




EASTERN AFRICA BAMBOO PROJECT		
funded by 	executed by 	supervised by 
ETHIOPIA Ministry of Agriculture and Rural Development Federal Micro and Small Enterprise Development Agency		KENYA Kenya Forestry Research Institute

Technical report:On Legal Environment Assessment and Policy and StrategySuggestions

Prepared for the Government of ETHIOPIA

By the United Nations Industrial Development Organization
Acting as Project Executing Agency for the Common Fund For
Commodities (CFC)

Report Reference Number: Rep001

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This project is being financed by the Common Fund for Commodities, an intergovernmental financial institution established within the framework of the United Nations, headquartered in Amsterdam, the Netherlands.

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Acronyms

ARS:	Amhara Regional State
CSE:	Conservation Strategy of Ethiopia
EBSAP:	Ethiopian Biodiversity Strategy and Action Plan
EFAP:	Ethiopian Forestry Action Plan
FEMSEDA:	Federal Micro and Small-scale Enterprises Development Agency
FRC:	Forestry Research Centre
HQ:	Head Quarter
IBC:	Institute of Biodiversity Conservation
IC:	International Consultant
MOARD:	Ministry of Agriculture and Rural Development
NC:	National Consultant
NPC:	National Project Coordinator
ORS:	Oromiya Regional State
REMSEDA:	Regional Micro and Small-scale Enterprises Development Agency
SNNPRS:	South Nations, Nationalities and Peoples Regional State
UNIDO:	United Nations Industrial Development Organization
FPURC:	Forest Products Utilization and Research Centre

1. Introduction

Ethiopia is an agrarian country that depends entirely on agriculture and biological resources for its survival. Its socio-economic growth and development and environmental improvement endeavours are accordingly focused on accelerated improvement of agricultural and other biological resources productivity optimization. It is following an “agriculture led industrialization” strategy to solve its socio-economic problems and to further improve and advance the wellbeing of its populations and their environments.

Bamboo constitutes a considerable portion of the renewable natural resource of Ethiopia, about one million ha of almost pure natural bamboo forest. The potential of this resource to serve as an engine for socio-economic growth and development is enormous, as could be observed from the socio-economic and environmental role of bamboo resource in the Southeast Asian countries.

Currently, bamboo forest establishment, management, expansion, harvesting, processing and marketing have already created off-farm and/or supplementary job and income for thousands of farmers. There are also many landless rural inhabitants that depend entirely on bamboo processing and bamboo item production. Likewise many bamboo-based small firms that employ many workers are flourishing in urban areas like Addis Ababa. This level of income and employment generation is, however, inconsiderable when compared with its enormous potential. Improving and up-scaling the bamboo production to consumption system could and should certainly increase job and income generation in order of magnitudes.

Two fundamental factors are crucial for utilizing a renewable natural resource effectively, efficiently and on sustainable basis. These are science (knowledge and skill) and the willingness and determination to utilize it on sustainable basis, as expressed in the prevailing legal environment (policy, strategy, proclamations, legislations, guidelines, community bylaws) of Ethiopia.

The principal objective of this study is to analyse forestry and other laws and legal arrangements relevant to the Ethiopian bamboo resources conservation, expansion, sustainable management and utilization through appropriate industrial development of small, medium and large scales; and suggest policy and strategy for accelerated development and use on sustainable bases.

It is one of the many studies made, and being made, by international and national consultants commissioned by the project. The suggested policy and strategy items could be improved later in light of the findings of the other studies.

2. The approach followed to conduct the study

The study was conducted as per the TOR given to the National Consultant (NC). The TOR was reviewed jointly (NC and IC) and revised in light of resource availability (time and finance) and practicability in the Ethiopian context. It was carried out based on a brainstorming meeting with the International Consultant (IC) and under the supervision of the National Project Coordinator.

The task was planned by the project to be completed by one month. One week was spent exchanging ideas with the IC, discussing on approaches, methodologies for implementation of the task, identifying most appropriate stakeholder institutions and individuals to be included in the study and visiting most relevant institutions in Addis Ababa. Another one week and half was spent collecting pertinent documents and discussing with the identified stakeholders

in Addis Ababa, more than one week was spent visiting stakeholders in the Bahridar (Amhara Regional State), Tana Belese (Benishangul and Gumuz Regional State) and Awasa (Southern Nations Nationalities Regional State) towns. The few days remaining were supposed to be used for writing this report. However, in practice it took double of the planned time with no extra financial budget.

Review of pertinent documents and information gathering from representatives of selected institutions and individual stakeholders (growers, traders, processors) based on interactive discussions guided by key issues/questions were the approaches used to conduct this study. Institutions (federal and regional) that provided pertinent documents and other information are listed in appendix 4 and the key issues and/or questions that guided the interactive discussions are given in appendix 3. Documents consulted are listed in Appendix 1.

3. Study Limitations

The scope of the task calls for comprehensive and in depth study of the bamboo situation in Ethiopia and the factors that shaped and determined its present state, and how these factors are formalized in the legal environment. It also demands drawing of beneficial experiences from other countries more advanced in bamboo management and utilization, like P. R. China. However, resource (time and finance) limitations dictated the task to focus on cursory review of the bamboo utilization situation and pertinent existing laws that determined its present condition.

No scientific methodology was followed to determine the number and location of study sites and the number of information providers in each of them. The study sites were intentionally pre-selected by the project based on the preponderance of bamboo resources and conversion and marketing activities.

Official documents of Ethiopian bamboo resource study reports are not many. Proclamations, legislations and guidelines specific to the Ethiopian bamboo resources conservation, expansion, management, processing, and marketing are lacking. Consequently, there was no better alternative than relying on the very few documents made available by the consulted stakeholder institutions and by the National Coordinator and the NC's own resources. Alternative model approaches and methodologies were not provided other than the brain storming meeting between the NC and the IC. Moreover, pertinent information and experience on the study was not at the time abundantly available on the internet.

4. Main findings of the study

Our increasing awareness on the role of bamboo in economic growth and development is the driving force for this study. Accordingly the findings of this study will first present aspects of the resource potential and status before taking up the legal environment and incentive structures.

4.1 Potential, resource condition, level of management and utilization and the market situation

4.1.1 The Potential of the Resource and Constraints Impeding Its Actualization

The very high potential of bamboo lies on the very fast rate of biomass accumulation over time by the living bamboo plants and the versatile use and high value of their biomass.

They are among the fastest growing plants. They attain full height and diameter within 3 to 4 months, once the rhizome and root systems are well established. Fully developed bamboo forest could reach up to 8 to 12 leaf area index and absorb up to 95% of the incident solar radiation. These attributes of bamboo have far reaching economic and environmental significance, as the ultimate energy source of the earth (solar radiation) is a vital resource if used efficiently and a menace if not.

Most bamboo species are suitable agro-forestry plants. They do not adversely affect canopy trees and plants growing beneath them. They have very high soil holding capacity that could effectively control soil erosion. They considerably improve soil properties and allow fast water percolation. The lowland bamboo species in particular withstands high temperature and extremely severe dry spells.

Bamboo culm is a preferred material for various applications owing to its straightness, high strength, light weight, easiness of working with it using simple tools, suitable fibre for pulp and absence of bark. Bamboo shoot is of a high nutritional value that can be used as source of food and feed. It is being used for these purposes to a limited extent in the localities where it is naturally found, e.g., Metekel, Benishangul and Gumuz Regional State.

Bamboo could be used for about 1500 different purposes, as recorded in the literatures of the South Asia countries, e.g., China. Some of the uses are of very high economic profile, like bamboo pulp production, furniture, construction, various articles production and bamboo shoot harvest and processing for food.

Despite the very high potential value, Ethiopian bamboo forest management, expansion and utilization has been very low and slow. The reason forwarded by the discussants (interviewees) is mainly neglect by the government due to lack of knowledge and financial incentive to value, protect, manage and use it as a useful commodity. The lack of awareness has also been confounded with limited local market and very high transportation cost to relatively better markets in urban areas. Knowledge on bamboo is now increasing and markets are growing in Ethiopia and scarcity is pushing the value of bamboo upwards. This situation impels for all necessary arrangements to be in place in order to fully realise the potentials of the Ethiopian bamboo forests. These include the formulation of policies, strategies and laws; as well as prescriptions of enlightened and detailed approaches to bamboo forests development in view of resolving the bamboo related problems and demands of the various stakeholders.

