks Enabling Sustainable Land-use Investment in Mozambique: Current Strengths and Opportunities for Improvement." Working Paper 193, CIFOR, Bogor, Indonesia.

Key actors and roles

High-level representatives of involved stakeholders (as indicated above);

Equipment for database and monitoring system.

Assumptions and risks

128. The action is based on the following assumption:

- Close and efficient interaction between different government departments to assure data can be made public and licenses are issued within a reasonable period of time.

Risk: No joint effort between government staff.

Risk mitigation: Strong encouragement by directors in each government department to motivate civil servants

Cost estimate and finance

129. The costs required to implement this action, apart from the already existing human resources allocated in governmental institutions, would go towards hiring a consultancy to establish an information system. Additional costs would include training to improve the efficiency of staff in different departments.

Total costs: USD 700,000

Cost structure:

- Consultancy (database and monitoring system): USD 100,000
- Establishment of the monitoring system: USD 500,000
- Training and high-level personal engagement: USD 100,000

Finance: GoM; international donor organizations

Comments

130. The product of this action will not only reduce possible friction between companies and communities due to the long time lags between community consultations and the beginning of forestry operations, and the use of protected forest within DUAT areas, but also can potentially accelerate the establishment of planted forests in Mozambique.

Activity 3.4 Updating forest legislation for non-native timber species

Rationale of the action and objective

131. Both the forest and wildlife law and their regulations, 1999 and 2002 respectively, were reviewed so that they comply with the principles of sustainable forest management. The regulation, however, is mostly focused on native forests. The only articles relevant to forest plantations state that a DUAT (Art. 79) and an environmental license (Art. 81) are required before the establishment of industrial plantations. The regulation also says that logging in forest plantations can be conducted without logging fees or taxes, but that the owner of the plantation must submit an official request for the operation to the Forest Service (Art. 38).

132. The inclusion of a number of articles regarding the use of non-native species are needed in the law, including articles concerning the transport documentation outside the province of activity and in regard to the export of raw or processed timber products.

133. The objectives of the action are:

- Inclusion of regulations related to non-native timber species in the forest legislation of Mozambique, especially related to timber transport.
- Update of the regulation should be in line with the laws in place in other countries of the Southern African Development Community (SADC).

134. This action is critical to support the commercialization of harvested and processed timber coming from existing commercial plantations in Mozambique and to facilitate the actions of future companies with timber ready for international markets.

Products/Deliverables

135. Updated forest legislation on non-native timber species.

Involved stakeholders

Leading organization: MASA.

Involved stakeholders: (a) National Directorate of Agriculture and Silviculture, (b) private forestry companies, and (c) MITADER

Available information and studies with respect to the proposed action

136. Laws are already in place in other SADC countries.

Activities and time line

137. The action can be performed within 20 to 24 months. The following activities will be developed:

Activity	Time Required	Leader
Revision of gaps in the current legislation concerning non-native species	5–6 months	Consultant
Discussion of preliminary policies to be updated or refined together with key stakeholders (workshop)	10–12 months	Consultant with MASA and MITADER
Preparation of new draft regulations	12–15 months	Consultant with MASA and MITADER
Final agreement on the revised articles, and their formal approval and incorporation into forest legislation	1–2 years	MASA and MITADER

Key actors and roles

138. High-level representatives of key stakeholder groups and a local consultant.

Assumptions and risks

139. The action is based on the following assumption:

- An effective collaboration between the GoM and the private sector can refine and improve the policies which need to be updated

Risk: No agreement on the approval of the articles.

Risk mitigation: Consider the laws implemented in other countries as a reference, and consider Mozambique's objective of planting 1 million ha by 2030.

Cost estimate and finance

Total costs: USD 50,000

Cost structure:

- Stakeholder consultation and workshops

Finance: GoM, international donor institutions

Comments

140. The improvement of policies that can address non-native timber species will facilitate not only the commercialization of such products but also other value-added activities in and around non-native species.