4.1.2 The Extent of the Resource Base and its Condition

The Ethiopian bamboo resource was estimated to cover about one million ha by Luso Consult (1997), about 85% of which is lowland bamboo: *Oxytenanthera abyssinica*

(A. Richard) Munro and the remaining being highland bamboo: *Yushane alpina* K. Shmann Lin). There is no information about its present state.

According to the forestry conservation, development and utilization proclamation 94/1994 two types of forest ownerships are recognized: forests that belong to the government (Federal or Regional) and private forests. All the lowland natural forests legally belong to the government. There are also private highland bamboo forests but their exact area coverage is not known. The total private (plantation) bamboo forest might be wildly estimated to cover more than one hundred thousand of hectares. More than 14,000 ha private highland bamboo forest is reported by the SNNRS alone.

According to the observations made during the field visits to the various bamboo forests and the consensus of the various discussions, the private bamboo forests, which are all highland bamboos, are not degrading much despite being harvested mainly for own use and for sale in local markets. However, the government bamboo forests (natural forests of high- and low-land bamboos) are degrading and eventually disappearing fast, although there are no statistically sound sets of data available to substantiate this point of view. Many of the discussants reasoned out that the legal owner of the natural bamboo forests (the government) lacked economic incentive to value and prioritise them as useful commodities that require attention and planned action, as a result did not budget adequate finance to protect, manage and use them properly.

The bamboo forest situation of Mandura Woreda, Metekel Zone, Benishangul and Gumuz Regional State is a case in point. Most part of that Woreda was covered by very well stocked good quality lowland bamboo. Most of the lowland bamboo in that Woreda flowered and eventually died about a decade ago. Four spots of a quarter of a hectare each were fenced and protected from fire in order to observe the performance difference of natural bamboo forest regeneration in protected and unprotected conditions. Now, after a decade, bamboo can only be found in the protected spots and has totally disappeared from the rest of the area. The local inhabitants and the authorities of the wereda and zone bureaus of Agriculture and Rural Development indicated that the major driving forces for the disappearances of the natural bamboo forests are conversion to agricultural land and unsustainable cutting for sale (for house construction, for fencing and for local bamboo product production). Thus, natural flowering and eventual death predisposes the natural bamboo forest for conversion into farm land. Nevertheless, despite the rapidly decreasing situation there are still large areas of natural bamboo forests particularly in remote and inaccessible areas that can perpetuate and expand if supported with effectively implemented proper legal regime in order to maintain it in infinity and in optimally productive state.

It is apparently very high time to safeguard the continued existence, productivity and diversified use of these natural bamboo assets through the establishment of legally binding sustainable management and harvesting systems and promotion of value addition processes, treatments and marketing technologies and networks; in order to harness the potential of bamboo for poverty alleviation and for further advancing the socio-economic growth and development of the communities in the bamboo localities in particular and the country in general. This is the view of the various stakeholders communicated during the field visits. This situation has placed legal obligations on the federal and regional governments to initiate appropriate policies, strategies and other legal instruments as well as administrative institutions to effectively and efficiently develop, manage, expand and use the bamboo resources as a contribution to the overall policy of the government: economically, socially and environmentally sustainable national development.

4.1.3 Level of Management and Utilization

No management plan exists for the government owned natural bamboo forests. Consequently, there is no indication of any management practice exercised in these forests. No protection what so ever from illegal harvesting, wild fire, pests and diseases; no protection from encroachment and clear felling. No practical arrangements exist, even at planning stage, to this effect. So, the government owned natural bamboo forests are actually nobody's forests that have been suffering from the "tragedy of the commons".

There is a visible effort to manage and harvest the private (planted) high-land bamboo forests, as they are considered supplementary activities that produce useful commodities in perpetuity to complement the main stay of their livelihoods, which is food crop production and animal husbandry. However, the quality of management and harvesting is limited by the relatively low level of knowledge and skill they have on scientific management and processing of bamboo. Most of the private bamboo forest owners indicated that they never received any training on bamboo agronomy, management, harvesting and treatment despite the limited efforts apparently being made by the FEMSEDA and REMSEDA's. Their management practices are based on the knowledge transferred to them from their fathers and fore-fathers and common sense.

The level of bamboo utilization is likewise very low. They use very primitive hand tools made by themselves to harvest and process bamboo. No proper drying method and facility available and no treatment given after harvesting to ensure its post-harvest quality.

Bamboo culms are assorted by size to determine their sale price. Larger sizes are sold at higher prices. Culm age is not being considered for price determination. No other national grading system exists for bamboo produce and product grading.

Low quality bamboo products are produced either as supplementary activity to agricultural farming or as full-time employment by poor and land-less people. These people do the job based on the skill passed from their fathers, acquired through practice and sharing of skills among themselves; otherwise, they said that they never received training on bamboo processing and product design. Consequently the products they produce are similar in type, of very low quality and their production efficiency is very low.

The FEMSEDA and REMSEDA's are evidently giving very basic training on bamboo processing to very few unemployed people and farmers, although the impact is not yet widely felt. However, the out put of the trainees is still very low in terms of quality and quantity when compared with Southeast Asian products. They themselves (the FEMSEDA and REMSEDA trainers) are begging for advanced training on relatively improved basic technology and product design. They are now using by and large home-made hand-tools to train bamboo processing. The quality of the bamboo products produced during the training events are of low quality, but relatively better than those produced on road-side by the untrained poor and/or land-less farmers.

Almost all the bamboo product producers and traders consider their job as a transitory one, doing it while searching for a permanent job. They say that they do not get much from it to sustain their livelihoods. Lack of training and facilities on improved

technologies and linkages to market networks are considered as serious constraints for the development of bamboo processing as a rewarding job.

4.1.4 The Formal and Informal Market

Bamboo culms and products marketing systems are by and large informal. They simply display their products, mostly on road-sides, and interested buyers buy them. No product quality specification and grading system, no permit required and no tax paid for transactions within the locality. However, a lengthy process of permit application and payment of royalty fee is a must in some of the regions (e.g., SNNPRS) to take bamboo culms out of the Woreda. Most of the bamboo products producers said that this lengthy process has discouraged them from buying bamboo culms directly themselves from the growers. Moreover, the low quantity of culms per farmer available for sale at any given time necessitates dealings with many farmers, which is not efficient in terms of time utilization. For these reasons almost all processors and bamboo item producers are procuring culms outside their Woreda by buying them from traders. Most of the traders do not have adequate knowledge on the raw material quality and processing requirements. They simply buy and sell them based on number and size of culms.

5 The Legal Environment

The general policy of the government is to improve in perpetuity the overall wellbeing and security of the citizens by building a dynamic and vibrant economy through optimal and sustainable management and utilization of its natural resources. This is clearly and unequivocally indicated in many of the relevant policy statements, strategies, proclamations and legislations. The overall goal of the environmental policy of Ethiopia (1997) is stated to be “to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through sound management and efficient use of natural, human-made and cultural resources and the environment as a whole so as to meet the needs of the present generation with out comprising the ability of future generations to meet their own needs”.

A very similar statement is also found in the Biodiversity Policy of Ethiopia and in the Conservation Strategy of Ethiopia (CSE). The Federal Democratic Republic of Ethiopia has also declared “agriculture led industrialization strategy” and this strategy is guiding all development activities.

The Ethiopian Biodiversity Strategy and Action Plan (EBSAP) likewise underlines the prerequisite of conservation and sustainable utilization for poverty alleviation and further socio-economic development and environmental improvement.

The Ethiopian Forestry Action Program (EFAP) reaffirms the sustainable utilization principle to ensure continuing socio-economic growth and developments and identifies bamboo as one of the resources with the highest potential for creating employment, income generation, poverty alleviation and accelerating the pace of prosperity.

The Ethiopian Federal Democratic Republic strategy on industrial development has identified “export led industry” and “agriculture led industry” as the directions to be followed by the country in its socio-economic growth and development endeavours.

It is also indicated in these strategies that the private sector is the engine of agro-industry development. The strategy further outlines how the government, private sector and farmers should work together in an integrated and mutually supportive manner to bring about the desired overall socio-economic growth and development.

The Government of Ethiopia has also provided various proclamations (laws) to implement the central policy objective of renewable natural resource utilization on sustainable basis. However, legislations (regulations) that are more detailed implementing procedures and operational guidelines are still lacking for many of the proclamations. Most of them are not also accompanied with official strategic plan documents. The following are some of the proclamations that are relatively more relevant to bamboo development and utilization.

Forestry	Investment	Biodiversity	Environment
<ol style="list-style-type: none"> 1. Proclamation No. 94/1994: forestry development and utilization (28 March 1994) 2. Proclamation No. 456/2006: rural land administration and land use (15 July 2005) 3. Proclamation (draft): development, conservation and utilization of forests 	<ol style="list-style-type: none"> 1. Proclamation No. 280/2002: Investment (02 July 2002) 2. Proclamation No. 373/2003: investment amendment (28 October 2003) 3. Regulation No. 84/2003: regulation on investment incentives and investment areas reserved for domestic investors (07 February 2003) 	<ol style="list-style-type: none"> 1. Proclamation No. 120/1998: Institute of Biodiversity Conservation and Research establishment (25 July 1998) 2. Proclamation No. 381/2004: Institute of Biodiversity Conservation and Research amendment (13 January 2004) 3. Proclamation No. 482/2006: access to genetic resources and community knowledge (27 February 2006) 4. National Biodiversity Strategy and Action Plan (December 2005) 	<ol style="list-style-type: none"> 1. Proclamation No. 295/2002: environmental protection organs establishment (31 October 2002) 2. Proclamation no. 299/2002: environmental impact assessment (03 December 2002)

In the following paragraphs only the most important points to bamboo development, management, expansion, harvesting, processing and marketing are presented in abbreviated way.

5.1 Forests and rural land proclamations

5.1.1 Proclamation No. 94/1994: Forest Conservation, Development and Utilization (28 March 1994)

- Identifies government and private forest ownership
- Obliges all government forests to be used according to a management plan approved by the Ministry of Agriculture and Rural Development or the appropriate regional body
- Allows inhabitants to use products from government forests for their domestic needs, in accordance with the management plan, by paying appropriate fees
- Obliges the appropriate federal and regional government bodies to facilitate conditions and provide technical assistance towards the development of private forests
- Prohibits transport or storage of forests products without holding a certificate of origin and destination issued by the Ministry or the appropriate regional body
- Require prior consultation and approval by the Ministry or the appropriate regional body before large-scale farming, mining, dam construction and similar activities take place in a forest area. The investor is entitled for compensation if such activities take place in his/her legal holding.

5.1.2 Proclamation No. 456/2005: Rural Land Administration and Land Use (15 July 2005)

Allows peasant farmers/pastoralists engaged in agriculture for a living to hold land free of charge

Provide the right to use rural land for a living for any citizen of the country who is 18 years of age or above

Allow communal rural land holdings change to private as may be necessary

Provide the right to use land for private investors engaged in agricultural development activities

Allow for compensation of evicted rural land holder in proportion to the development he/she has made

Allow for an investor to present his/her use right as collateral

Allow the transfer of use-right by inheritance to a family member

5.1.3 Proclamation (draft, under review): Development, conservation and utilization of forests – policy and strategy

The forest proclamation no. 94/1994 was enacted before the approval of the constitution. The MOARD has consequently prepared a new draft forest proclamation as well as draft forest policy and strategy in light of the constitution. The following

are abbreviated extracts from the drafts of the most relevant points for bamboo development, management and utilization

Aim at forest resources development, conservation and utilization on sustainable basis to fulfil national requirements and to contribute to the economic growth of the country

Oblige the Ministry and the appropriate regional body to provide technical support to all engaged in managing, expanding and using their forest resources on sustainable basis

Allow land use-right for forest development purpose free of charge for indefinite time and land-tax exemptions until the forest on the land produces saleable products

Provide provisions for concession arrangements for the development, management and use of government forests by private and/or community based organizations

Provide use right security for private and/or community based organizations for their forests

Encourage private and community based organizations to produce quality forest products for local and international markets

Oblige for government forests to be managed primarily for protection or production objectives, as appropriate

Most of the regions do not have regional forest proclamation and the attendant proclamation implementation instruments. A few have started drafting. They are awaiting the approval of the draft forest proclamation of the Ministry of Agriculture and Rural Development, in order to produce their region specific proclamation in line with the federal one.

There are no bamboo specific proclamations and the attendant legislations and guidelines at federal and regional levels. Nevertheless, it is clear from the above proclamations that state and private forests are supposed to be managed and used on sustainable bases according to an approved management plan, and the Ministry of Agriculture and Rural Development or the Regions, as appropriate, are duty bound to motivate and render the necessary technical assistance towards that end. The draft policy and strategy as well as the draft proclamation have given even more importance than before to private and community forest development and utilization, and are creating more favourable and encouraging environment to these partners of development, management and utilization of the country's forests.

The Department of Forestry and Rural Land Administration of the MOARD has already prepared a guideline on concession arrangements and distributed it to the regions for implementation.

Thus a favourable legal environment that could provide a strong foundation for bamboo management, expansion and utilization at macro level does exist as per these documents. However, their interpretation into practice could be facilitated if detailed implementation procedures (legislations) and operational guidelines are developed. These are at present lacking or inadequate.

5.2 Investment Proclamations

5.2.1 Proclamation No. 280/2002: Investment (02 July 2002) as amended by proclamation No. 373/2003 (28 October 2003)

Directed towards the realization of sustainable economic and social development

Encourage the role of private sector in accelerating the country's economy

Promote joint venture investment

Promote export oriented investment

Provide investment incentives, e.g. exemptions from import taxes and custom duties

Allow for foreign investors to operate foreign currency accounts in authorized local banks

Allow remittance out of the country for any foreign investor

Safeguard against unlawful expropriation or nationalization of investments

5.2.2 Regulation No. 84/2003: regulation on investment incentives and investment areas reserved for domestic investors

Identifies investment activities eligible for income tax exemptions: manufacturing or agro-industry or production of agricultural products

★ That exports at least 50% the products: 5 to 7 years

★ That supplies 75% of the product to an exporter as a production input: 5 to 7 years

★ That export <50% of the product or supplies to domestic market: 2 years

★ That invest in the relatively under developed regions: one more year

Identifies investments eligible for customs duty exemptions

★ Allow for any investor to import duty-free capital goods and construction materials, including spare-parts, necessary for the establishment of a new enterprise or for the expansion or upgrading of an existing enterprise

The above basic incentive structures are all a

Enforce and ensure the implementation of biodiversity related legal instruments:
policies, strategies, proclamations, legislations

Provide directives on biodiversity conservation, sustainable utilization and access
to and sharing of benefits accruing from the utilization of accessed genetic
resources

Encourage and support private and community participation in the conservation,
development and use of biological resources

5.3.2 Proclamation No. 482/2006: access to genetic resources and community knowledge

Aim to conserve and use genetic resources and community knowledge on
sustainable basis for the benefit and development of national citizens

Affirm the requirement of permit granted by the Institute of Biodiversity
Conservation to access genetic resources of the country

Declare that the Institute may deny access to genetic resources if that may cause
loss of an essential ecosystem

5.3.3 National Biodiversity Strategy and Action Plan (December 2005)

Aim to reconcile the maintenance and expansion of biodiversity with the need of
the people and their activities

Advocate for the use of direct and indirect incentives to promote desired practices
and behaviour and disincentives to discourage unsustainable practices and uses

Promote the integration of sustainable use in all development programs and
projects

The bamboo resources of Ethiopia cover wide area and the genetic diversity within the
two indigenous bamboo species of Ethiopia is not yet known. It is, therefore, prudent for
enterprises engaged in bamboo development and utilization to consider bamboo genetic
resource conservation in particular and the ecosystem in which they are found in general.
The Institute of Biodiversity Conservation has statutory right and obligation to ensure that.
A legal procedure to this effect should be in place by which formal approval should be
obtained from the Institute.