Activity 3.5 Guidelines for CSR

Rationale of the action and objective

141. A reason why some private companies get discouraged to invest in Mozambique is the emergence of several unexpected costs during the time of project implementation. Guidelines on CSR are needed to clarify what is expected of investors and what is the responsibility of the Government. This is needed to avoid unexpected and unplanned costs. CSR should be a voluntary matter but in Mozambique, expectations from communities often become preconditions for gaining access to land (DUATs). Construction and rehabilitation of basic facilities such as health centers, boreholes, wells or schools in rural areas and fundamental infrastructure are often expected by communities (and sometimes by local authorities too) to be financed or supported by companies. Many times this leads to arguments on whether these required investments are the Government's or company's responsibility.

142. In the first CSR Conference and Exhibition (CSR MOZ 2015), companies operating in Mozambique were appealed to join the Government in its efforts to combat poverty through the conception and implementation of socially responsible actions, particularly in those communities surrounding their areas of activity. Most forestry investments contribute with these kinds of projects. These include agricultural partnerships, community funds, forestry outgrower schemes, and road improvements.

143. Since it is not clear what is expected from forest investors in return for access to land, it is essential to clarify their expected duties and responsibilities. This would help companies to calculate their investments in social projects and improve the negotiation processes.

144. The objectives of the action are:

- Provide guidelines for forestry companies with regard to their social responsibility when negotiating with communities for land access: these guidelines would also make clear what is expected of government.
- The CSR guidelines should take into consideration countries that already implemented CSR policies and also should be aligned with international FSC standards and the International Finance Corporation (IFC) guidelines.

145. This action supports rural development through implementing clearly structured programs, and creating company-community-government dialogue and synergetic relationships. It provides orientation for companies to clearly understand their responsibilities and guide their social investments. This way, companies will know more specifically what is expected from the GoM.

Products / Deliverables

The following products are expected:

- Guidelines for CSR in Mozambique.

Involved stakeholders

Leading organization: MASA (MITADER).

Involved stakeholders: (a) private forest companies, (b) local communities, (c) NGOs - for instance, Technoserve, ADRA, AGRA, and Winresources to support production programs such as outgrowers schemes, (d) government authorities, (e) local leader, (f) consultant (expert in CSR development programs).

Available information/preliminary studies with respect to the proposed action

146. Key lessons learned from past experiences need to be taken into account, and a CSR guideline would certainly help improve the business climate in the plantation forestry sector.

Activities

147. The action can be performed in approximately 2 years. The following activities will be developed:

Activity	Time Required	Leader
Corporate Social Responsibility		
Review regulations and IFC/FSC standards and guidelines for the categorization of different social responsibilities as well as CSR practices within and outside of Mozambique	6 months	Consultant
Systematize and evaluate projects implemented by other companies and summarize the results of the survey in a report	6 months	Consultant
Present results in a workshop with relevant stakeholders to establish a consensus	1 month	MITADER
Draft guidelines on CSR according to the study and above-described workshop and circulate for feedback	2 months	Consultant with MITADER
Complete guidelines	2 months	Consultant with MITADER
Final approval of guidelines on CSR	1–2 years	MITADER

Key actors and roles

Task force consisting of:

- National government authorities;
- Consultant;
- Company representatives.

Assumptions and risks

148. The action is based on the following assumptions:

- The existence of a joint understanding on CSR that helps investors to plan their social responsibility programs and duties.

Risk: High requirements/expectations might hamper forest investors from investing in the sector.

Risk mitigation: Ensuring realistic implementation and allowing for participatory and transparent negotiation processes with companies and supported by NGOs

- Documented guidelines, accessible for current and future companies, will assist preventing unplanned and unforeseen expenses for forest investors

Risk: Guidelines not applicable in certain cases, having no space for alterations

Risk mitigation: Guidelines should have space for adjustments, and changing production conditions and/or society.

Cost estimate and finance

Total costs: USD 270,000.

Cost structure:

- Consultant, companies consultation and workshops.

Finance: GoM; international donor organizations.

Comments

149. The implementation of CSR programs is often left to a later stage and executed once communities, local leaders, or government insist on their execution. Having guidelines for CSR will guide companies in effectively planning their operations and establishing different programs, and it will make it clear what is expected from companies. CSR guidance should be in line with the updated DUAT negotiation/consultation processes which are conducted with local communities.