5.4 Environment Proclamations

5.4.1 Proclamation No. 295/2002: Environmental Protection Organs establishment (31 March 2002)

- Aim at fostering social and economic development in a manner that enhances the
welfare of humans and the safety of the environment
- Obliges the Environmental Protection Authority (EPA) to prepare directives to
implement environmental protection laws and ensure their implementation

- Obliges EPA to provide advice and support to regions regarding the management and protection of the environment

5.4.2 Proclamation No. 299/2002: Environmental Impact Assessment (03 December 2002)

- Aim to predict and manage environmental effects
- Ensure sustainable development and environmental safety
- Prohibits implementation of any project likely to have negative impact on the environment without the approval of the authority
- Provide provision for incentive for projects destined to rehabilitate degraded environments

Bamboo development, management and sustainable utilization are environmentally friendly activities that are likely to impact the environment positively if carried out properly in accordance with the requirements for perpetual regeneration and ecosystem maintenance. Therefore, the proclamations do not hinder bamboo development and use. However, harvesting by clear felling of large bamboo forest may adversely impact the environment by destroying the regenerative potential of the bamboo forest. Conversion of large natural bamboo forests into other land uses may have also a negative impact on the ecosystem and environment. These facts and their remedial measures need to be made explicit in the implementation instruments of the proclamations: legislations, directives and operational guidelines (which are now lacking) should be put as conditions for bamboo forest utilization in perpetuity for economic and environmental reasons.

5.5 The disparities between the intentions of the proclamations and the reality on the ground

Proclamation	Proclamations Intentions	Reality on the ground
1. Proclamation No. 94/1994: forestry development and utilization (28 March 1994)	1. Provision of technical support 2. Develop and use based on management plan 3. Prohibits transport or storage of forest products without legal permit 4. Concession arrangements for development and use of government forests 5. Encourage private and community to produce quality forest products 6. Oblige government forests to be managed for protection or production functions	1. No adequate support for bamboo 2. No management plan available for the bamboo forests 3. Not practiced in most regions 4. Preparatory work done on procedures for concession arrangements. Made so far with few investors only
2. Proclamation No. 456/2006: rural land administration and land use (15 July 2005)	1. Land use right for all citizens of 18 years or older 2. Provide land use right for production forest development	
3. Proclamation no. 280/2002 (investment), no. 373/2003 (investment amendment) and Regulation no. 84/2003 (investment	1. Promote joint venture investment on forest development and utilization	

<p>incentive ...)</p> <p>4. Proclamation no. 120/1998 as amended by proclamation no. 381/2004 (biodiversity) and National Biodiversity Strategy</p> <p>5. Proclamation no. 295/2002 (environment)</p>	<p>1. Promote the integration of biodiversity conservation in all development programs</p> <p>1. Ensures sustainable development and environmental safety</p>	<p>1. There are no convincing sets of evidence that show serious consideration of biodiversity conservation issues in most development programs</p> <p>1. Not fully effective: monitoring and evaluation after the start of projects/programs is poor</p>
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5.6 Support and Incentive Structures

No formal support and incentive structure specific to bamboo production, processing and marketing exists at federal or regional levels, except the very few short-term trainings given per year by FEMSEDA and REMSEDA, and the incentives provided by the Investment Authority for investors engaged in agricultural production and agro-industry.

The growing scarcity of bamboo is pushing prices upwards, creating an incentive for farmers to expand and better manage their private bamboo forests and to establish new plantations. The increasing price pattern could be maintained through expansion and creation of markets when the scarcity fades away through improved supply. Lack of knowledge on effective propagation of the Ethiopian bamboos is limiting the scale and speed of bamboo plantation expansion. Off-set planting is the commonly and widely used method of local bamboo propagation. However, this method of propagation is rather discouraging farmers from expanding their bamboo plantations away from the source of the off-set as it is very heavy and most of the time impossible to transport them long distances in large quantities.

Seeds of the Ethiopian bamboo, particularly the highland one, are rarely found as they flower once in their life time and, therefore, very difficult to procure. Propagation of the Ethiopian bamboo species by cuttings is difficult at the present level of knowledge. Research support is highly needed on bamboo propagation and management, including bamboo harvesting to make investment on bamboo more manageable and attractive venture.

A well designed and meticulously implemented support system to upgrade the skills and knowledge of bamboo growers and product producers on bamboo agronomy requirements, produce treatment, product processing, design and marketing could further motivate all actors to do more and better

Market linkage and networking and information exchange service could serve as a fundamental incentive for the growth and development of bamboo production to consumption systems.

Other incentives like availability of finance, on loan basis, through micro-finance systems to establish bamboo-based businesses and to improve and expand existing ones could boost the economic profile of the resource and its socio-economic utility.

5.7 SWOT Analysis of the bamboo resources of Ethiopia and their legal environment

The bamboo sector of Ethiopia must be adequately developed to make visible and meaningful contribution to the economy of the country. Analysis of the present situation shows that there are many strengths and opportunities on which efforts could be based to make bamboo more productive, economically viable and dependable supporter of livelihoods. In the reverse side, there are worrying weaknesses and threats that need to be addressed to pave the way for accelerated development and sustainable utilization.

	Strength, Opportunity	Weaknesses, Threats
The resource	<ul style="list-style-type: none"> • Very large area mostly with good stocking • High potential use • Growing awareness on resource potential • Growing demand and prices • Increasing bamboo-based enterprises • Availability of bamboo processing training centres • Growing markets • The potentials of bamboo could be realised 	<ul style="list-style-type: none"> • Lack of updated information on resource location, condition and extent • Resource apparently degrading and disappearing fast • Mainly limited to subsistence production for local use • Many of them are flowering and no arrangement is made to use them, and to protect their progeny • Lack effective protection and management • Detrimental harvesting • Low capacity • Poor market structure • Poor infrastructure
Legal Environment	<ul style="list-style-type: none"> • Favourable macro policy for renewable natural resources development and use • Growing awareness by the government on the actual and potential value of bamboo • Bamboo is indicated in the various government documents as one of the most valuable non-timber 	<ul style="list-style-type: none"> • Inadequacy of the existing policies to address bamboo specific problems and issues • Absence of implementing instruments for the existing policies • Limited knowledge on the bamboo resource and its potential by the law professionals in the

	resources to be developed and used	government system
Capacity	<ul style="list-style-type: none"> • Availability of traditional knowledge on bamboo growing, management and utilization • Excessive labour availability in farming systems 	<ul style="list-style-type: none"> • Very limited scientific knowledge and skill on bamboo growing, management and processing • Rudimentary technology • Poorly made and finished cheap products • No medium and large scale industries
Market	<ul style="list-style-type: none"> • Growing • Large industries starting up that could push the demand upwards 	<ul style="list-style-type: none"> • Informal • Poor market information exchange • Poor infrastructure • Relatively low price
Tenure arrangement	<ul style="list-style-type: none"> • Land use arrangement exists • Land holding certification system is being implemented • Private land with holding certificate could be transferred to another owner • Transfer of government land to private is allowed 	<ul style="list-style-type: none"> • The existing tenure arrangement requires more clarifications and guidelines • More explicit guidelines are required for transfer of government land to private holding • No instruments are in place to regulate illegal transfer of land from government to private
Incentives	<ul style="list-style-type: none"> • Incentive provisions are available for investors • Better productivity is encouraged in private holdings 	<ul style="list-style-type: none"> • No specific incentives for private bamboo development • Lack of suitable land is acting as a disincentive for private bamboo forest expansion by farmers • No adequate support mechanisms • Lengthy and bureaucratic procurement process

6. Policy and Strategy Recommendations: Paving the Way Ahead

The Ethiopian bamboo conservation, development and utilization vision and mission should be accomplished based on a thoroughly thought-out policy and strategy that provide incentives for the protection and use of the available natural and plantation bamboo forests on a sustainable basis, and for the establishment and expansion of bamboo plantations where they could play essential production and protection functions.

Incentives

- Market
- Loan
- Training
- Concessions

Enabling Institutions

- Policies, strategies
- Proclamations, legislations, Guidelines
- Tenure arrangements
- Facilitating bodies

directly restrict the development and utilization of bamboo resources in Ethiopia. Concrete actions towards the realization of policy objectives have been, however, inadequate when seen in light of the fast deteriorating situation of the bamboo resource in Ethiopia. All legal arrangements can only bear fruit if effectively implemented. The major problem lies not entirely on the inadequacy of the proclamations but on their poor implementation or total lack of it. Concrete steps should be taken to drastically improve the implementation of the existing laws and procedures.

A clear understanding of the bamboo resources (location, extent, condition, potential and the environment that conditioned its status) should form the foundation for policy formulation. This study has provided basic indicators on most of the information aspects needed for policy formulation. Policy objectives could be decided based on these understandings. The policy will then set the framework in which all bamboo related activities in the country must follow as a general direction.

Federal policies are reference documents for the regional states when formulating region specific policies that are in agreement with the federal policy, but more detailed and more close to the realities on the ground. Unavailability of policies, strategies, proclamations and the attendant implementing instruments is hindering the development of such legal frameworks at regional level. The Ministry of Agriculture and Rural Development should expedite its endeavours in this regard.

It might not be necessary to proclaim a separate bamboo policy at national level as far as the bamboo policy considerations are fully addressed in the draft forest policy under review. However, regions with rich natural bamboo forests should be encouraged to formulate region specific bamboo policies as deemed appropriate based on the above suggested policy provisions. The following policy items are suggested.

- Â To transform bamboo from a potential resource into a highly demanded commodity
- Â To manage, expand and use bamboo on sustainable bases by taking full advantage of the vast availability, fast growth and versatile use of bamboo in Ethiopia to offset the growing pressure on timber forests for household and industrial uses.
- Â To generate continuous and growing income and employment through incremental value addition by promoting small-, medium and large-scale bamboo-based appropriate enterprises
- Â To fully harness the very high soil, water and biodiversity conservation potential of bamboo forests by managing and expanding them in areas where they are naturally found and by growing them in appropriate ecosystems where their function is a priority agenda
- Â To promote and facilitate bamboo shoots production for food and feed for local and international markets
- Â To foster the commercialization of the bamboo production-to-consumption system by creating favourable conditions for functional bamboo markets (local and international), and a secure tenure system for sufficiently long period of time
- Â To support integrated development of bamboo production, processing and marketing systems through appropriate incentive structures and the establishment of a responsible unit to that effect
- Â To foster the integrated roles of government, private sector and farmers in mutually supporting and re-enforcing manner for bamboo resource development, expansion, processing, distribution and marketing in an efficient and effective way.
- Â To fully and adequately address bamboo specific problems through legal and administrative means.
- Â To promote integration of various products production processes and systems in order to optimize profit and raw material utilization efficiency

6.2 Strategy

Strategies are directions for courses of actions to realise policy objectives. They must be implement-able within the governing objective realities that conditioned the status of the Ethiopian bamboo resources. They should help change the situation from the present neglected and degraded state into a properly managed, value added commodity that sustain an ever expanding and increasing enterprises through a well-functioning marketing system. The strategy should help change the bamboo of Ethiopia from a potential resource into a highly demanded actual commodity by industries and other users; and whose supply is ensured through proper management, expansion and sustainable harvesting. It must focus on the resource owners (farmers), resource users (individuals, small-, medium- and large-scale industries) and the marketing system that determine their relationships. The role of the government as the facilitator of the bamboo production to consumption system through various incentives and administration procedures should be clearly mapped out in the strategy.

Bamboo resources in Ethiopia have a potential to play vital role in the country's economy and to the improvement of the livelihoods of communities in and around the bamboo resources. This strategy aims at enhancing the socio-economic contribution of bamboo resources through promotion of bamboo management and utilization mainly for bamboo-based industries at various levels, which perpetuates an ever increasing income and employment generation while at the same time improve the environment and the services provided by it.

The following strategic items are suggested.

Å The natural bamboo forests which legally belong to the government are being destroyed and converted into agricultural land despite the bamboo price increase trend mainly for two reasons. 1. Growing landless populations that desperately look for private land to support their livelihoods. 2. Lack of government capacity to adequately protect the natural bamboo forests in the most amicable way. Safeguarding the resource base from further destruction and conversion into farm and grazing land should be, therefore, in the forefront of further expansion, management and utilization strategy. This issue is the worry and concern of almost all growers, traders, processors, users and investors who participated in the study. At present most of the natural bamboo forests are not even included in the priority natural forest areas identified to be legally protected. Access to the natural forests and activities detrimental to their very existence is not regulated.

Preparation or amendment of relevant proclamation, legislation and guideline in order to create or strengthen legal instruments that help to adequately protect, manage and use the remaining natural bamboo forests in the most amenable and scientifically appropriate way should be one of the strategic items to ensure their continued existence and perpetual value. This will include revisit of the existing ownership and use-right arrangements for the natural bamboo forests.

Å Protection with out utilization would be a futile exercise particularly in the Ethiopian context, where unemployment is high and growing, poverty is serious and widespread and livelihood security is the preoccupation of the fast growing population. Therefore, favourable conditions should be created for optimum and sustainable utilization.

Management plan preparation for each of the remnant natural bamboo forests to ensure maximum possible utilization without adversely affecting its integrity and perpetuity through best development and harvesting practices should be another strategic item. This undertaking will require resources to accomplish the work, but it is a worthwhile prerequisite task that

could and should be accomplished. Resources need to be allocated by the government to this effect.

Â There is an overwhelming consensus of the stakeholders who participated in this study on the need to uplift the steadily moving private bamboo forest expansion to the level of commercial significance at local and international markets.

Various support mechanism arrangements for private bamboo plantation expansion and proper management like advisory service, financial credit possibilities, seedling supply, market information exchange and land-use right provisions for bamboo growing on suitable sites with perceivable comparative advantages; and incentives like tax exemptions, promotion of bamboo based enterprises, trainings

Private bamboo forests are steadily growing, and have the potential to grow further and faster. One of the determinant factors holding back their expansion to their potential limit is “inadequate knowledge and skill on bamboo propagation, management, harvesting and processing”. Bamboo seeds are available only when bamboo flowers at the end of its life time. Therefore propagation of the Ethiopian bamboo using seeds is a rare opportunity that comes every 50 to 60 years to each bamboo forest area in a given locality. Propagation using cuttings has never been successful even at research level. In this situation, the only practically possible method is off-set planting to expand or establish new bamboo plantations. This method is too heavy for establishing bamboo plantations away from the off-set source.

Likewise, in absence of training the farmers are managing their bamboo plantations using traditional knowledge. Bamboo processing in Ethiopia is rudimentary, done using locally made hand tools. Arrangements should be made in setting out these problems as research agenda to be considerably solved through research and development systems.

Quality design and processing are key elements for marketing. FEMSEDA and REMSEDA should be strengthened further in terms of facilities and knowledge and skill to be able to provide adequate and meaningful training on essential technical knowledge needed for bamboo processing and product design

Thus, capacity building of growers and processors through training and improved technology adoption and adaptability is recommended as a viable strategy item.

Market is the driving force for resource development and use and the spill over effect of them. Exploration and creation of local, regional, national and international markets for bamboo and bamboo products should be vigorously pursued.

Strengthening the Marketing and Inputs sector of the MOARD to capacitate it to successfully play this role, in collaboration with the relevant regional and lower government bodies and NGOs, and the Ethiopian embassies in the various countries is the recommended strategy to address this issue.

The strategies should indicate ways of using the opportunities being created by the increasing globalization and the expanding free trade agreements as an avenue for international marketing

Bamboo forests do not lend themselves to clear-felling. Therefore, harvesting through clear-felling has to be prohibited.

Public awareness rising on the adverse effects of bamboo clear-felling, legal prohibition of bamboo harvesting by clear-felling and effective monitoring arrangements to check clear-felling are the recommended strategy items.

Conversion of bamboo forests into agricultural lands after they have naturally flowered and died is a major problem detrimental to their existence.

Legal prohibition of conversion to agriculture after bamboo forest flowering and death and effective monitoring by the respective Wereda Bureau of Agriculture and Rural Development in collaboration with the relevant communities is the recommended strategy.

Bamboo culm sale is now by size and number and does not take account of bamboo quality. Consequently, processing and bamboo item production wastage is high.

A grading system and standard specifications establishment strategy is recommended to match quality with end-use requirements. This will encourage quality culm production and reduce wastage.