Activity 3.6 Company-community negotiations on land allocation

Rationale of the action and objective

150. The access to land and the associated security issues with ensuring access are limiting factors which can limit investments in the planted forest sector in Mozambique. To secure their access to land, companies enter into a negotiation process with local communities. Negotiations between the forest company and communities starts with the DUAT acquisition process which focuses on community consultation. After the attribution of the DUAT, the forestry company may initiate their activities, however, often several conflicts arise, for example, existing *machambas*, fruit trees, sacred places, relocation of households and changes in social responsibilities, which represent key considerations which were not properly discussed during the consultation process. Based on the experiences and lessons learned from forestry projects in Mozambique, a lack of transparency and limited compliance with legislation requirements in the community-company consultations are among the main causes of conflict during the negotiation process. Local authorities' contribution is to make sure consultations follow all steps determined in the land law (Law number 19/97) and in the Community Consultation Manual (Diploma Ministerial No. 158/2011 de 15 de Junho), which clearly outlines required procedures to follow. It is common, however, that shortcuts are made and that this manual is not closely followed. For instance, some authorities are not present or only a few community members or only the relatives of influential local leaders participate in the consultation.

151. The objective of this action is to review the current system and to build capacity to improve the land negotiation process between forest companies and communities. This action will assure that communication is more efficient and transparent during company-community interactions, through ensuring the presence and active participation of relevant government authorities. Strengthening leadership at the community level will also contribute to achieving better and officially documented negotiation results. In addition, the appointment of a neutral mediator (NGO or civil society organization) to ensure understandable agreements are made during company-community negotiation processes; the mediator may also be involved in monitoring the results and supporting future conflict resolution.

152. This activity needs to be coordinated closely with Activity 4.3, which specifically builds capacity in local government not just for land negotiations but to improve communications between all the parties—investors, government, and communities.

Products/Deliverables

153. The action should produce the following products/deliverables:

- List of current concerns in local communities regarding negotiation processes with companies.
- Compile relevant DUAT legislation.
- Guidelines on best practices for DUAT negotiation⁸ processes between the Government, communities and companies.

⁸ In fact, there already exist a guideline about best practices for DUAT, land negotiations, and mediation processes with professional mediators (Diploma Ministerial N° 158/2011 de 15 de Junho. Please check if the guidance is enough or additional action is needed in this direction: <http://faolex.fao.org/docs/pdf/moz104298.pdf>).

- Establish a mediation process and a professional mediator for DUAT negotiations.
- Create capacity in local governments (district, locality) to carry out and facilitate credible and transparent consultations.
- Improve communications and data sharing across sectors in relation to land use and develop a registry of land use activities.
- Ensure transparent and well-documented agreements between the company and communities.

Involved stakeholders

Leading organization: MITADER

Involved stakeholders: (a) private companies (register and file any interaction with communities), (b) communities, (c) Government and relevant civil society organizations (ensure that the land law and forestry and wildlife related legislation and relocation plans are followed during community consultation processes or during other negotiation processes), (d) councils on local level (Conselhos Consultivos de Povoação e de Localidade), and (e) MASA.

Available information / preliminary studies with respect to the proposed action

154. Cases of land conflict are quite often mentioned in Mozambique, not only in the forestry sector, but also in the mining and agriculture sectors.⁹ Various approaches and legal initiatives to improve the current negotiation processes have been suggested, such as the creations of councils and committees to support negotiation processes (COGEPs, CC, and CGRN).

Activities

155. The action can be performed within 24 to 30 months. The following activities will be developed:

Activity	Time Required	Leader
Short-term (one-off activities):		
Assessment of current concerns in both communities and companies regarding negotiation process.	4 months	Consultant
Review and analysis of relevant legislation.	1 month	Consultant
Establish written contracts to document the agreements between communities and the private companies	1 month	Company
Implementation of negotiation and conflict management strategies	3 months	Company

⁹ Norfolk, S., Hanlon, J. (2012). Confrontation between peasant producers and investors in Northern Zambezia, Mozambique, in the context of profit pressures on European Investors. Paper prepared for presentation at "Annual World Bank Conference on Land and Poverty", Washington DC, April 23-26, 14p.