Â Bamboo production and processing is still at subsistence level, mainly for production of cheap items for local consumption. This has to be upgraded to a commercial level.

Establishment of cooperatives at bamboo growers, processors and traders levels in all bamboo areas and vertically integrated up to the national level is the recommended strategy to help boost commercialization by pooling and coordinating efforts of all stakeholders

Â Policies, strategies and proclamations are as effective as their extent of implementation. Indicators that could show level and extent of implementation should be developed to monitor and periodically evaluate progress towards the achievements of policy objectives. The indicators should relate to efficient resource management and harvesting, sustainability of resource use, rate of resource expansion, capacity building for resource management, processing, marketing and utilization, sharing of responsibilities and benefits in resource development and utilization and the coupling of resource development and use, socio-economic growth and development and environmental improvement.

Â Establishment of an effective institution with a mandate focused on overseeing, facilitating and supporting bamboo development, management, processing and marketing activities is crucial. Its appropriate structure and capacity required for its fully fledged functioning has to be studied and fulfilled.

Information exchange: collection of relevant information sets coming from various analysis and research bodies and making it available to producers, processors, traders, policy makers and other users should be one of its principal duties. Periodic information review, updating and dissemination on bamboo resource availability and marketing through appropriate approaches could also be among its duties. Coordinating and facilitating training and research on bamboo growing, managing, processing and marketing is still another one.

6.3 Take-off activities recommended to over-come the bamboo development and utilization inertia, implementing institutions and indicative budget

The following measures are recommended as stepping-stone activities that should be carried out simultaneously while pursuing the formation processes of clear vision, policy, strategy and other legal instruments (proclamations, legislations and guidelines) to optimally harness the potential of the Ethiopian bamboo forests to the fullest possible. Almost all the activities suggested below are out of the scope of the project and should be considered as complementary to the project that should be financed outside the project. The budget estimates are wild guesses and should be revised to realistic level by the concerned professionals

Activity	Implementing Institution	Indicative budget estimate	Objective	Remark
Resource Inventory	Dept. Forestry and Land Use Administration, MOARD	250,000 USD	To assess the current location, extent and status of the remnant natural bamboo forests of Ethiopia, using remote sensing data reinforced by confirmation-spot assessments on the ground	This activity is out of the scope of the project. The budget for its implementation has to be found from elsewhere
Bamboo Diversity Conservation	Institute of Biodiversity Conservation	150,000 USD	For <i>in situ</i> and <i>ex situ</i> (bamboo gardens) conservation of the variations within the two Ethiopian bamboo species	The Institute should develop a project that could be financed by donor agencies such as GEF, EU etc
Research on the Ethiopian bamboo growth, management, processing, utilization and marketing problems	IEAR and others	350,000 USD		This could be financed and administered by the Science and Technology Agency as part of its local grant system
Establishment of bamboo growers, processors, traders cooperatives	Cooperative Agency, MOARD			This could be incorporated in their regular program
Bamboo cultivation, management, treatment and processing trainings	FEMSEDA, REMSEDAs and TVTs		For human resource capacity building by strengthening capacitating the existing training centres	This is being implemented by the project
Loan arrangement for bamboo establishment and expansion activities based on an approved plan	Micro-finance Institutions	500,000 USD		The finance for this implementation has to be found outside of the project; and should be administered in collaboration with the

				regional Bureaus of Agriculture and Rural Development
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There are also crucial activities to the project that should be carried out by the Department of Forest and Land Administration of the MOARD or the pertinent regional institutions as part and parcel of their regular program. These are:

1. Revising the draft forest policy and strategy as well as the draft forest proclamation to address bamboo specific issues and concerns
2. Preparations of bamboo cultivation and management packages. Attempts on this endeavour do exist. They need to be updated and distributed to all regions and bamboo growing localities
3. Sensitising and advocating for regional bamboo specific policy for bamboo rich regions and provision of technical support to that effect
4. Public awareness creation on bamboo uses at all levels and using all possible means
5. Acquisition and dissemination of appropriate bamboo technology to bamboo cultivation, processing and utilization localities

7. Conclusion

Ethiopia still has the largest bamboo forest in Africa that could and should meaningfully contribute to the socio-economic development of the country. Most of the ecosystems of Ethiopia are also favourable for bamboo expansion through planting.

The bamboos of Ethiopia could only be conserved and developed if valued as useful crops that satisfy basic livelihood requirements and that contribute for furthering socio-economic advancement. A protracted action guided by well thought out strategy is required to promote bamboo as a commercial commodity that should be conserved, expanded, managed, and used in various forms by necessity: to underpin local livelihoods, further socio-economy at all levels and to improve the environment.

The bamboo strategy should focus more sharply on correcting the factors that have forced the bamboo situation to the present undesired state, and on generation, adoption and adaptation of appropriate technologies that help accelerate the development and utilization of bamboo. Technologies to properly conserve, expand, manage, process, market and utilize bamboo should be made available and hands on training should be given on their proper use. The capacity of FEMSEDA and REMSEDA's should be strengthened, and more bamboo training centres should be established particularly in the bamboo rich regions.

Public awareness and Improvement of ownership/use rights are equally important. Private investors are the engine of natural resources development, expansion and utilisation and favourable conditions and support systems should be created for them to adequately play their role.

The government should also organize and prepare itself, and also upgrade its capacity, to adequately play its facilitator and supporter role in the resource production-to-consumption chain.

The overall condition is now ripe enough to take the necessary steps in the right direction and at the fastest possible rate. Quick measures should be taken by the government to see the full and effective implementation of the existing relevant legal arrangements.

The identified bamboo policies and strategies might not be necessary to proclaim them as separate decrees at national level. However, the draft forest policy and strategy currently under review has to be revisited to ensure the full accommodation of the identified bamboo specific policy and strategy issues at national level. Regions with rich bamboo resources are, however, recommended to prepare bamboo specific policies, strategies and proclamations, as is the case in the P. R. China.

The springboard activities suggested to break the inertia of bamboo development and management should be implemented in the most effective and efficient way.

Appendix 1: List of reference documents (not in alphabetical order)

1. Boa, E. R. 1997. Bamboo Management in Ethiopia, CAB International
2. Council of Ministers Regulations No. 179/1994: Natural Gum Processing and Marketing Enterprise Establishment
3. Council of Ministers Regulations No. 84/2003: Investment Incentives
4. Dept. of Land Administration and Forest Protection and Utilization (undated). Ten Year National Forestry Development Program, MOARD, Addis Ababa, Ethiopia.
5. Embaye, K. 2003. Ecological aspects and resource management of bamboo forests in Ethiopia, PhD Thesis, Acta Universitatis Agriculturae Sueciae Silvestria 273, Swedish University of Agricultural Sciences, Uppsala, Sweden
6. Environmental Protection Authority (EPA), 1997. Environmental Policy of the Federal Democratic Republic of Ethiopia, EPA, Addis Ababa, Ethiopia
7. Farm Africa and SOS Sahel, 2004a. Commercializing Bamboo, Reeds & Palm in Bonga, SNNPRS, Ethiopia, Agribusiness, Addis Ababa, Ethiopia
8. Farm Africa and SOS Sahel, 2004b. Transforming Lives and Landscapes: Linking Agroforestry and NTFP Farmers to the Market, Agribusiness, Addis Ababa, Ethiopia
9. Forestry Conservation, Development and Utilization Proclamation No. 94/1994
10. Forestry Development, Protection and Utilization (Amendment) Proclamation (Draft)
11. UNIDO, 2006a. Market Based Development with Bamboo in Eastern Africa— Employment and Income Generation for Poverty Alleviation, UNIDO Field Study Report (Part One and Two) for the Eastern Africa Bamboo Project.
12. IBC, 2005. National Biodiversity and Action Plan, IBC, Addis Ababa, Ethiopia
13. Investment Proclamation No. 280/2002
14. Investment (Amendment) Proclamation No. 373/2003
15. Kelbesa, E., Gebrehiwot, A. and Hadera, G. 2000. A Socio-economic Case Study of the Bamboo Sector in Ethiopia: Analysis of the Production-to-Consumption System, <http://www.inbar.int-Ethan> Frome (02/02/2006).
16. UNIDO, 2006b. Market Based Development with Bamboo in Eastern Africa— Employment and Income Generation for Poverty Alleviation, UNIDO Study Report (Part One and Two) for the Eastern African Bamboo Project.
17. Ministry of Agriculture and Rural Development (MOARD) (2005). Forest Development, Protection and Utilization Policy and Strategy (Draft Document), Natural Resources Sector, MOARD, Addis Ababa, Ethiopia
18. Ministry of Natural Resources Development and Environmental Protection, 1994. Ethiopian Forestry Action Plan (EFAP), EFAP Secretariat, Addis Ababa, Ethiopia
19. Ministry of Press and Information (2002a), Rural Development Policies, Strategies and Approaches of the Democratic Republic of Ethiopia, Press and Audio Visual Department of the Ministry of Press and Information, Addis Ababa, Ethiopia.
20. Ministry of Press and Information (2002b), Industry Development Strategy of the Democratic Republic of Ethiopia, Press and Audio Visual Department of the Ministry of Press and Information, Addis Ababa, Ethiopia.