Activity	Time Required	Leader
Creation of a commission at the district level to monitor the implementation of the plantation projects and mediate negotiations	6 months	MASA
Create a document with guidelines to improve company-community negotiations	2 months	Consultant
Longer-term activities:		
Creation of participatory management councils (COGEPs) to facilitate the: <ul style="list-style-type: none"> • Management of natural resources; • Conflict resolution; • Process of issuing DUAT through the authorization, application, delimitation and demarcation of their community land. 	18 months	MITADER
Develop the capacity of local governments (district and locality) and ensure the legitimacy of the processes within higher institutions	18 months	MITADER, Ministry of State Administration
Creation of Community Land Committees and Community Natural Resource Management Committees (CGRN) as part of the delimitation process to clarify the exact limits of the community's land rights	18 months	MITADER
Mediation of negotiations	24–30 months	Civil Society Organizations (CSOs) or NGOs
Strengthening decentralization by reinforcing communication and coordination between the provincial and district level	24 months	Responsible Ministry

Key actors and roles

The following staff are needed:

- Government authorities at the local, district, and provincial levels;
- Community members capable of integrating COGEPs, CGRN, and Community Land Committees;
- Company staff trained and/or with experience in community rural development;
- Civil society organizations;
- Consultant.

Assumptions and risks

156. The action is based on the following assumptions:

- Community consultation process to be conducted according to the Land Law with as much participation and transparency as possible.

Risk: Lack of time from all involved parties to be present in all sessions and implemented processes are not compliant with the law.

Risk mitigation: Companies must make sure all steps in the law are properly followed as land acquisition is the first important process that will drive the success of their overall business operations.

- Strengthening the leadership at the community level to achieve better negotiation results.

Risk: Lack of continuous support from civil society organizations or/and NGOs conducting the leadership training programs.

Risk mitigation: Provincial and national governments should support the organizations to ensure leadership training programs are supplied; Continuous training programs should be implemented for district and local administrators and consultative council members.

Risk: Discrepancy between perception of negotiation results between companies and communities.

Risk mitigation: Negotiation results have to be officially documented and agreed upon by both parties in the form of a signed contract. There needs to be systematic monitoring of the implementation of the agreements.

Cost estimate and finance

157. Total estimated costs for a period of 30 months: USD 300,000

Costs:

- Assessment of shortcuts within current negotiation process and compilation of relevant legislation; USD 20,000
- Elaboration of best practice manual for DUAT negotiation process; USD 50,000
- Trainings to improve negotiation skills on all levels; 20 trainings spanning 3 days at a cost of USD 10,000 to 200,000
- Dissemination material. USD 30,000

Finance: GoM, companies assisting the training session, co-finance options by international organizations.

Comments

158. Among all the actions to be implemented or reinforced, the facilitation of community-company negotiations is undoubtedly the one with the highest priority ranking.

3.4 Smallholder-integration-related Actions

159. More than 60 percent of Sub-Saharan Africa's population resides in rural areas, of which a majority can be considered as smallholder farmers. This study identified a lack of fluent communication between communities and companies, companies and the local government, as well as between the communities and the government/public administration. Another concern is that communities often have high expectations regarding the available labor opportunities generated by forestry operations, which are often unrealistic when considering the actual opportunities generated. This can turn into disappointment, and may lead to conflicts between communities and companies. A concern shared by companies is the weak presence of district governmental officials to deal with company-community matters.

160. Smallholder integration is closely linked to the social, cultural, and traditional life of rural populations and communities. To ensure successful implementation of this action, there should be special consideration to ensure gender-balanced teams and evaluate the role of women within the partnering rural communities. To guarantee equal and sustainable development it is important to determine, evaluate, and implement the needs and considerations of the female population.

161. The smallholder-integration-related actions described in continuation are:

- Formalizing CCPs;
- Support for private tree growers, including outgrowers;
- Capacity building for decentralized Government in company-community communications.

162. The activities are slightly different from other proposed activities in the roadmap. Particularly Activities 4.1 and 4.3 propose a new way of organizing Community-Community Partnerships and Support to Smallholder Tree Growers. They are not time bound one-off activities like the other activities but rather models for engaging with stakeholders on a continuous basis.

Activity 4.1 Formalizing Community-Company Partnerships

Rationale of the action and objective

163. Companies who wish to invest in forest plantations depend on neighboring communities for labor, fire prevention and protection, sharing the same resources, environmental aspects, acceptance, and a good working environment. Apart from international IFC standards and CSR requirements from investors, the dependence in Mozambique on maintaining a good working relationship is even stronger because companies cannot buy the land, but instead have to negotiate with communities for long-term land access in exchange for compensation. This negotiation for DUATs itself is a long process until an agreement can be achieved and basically never ends since expectations from both sides, circumstances, and outside influences might change during the years of project implementation. Therefore, good community-company relationships and a strong partnership are essential to smoothly establish, manage, and harvest forest plantations within a constructive environment.

164. Also, forestry companies do not have experiences in social negotiation processes; their expertise lies in forestry techniques and management. It is therefore recommended to have strong third-party participation in the negotiation process to provide expertise and neutrality in the land negotiation process. The negotiations could be a joint responsibility between the Government and company, and would give the company secure land access with reduced social and reputational risks. There is a strong overlap with the previous action (which refers specifically to the land negotiation process), because it is difficult to separate CCPs from land negotiation processes in the context of Mozambique.

165. The objectives of the action are:

- Establish a good communication and working relationship with communities;
- Create fair and transparent partnerships, where communities can grow and participate in the companies' benefits;
- Establish community enterprises as partners for mutual benefit;
- Establish a company-community communication department within the forest company to maintain permanent contact between the company and communities.

166. By achieving these objectives, there will be a fluent communication channel to address concerns and problems in the first phase of the project and to ensure win-win situations will be achieved in the long run by developing a common interest. This action allows for secure investments based on a solid agreement between the investor and local communities throughout the entire timespan of the company's operations. This will allow the investor to carry out their operations with clearer investment requirements and reduced social and reputational risks.

Products/Deliverables

167. Description of the product(s)/deliverables of the action:

- Objectives, rules, and regulations for the partnership between company and community established through consensus and presented in a written form;

- Communication and information channels;
- Systematic monitoring and follow-up mechanism;
- Grievance and conflict resolution mechanisms;
- Defined mediators;
- Economic and social benefits defined, outlined, and established;
- Community organizations and companies;
- Common benefits and objectives.

Involved stakeholders

168. *Leading organization:* Involved companies (possibly vested to another group or organization), government representatives, and a professional mediator/negotiator (third-party) for the negotiation process assigned by the company.

169. *Involved stakeholders:* (a) companies, (b) communities, (c) facilitators (hire professional NGO or permanent community workers), (d) official representative as mediator (for example, religious leader, local leader, elder, trustful politician or government representative), (e) responsible district and local authorities, and (f) professional negotiation service provider (that is, NGO as ORAM, FDC).

Available information/preliminary studies with respect to the proposed action

170. Most of the plantation companies interact directly with communities without mediators. The Government is rarely present during the community consultation process for DUAT acquisition and is not involved in further company-community discussions.

Activities

171. The following activities are seen as a sequence and can be performed within 5 years. These kind of negotiations and developments take time and require patience from the investor's side. To ensure the representation of diverse needs and perspectives within local communities, women and men should be equally involved in the activities.

Activity	Time Required	Leader
Stable contractual base between company and community		
Carefully select a mediator for the negotiation process	4 months	Local government and company
Prepare clear and transparent information on what needs to be addressed with the community	4 months	Service provider and company
Schedule meetings in and post the agenda in areas which commonly host community	6 months	Service provider and company

Activity	Time Required	Leader
gatherings (local store, church, home of a respected elder, and so on)		
Start the negotiation process and clarify expectations, establish possible outcomes, define outcomes and products, and plan feasible company investments	10 months	Negotiator
Record all matters discussed and decisions taken in writing with a list of attendees attached to it	12 months	Negotiator
Organize a follow-up meeting to inform the government about decisions that the required senior company members' have approved	5–9 months	Negotiator, company, local government
Organize a final meeting with all involved stakeholders to 'sign' and announce the agreement with a clear roadmap of investments and responsibilities	6 months	Negotiator
Establish fair and stable CCP		
Clearly communicate objectives, expectations, rules, and regulations	3 months	Company
Establish communication channels between communities and company	6 months	Company
Establish grievance mechanisms	6 months	Company
Establish transparent information channels and a monitoring system	6 months	Company
Establish conflict resolution mechanisms	5 months	Company
Jointly define possible mediators	5 months	Company
Establish social projects to build trust and confidence (that is, water points, school books or equipment, repair buildings)	6 months	Company
Support economic and social benefit projects (for example, outgrower schemes, food security programs, school buildings, health centers, capacity building)	3 years	Company
Support the development of community organizations and companies through the provision of training and credits (for example, community tree nursery company, community transport companies, community service providers for planting, weeding, pruning, and spot spraying)	2.5 years	Company