Appendix 2: TOR



United nations Industrial Development Organization

JOB DESCRIPTION National Consultant 17-57

Project title: Eastern Africa Bamboo Project
Project number: FC/RAF/05/010
Post title: Forest - Economist /Forest Policy and law

Duration: 1 w/m
Date required: 02 October 2006
Duty station: Ethiopia, with rural travel
Counterpart: MOARD

Duties:

Under the supervision of the UNIDO-HQ Project Manager and in close cooperation with the UNIDO Field Office and the National Project Coordinator (NPC) within MOARD, the NC will contribute to conduct an analysis of the forestry and other relevant laws in order to develop bamboo development strategy for sustainable management and industrial development. He will be working in a team with an international consultant (IC).

In particular he will:

No.	Activity	Dur a- tion	Location	Expected Results
	- Support the work of IC on the preparation of Bamboo Development Strategy	-	-	-
1	- Prepare appropriate data gathering methodologies, proposals etc. that helps to conduct the study with the IC.	5	Addis Ababa	<ul style="list-style-type: none"> • Present the work plan and study layout • Prepare structured interviews and questionnaires • Relevant background data available • Meeting with stakeholders etc arranged
2	- Assess the current policy environment for forestry, (foreign) investment and economic development.	2 4	Addis Ababa Elsewhere	<ul style="list-style-type: none"> • From the bamboo perspective: A critical analysis of current laws and legislations /SWOT of policy environment for bamboo related economic development/ • Recommend the most appropriate implementation approaches under the recommended bamboo development strategies.
3	Study concession systems and user rights of the community based forest management options that could be incorporated within the new bill and/or policy	4 3	Addis Ababa Elsewhere	<ul style="list-style-type: none"> • Jointly with IC – Bamboo Resources present suitable concession system options for bamboo resource management for large-scale private sector and community based management for small scale cottage industries • Strategies should be developed for rational resource management and utilization to minimize

				the present pressure on bamboo resources.
4	- Review other related Government Policy statements that could be used to fortify a case for bamboo development strategy - Develop policy recommendations	4	Addis Ababa	<ul style="list-style-type: none"> Recommend a policy environment that would ensure sustainable resource management and industrial development based on, among others, activities 1 - 4. Develop appropriate policies to use bamboo resource, particularly in bamboo potential areas for its sustainable development.
5	Consolidate the components and recommendations of a bamboo industry development strategy.	2	Addis Ababa	<ul style="list-style-type: none"> Draft components for a bamboo industry development strategy verified with the stakeholders Present the findings of activities 1 - 4 in the RPSC meeting in January 2007.
6	Conduct a half-day workshop with relevant stakeholders (GOE, the private sector and beneficiary representatives)	1	Addis Ababa	<ul style="list-style-type: none"> Present a case for long-term national (policy) strategy for the development of the bamboo sector to be implemented by the Government
7	Prepare final report	5	Home	<ul style="list-style-type: none"> Present the final report according to the UNIDO format
8	Any other related assignment as may be detailed by the NPC and/or Project Manager			

Appendix 3: Discussion Guiding Key Issues or Foci of Questions

Institutions	Issues/Key Questions	Remarks
MOARD (Federal & Regional)	<ul style="list-style-type: none"> • Resource • Role • Information exchange system • Trading systems • Laws, legislations, guidelines 	
FEMSEDA & REMSEDAs	<ul style="list-style-type: none"> • Activities • Relations with investors • Harvesting & management • Connection b/n research & training 	
Growers	<ul style="list-style-type: none"> • Knowledge on bamboo management • Treatment and processing skills • Harvesting method • Market • Taxes and other payments • Training and other incentives 	
Processors	<ul style="list-style-type: none"> • Bamboo forest locations and status • Bamboo procurement processes • Bamboo processing facilities & skills • Marketing and profitability • Training and other incentives 	
Traders	<ul style="list-style-type: none"> • Bamboo resource knowledge • Trading processes & procedures • Marketing and profitability • Payment of taxes & other payments 	
Investors	<ul style="list-style-type: none"> • Reason for investment on bamboo • Scale of investment • Socio-economic contribution • Tax and other incentives • Program & activities under way • Future vision 	

Appendix 4: Institutions that participated in the study

Institution/project	Represented Person	Remark
The Eastern Africa Bamboo Project	<ul style="list-style-type: none"> • Dr. Eric R Boa, International Consultant • Ato Melaku Tadesse, NPC of Eastern Africa Bamboo Project 	
MOARD, Natural resources sector (Federal)	<ul style="list-style-type: none"> • Ato Amare worku, Head, Dept. of Forestry, Land Use and Soil Conservation • Ato Leykun Birhanu, Advisor to the State Minister and Forestry Team Leader 	
MOARD (Federal), Dept. of Legal Affairs	<ul style="list-style-type: none"> • Ato Natan Balcha, Dept. Head 	
MOARD (Federal), Marketing and Agricultural Inputs Sector	<ul style="list-style-type: none"> • Ato Bekele Teklu, State Minister Assistant • Ato Gebrekidan Teklu, Forest Products Marketing Team Leader 	
FEMSEDA	<ul style="list-style-type: none"> • Ato Girma Diriba, Bamboo Management Centre Head 	
FPURC	<ul style="list-style-type: none"> • Dr. Seyoum Kelemework, Senior Researcher 	
FRC	<ul style="list-style-type: none"> • Ato Tesfaye Hundie, Senior Researcher 	
Federal Investment Agency	<ul style="list-style-type: none"> • Ato Mohammed Seid, Director of the Research and Planning Dept. 	
IBC	<ul style="list-style-type: none"> • Dr. Girma Balcha, Director General 	
Farm Africa (A.A)	<ul style="list-style-type: none"> • Mr. Ben , Expert of Participatory Forest Management 	
MOARD, Metekel Zone, Benishangul & Gumuz Regional State	<ul style="list-style-type: none"> • Ato Ejeta Worku, Acting Deputy Administrator of the Zone • Ato Takele Admasu, Agriculture and Rural Development Desk Head of the Zone • Ato Matewos Bekele, Natural Resources Conservation and Development Team Leader of Mandura Wereda • Ato Asefa Abate, Development Agent of the Mandura Woreda 	
MOARD, Amhara Regional State	<ul style="list-style-type: none"> • Ato Woreta Abera, Dept. Head of Forestry & Agroforestry Protection and Development • Ato Mulu Gebeyehu, Forest Protection and Development Expert • Ato Feleke Tesma, Natural Gum Incense Production and Handling Expert • Ato Minda Teshome, Agroforestry Expert • Ato Bayleyegn Azene, Agricultural Expert 	