Activity	Time Required	Leader
Develop a mechanism where communities participate in the companies' benefits and objectives (community plantations, service provider companies, agriculture service providers, agriculture hub)	2.5 years	Company

Key actors and roles

172. Trained team facilitating the partnership at the local level:

- 1 company community worker per 4 to 10 villages, hired directly by the company or by a vested NGO;
- 1 thematic specialist hired on demand or may also be maintained as permanent staff (for example, beekeeping, tree planting, fruit trees, agriculture production, vegetable garden, health issues);
- 1 mediator selected by the company from a local NGO or civil society organization;
- 1 community leader elected by the community;
- Gender-balanced team to ensure equal participation of men and women.

173. During the whole process, it is important to get the government on board, with regard to regular information, consultation, communication, and conflict resolution (if necessary). International organizations and projects can complement the efforts through the provision of technical assistance projects. This could be highly beneficial for the company.

Assumptions and risks

174. This action is based on the following assumption:

- Only a common interest between communities and companies will allow smooth project implementation in the long run. Communities should reach a level where they can negotiate with the company at the same level with a common interest.

Risk: The communication and partnership component of an investment is underestimated and under-budgeted. This could lead to serious problems and conflicts. The possible financial damage from not establishing a strong partnership is, however, higher than investing in a stable partnership from the beginning. Poor community relations may lead to notable operational and reputational risks.

Risk mitigation: Establish CCPs based on respect and trust from the beginning of the relationship (DUAT negotiation process). Ensure that functional grievance mechanisms are in place.

- The possibility for companies to efficiently develop their operations will only be given if there are stable negotiations with communities.

Risk: Not reaching a final consensus on certain topics due to lack of communication.

Risk mitigation: Ensure communication and information exchange with communities occurs frequently.

The existence of a stable contractual base between the company and community can avoid major conflicts.

Risk: Poor mediating capacity or favoring one of the parties.

Risk mitigation: Rigorous selection process for selecting only highly competent mediators.

Cost estimate and finance

175. Investments in CCPs should range between 2 to 4 percent of the overall plantation investment costs. However, establishing service provision companies, outgrower plantations, or other investments by the communities may reduce production costs for the company.

Total costs (based on a stable contractual basis between the company and communities): USD 2,000,000 to 3,000,000 in the next 5 years, assuming:

- Successful finalization of 15 to 20 DUAT negotiation processes with an average size of 10,000 ha of plantable area
- Per closed deal one broken deal

Cost estimate per DUAT negotiation:

- Personnel companies
(planning officer, social development officer): USD 50,000
- Mediator: USD 25,000

Finance: Forestry companies with co-finance, for example, technical assistance facilities within development banks.

Comments

176. Social investment costs are usually underestimated and not prioritized at the beginning. For investors the establishment of forest plantations has a higher priority than investments in social capital. If CCPs fail however, then the costs for 'repairing the damages' can be much higher than the upfront investment in stable partnerships.

177. The existence of a stable contractual basis, established with communities and developed through mediation, will avoid a number of conflicts and in many cases determine the success of the companies' operations in the long run.

Activity 4.2 Support for private tree growers – including outgrowers

Rationale of the action and objective

178. Promoting tree planting for private growers (entrepreneurs and communities) and government institutions (schools, churches, municipalities, hospital, and so on) through outgrower partnerships with private forestry companies and communities, have shown not only the numerous benefits for both parties, but also how these initiatives can contribute to the development of the region. Despite the broad implementation of outgrower schemes by the private sector in other countries, so far in Mozambique there have been few programs developed through private investments.

179. Currently it is not clear if or what type of legal registration (land title, land registration, DUAT) is required for private outgrowers (farmers), and whether or not they would be willing to enter into a partnership with companies. The lack of a legal basis for outgrower programs and guidance on the best way to set up such programs is restricting their development in Mozambique. By establishing a legal mandate to promote reforestation activities, there would be a stronger incentive to develop outgrower schemes and promote tree planting.

180. Companies also need guidelines for best practices for setting up outgrower schemes and for supporting tree growing in general.

181. The objectives of this action are to:

- Create a legal basis for forestry outgrower schemes in the forest legislation of Mozambique;
- Specify which type of legal registration requirements are obligatory for tree growers (for example, DUAT, land title, land registration);
- Provide guidelines for supporting outgrowers based on success stories from elsewhere;
- Strengthen the relationship between communities and companies from the beginning, ensuring continuous interactions and support for smallholders;
- Increase the planted area that the GoM wants to achieve by 2030 and also create awareness about the importance of forests.

182. The action will contribute to promoting the integration of smallholders in tree planting, reducing pressure on native forests, creating additional income for poor farmers, establishing trust and confidence between local communities and companies, and protecting companies' plantations. Lessons should be learned from forestry outgrower schemes in other countries.

Products/Deliverables

183. The following products are expected:

- A list of examples and evaluation of successful outgrower schemes implemented in other countries;

- A document which provides best practice guidelines for private companies to implement outgrower partnerships with smallholders or any other organization that is interested in tree growing;
- A documented legal basis for forestry outgrower schemes in the forest legislation.

Involved stakeholders

Leading organizations: MITADER and MASA.

Involved stakeholders: (a) private forestry companies, (b) National Directorate of Agriculture and Silviculture, (c) National Directorate of Geography and Cadaster (DINAGECA), and (d) national and international NGOs (with knowledge in forestry).

Available information / preliminary studies with respect to the proposed action

184. There is no current legal basis for private tree growers in Mozambique. Literature about successful outgrowers' schemes is listed in the references of the report on smallholder support.

Activities and time line

185. The action can be performed within 15 to 24 months. The following activities will be developed:

Activity	Time Required	Leader
Screen best practices of outgrower schemes (with a focus on the forestry sector) in and outside of Mozambique	6 months	Consultant with MASA
Review legal basis for private tree growers (land issue) - both inside and outside Mozambique.	6 months	MITADER
Present results in a workshop with relevant stakeholders	1 month	Consultant with MITADER and MASA
Draft guidelines to be circulated for feedback	2 months	As above
Elaborate a draft regulation for outgrower investments as a consensus between companies and the GoM	6–8 month	MITADER
Approval of the legal basis for forestry outgrowers and its integration in relevant forest legislation	1–2 years	MITADER

Key actors and roles

Engagement of an experienced consultant with relevant representatives from MASA, MITADER, and private forestry companies.

Assumptions and risks

186. The action is based on the following assumptions:

- The development of a legal framework to support the establishment of outgrower schemes can be accomplished in a maximum of 2 years.

Risk: No approval of the legal framework due to a lack of consensus between stakeholders

Risk mitigation: Persistence and focus on the advantages of establishing a legal basis

Cost estimate and finance

Total costs: up to USD 200,000

Cost structure:

Cost for consultant and workshops, travel expenditures for meetings with stakeholders.

Finance: GoM and international donor organizations.

Comments

187. The establishment of a framework to specify legal requirements such as DUAT, land title or land registration acquisitions will not only be beneficial for investors, but will also increase the number of hectares of planted forests being promoted by the GoM, and provide additional earnings to smallholders.

Activity 4.3 Capacity building for decentralized Government in company- community communications

Rationale of the action and objective

188. Decentralization and delegation processes to improve local and economic development at the district level have been mentioned in Mozambique since the 1990s, together with a reform program centered on local institutions. While some progress has been made, field interactions show that there is still a lot of work to be done in rural areas to empower local governments to solve conflicts in the community and to promote local development. While public investments in rural service delivery are beyond the scope of this report, local government's absence from negotiations between companies and communities is a cause for concern.

189. Results from interviews have shown that companies feel left alone when interacting with communities, and provincial and district governments sometimes lack the required capacities or a clear mandate to become engaged in these interactions often due to insufficient technical and human resources. It is therefore crucial for the government to be present in the first interactions between companies and local communities to mediate negotiations and come up with clear and fair binding agreements.

190. The objectives of this action aim to:

- Involve local government in the negotiation process between companies and communities;
- Enhance the participation of local governments in the establishment of clear agreements and possible conflict resolution processes between companies and communities;
- Develop the competence of local governments to support dialog at district level regarding forestry issues.

191. The action supports the fundamental company-community relationship. There will be an improved basis for communication and an 'early warning system' for possible conflicts. Furthermore, the parties will be provided with appropriate tools to resolve potential conflicts, and the action will promote effective rural growth and development. District government officials will further benefit by having access to information related to forestry activities on the ground, which in turn can support decision-making processes within their district and support land use planning processes.

Products / Deliverables

192. Establishment of a unit assigned to discuss forestry matters, in existing government structures at both the locality and district level, to guarantee fluent communication between the two levels. The existing Consultative Councils (CCs) and Participatory Management Councils (COGEP) should be used for such interactions.

Involved stakeholders

Leading organization: District Services of Economic Affairs (SDAE).

Involved stakeholders: (a) government district authority, (b) companies, (c) community representatives, and (d) District Consultative Councils.

Available information / preliminary studies with respect to the proposed action

193. There is no information about such activities within in Mozambique. However, the Ministerial Diploma 158/2011 provides the procedures for consultation process which include the participation of district and local authorities.

Activities

194. The action can be performed within a timeframe of 6 to 7 years. The following activities will be developed, however, not necessarily as a sequence due to the dynamics in both companies and communities:

Activity	Time Required	Leader
Gather accurate information about long-term company objectives, plans and priorities; especially at the district level	5 months	SDAE
Assure that boundaries of areas as requested by companies are fully understood by communities and local authorities	6 months	Company
Provide capacity building and training on relevant laws within communities, together with the support of local NGOs or civil society organizations	2–3 years	SDAE
Schedule regular meetings with representatives at the local and district level to address any concerns in the community, address potential problems that may be arising, and to inform them of any new developments related to forestry programs	1–2 years	SDAE
At the district level, introduce a filing system containing all meetings, which registers all matters brought up by communities	3–4 months	SDAE
Investigate, understand, and mediate company and community relations in the instance of concerns and problems (district governments can seek help from the provincial level if conflicts remain unsolved or escalate)	24–30 months	District authority
Establish clear communication channels and grievance mechanisms	6 months	SDAE
Mediate discussions and participate in conflict resolution	12 months	SDAE
Evaluate and monitor the implementation of programs planned by the company and/or decisions taken in meetings	24 to 30 months	SDAE

Close interaction with companies and communities to obtain updated information when gatherings do not occur frequently or when planned actions do not take place as planned	24–30 months	SDAE
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Key actors and roles

Task force:

- 2–3 CC and/or COGEP members (to report directly to the district government);
- 1 district officer (SDAE or district administration) to respond to the provincial forest service;
- 1 local community leader per village (elected by the community, to report back to the community);
- 1 company social development officer per 5 to 10 communities;
- NGOs and civil society organizations (specialized in areas that promote rural development, capacity building related to relevant laws and topics, and so on).

Assumptions and risks

195. This action is based on the following assumption:

- Successful CCPs rely on effective communication and the constant flow of information between the two parties. Remote areas in which private forest investments operate make these communication channels even more crucial. The support of decentralized governments aims to increase trust, confidence, promote enhanced communication and relationships, and act as an early warning system detecting possible conflicts, which can then be tackled at an early stage.

Risk: Lack of capacity within district authorities, which in turn may create more conflict.

Risk mitigation: Train staff in conflict resolution and ensure information is clearly communicated highlighting the company’s long-term objectives and opportunities for potential partnerships.

Cost estimate and finance

Total costs: USD 1,000,000 to 1,500,000

Cost structure:

- Personnel (district authority): USD 750,000 to 1,000,000
- Personnel (local leaders): USD 250,000 to 500,000

Finance: GoM; international donor organizations

Comments

196. The participation of decentralized government representatives in meetings will benefit not only the company and communities, but will also provide permanent updated information to the Government, which constantly claims that it does not have data or current information about companies' forestry activities. It will also enable the coordination of parallel projects; for instance, the plan for road rehabilitation might already be a government program or linked with other private investments.