MOARD, Oromiya Regional State	<ul style="list-style-type: none"> • Ato Dribu Jemal, Rural Land and Natural Resources Administration Sector Head • Ato Birhanu Edeta, Forest Management Plan Expert 	
REMSEDA (Amhara Regional State)	<ul style="list-style-type: none"> • Ato Shuromu Haile, Expert • Ato Wubetu Fantahun, Bamboo Processing Expert 	
MOARD, Awi Zone, Banja Shikudad Woreda	<ul style="list-style-type: none"> • Ato Abebe Kebede, Land Use Administration Expert 	
Amhara Region Investment Bureau	<ul style="list-style-type: none"> • W/ro Enanu Kassahun, Investment Plan Information Organization Advisory Team Leader 	
Bamboo grower in Amhara Region, Awi Zone, Enjibar Town	<ul style="list-style-type: none"> • Ato Ababaw Wondamlak 	
Bamboo Trader in Amhara Region, Awi Zone, Enjibar town	<ul style="list-style-type: none"> • Ato Takele Bitew 	
MOARD, SNNPRS	<ul style="list-style-type: none"> • Ato Mamo Gedebo, Head of Natural Resources and Rural Land Administration Sector • Ato Bekele Haile, Dept. Head of Natural Resources Conservation and Development • Ato Tsegaye Fekadu, Forest Conservation and Development Expert 	
REMSEDA (SNNPRS)	<ul style="list-style-type: none"> • Ato Elias Ayalew, Acting Centre Head • Ato Shewa Wotango, Bamboo Processing Expert 	

Appendix 5: Salient issues brought up by the participants during the various discussion events

The approach used was information gathering through interactive discussions on selected important issues. The issues or guiding questions were presented for discussion and every participant gave his/her views, suggestions and comments on them. The points that the participants felt were very important and on which most of the participants built consensus are presented below.

MOARD, Federal

- We were made aware of the extent of area coverage, distribution, status and potential of the Ethiopian bamboo by the Luso Consult report (1997)
- No much has been accomplished since then to manage and use the Ethiopian bamboo at Federal level.
- Relevant regional bureaus were informed to take advantage of FEMSEDA and REMSEDA capacity to train on bamboo processing
- No bamboo specific policies, strategies, guidelines at federal level
- No bamboo specific proclamations, legislations
- No forest policy and strategy at federal level, a draft is awaiting approval
- The Ethiopian Rural Land Administration and Land Use proclamation (456/2005) provides provisions for private holding and use of rural land
- Any citizen of the country who is 19 years or above age and who wants to engage in agriculture for a living shall have the right to use rural land
- Private land holders who are given holding certificates can lease to other farmers or investors in a manner that shall not displace them.
- Government being the owner of rural land, communal land holdings can be changed to private holdings as may be necessary

MOARD (Federal): Marketing and Inputs Sector

- We promote industrial led utilization strategy
- Resource base: extent and potential is known from the Luso Consult survey report
- Limited attempts were made to explore international market for bamboo
- We popularized the resource and many investors showed great interest to invest on it
- One investor sent a truck load of bamboo to INBAR, China, for testing, but has not yet received answer from them. Nevertheless, he is, in the mean time, procuring bamboo processing tools from China through the Ethiopian Embassy in Beijing.
- Current and actual resource assessment is needed
- The Ethiopian bamboo variability study could boost the marketability of bamboo by identifying varieties best suited for specific purposes
- Study is also required on nutrient content of bamboo shoots in order to promote it as food commodity
- The extent and potential of the resource may justify for a special unit establishment to oversee its proper development and utilization

FEMSEDA

- No policy or strategy on bamboo
- We train on bamboo processing and we use bamboo culms from Masha and Hagereselam bamboo forests, both in the SNNPRS

- We give three types of trainings, (1) basic for 4 – 5 months, (2) up-grading for 1– 1½ months and (3) Training of Trainers for 15 days
- Bamboo procurement is a lengthy process. A request is written to the pertinent regional bureau and it writes a letter to the concerned zone and wereda for cooperation. We deal with middle-men to arrange us contact with the farmers from whom we could buy the bamboo. Finally the Wereda Agriculture Office gives us permit to take the procured bamboo out of the wereda, zone and region.
- No feed-back on the trainings provided so far
- No training is given on bamboo forest management by FEMSEDA
- Request for training is growing
- Formal linkages with REMSEDA is poor

Comments

The Centre should strengthen it self to adequately support investors

It should establish better linkages with national research institutions like WUARC and with international ones like INBAR

FEMSEDA and REMSEDA should improve their linkages and relationships in mutually supportive manner

WUARC

- Bamboo is of very high potential resource
- Not properly studied, particularly its treatment and processing requirements
- Bamboo is being harvested in a very destructive way and this has to be corrected
- Bamboo processing is rudimentary and lacks even the very basic appropriate technology
- Farmers have appropriate traditional knowledge on bamboo management, culm age identification and propagation which could be improved through training
- There are bamboo property variations within the lowland bamboo and also within the highland bamboo. More intensive study should identify the different varieties below the species level to facilitate species variety and end-use matching

FRC

- Farmers who are growing and using bamboo are doing their best, we should encourage and support them
- Optimum growth requirements of the Ethiopian bamboo should be studied, particularly propagation methods by seed, cuttings and other methods
- Possibilities for introducing species with proven potential should be explored
- Land ownership and/or tenure systems have to be studied
- Technical issues impeding bamboo management, expansion, harvesting and utilization have to be addressed

Federal Investment Agency

- There is no investment incentives specific to bamboo, but is covered in the investment incentives provided for agro-industry
- The Investment Proclamation 280/2002 as amended by Proclamation 373/2003 provides various investments for production of biological resources for export and local uses

- Investment permit process is very fast, could be obtained within few hours if all the requirements are fulfilled
- Once permit has been provided, concerned government bodies are notified to follow up its implementation as per the agreed plan
- Concerned government and non-government bodies could present their argument if they have a strong case against it before the final go ahead signal is given to the investor

IBC

- All biological resources production and development programs should consider biodiversity conservation
- IBC is mandated to oversee conservation, sustainable utilization and access and benefit sharing undertakings in the country
- In practice, the linkages between IBC and the Investment Permit providers is not as strong as it should be.
- Priority should be given to optimum sustainable utilization of a natural biological resource like a natural bamboo forest without adversely affecting its integrity
- Conservation, research, development, and utilization should go in conformity with each other and in reinforcing manner to ensure optimum benefit in perpetuity
- IBC has statutory right to comment on the sustainability of biological resources development and utilization

Farm Africa

- Biological resources are best managed and used by the communities living in and around that resource
- Participatory forest management ensures communities participation in the resource conservation, management, utilization and benefit sharing
- Large-scale investments could also involve local communities through share-holding mechanism. The government could buy the share and distribute it to the community in an equitable manner. In this way the local communities will feel owners of that investment and will do all they can to safeguard it. This system will also ensure that the investment contributes directly to the livelihood improvement of the **community**

MOARD, Metekel, Benishangul and Gumuz

- Our region has abundant bamboo resource, but no detail study conducted so far to know the location, extent and status of the resource
- We understand from observation that the resource is dwindling and disappearing very fast. For example, Bulen, Dibati, Wonbera, Mandura and Pawe wereda which were fully covered by lowland bamboo are now devoid of it.
- The natural bamboo forest is not protected, managed and utilized properly. It is a common resource with free access to all.
- The scarcity of bamboo is now pushing the prices up in the towns; it used to be sold at 0.10 Birr per culm a few years ago, it is now being sold at a minimum price of 0.70 Birr per culm (N.B. 1 USD = 8.67 Eth. Birr)
- The conversion of natural bamboo forest to farm land is accelerating very fast. The natural bamboo forest is now retreating to the exceptionally inaccessible areas
- No noticeable work has been done on bamboo utilization
- Area closure and seedling distribution are being implemented as solutions, but not effective so far

- Harvesting of bamboo for sale outside the wereda requires a licence and royalty payment but not for own consumption or sale within the wereda
- Illegal cuttings are controlled by community task force
- Local community shares 20% of the royalty

Comments

There is no a plant species that covers more area than bamboo in the region
Scarcity is increasing community awareness on the value of bamboo as could be understood from the response of many farmers

elaborated community participation through responsibility and benefit sharing mechanisms should be effectively designed and implemented to reverse the deteriorating trend

Management plans guided by well designed and far sighted strategies should be prepared and publicised to the communities for effective implementation

Current bamboo resource location, extent and status should be known in the shortest possible time as baseline information for further development and utilization plans

MOARD, Amhara

- Bamboo in our region is found in Gojam and Gonder, about 50,000 ha
- Our role has been very limited
- Lowland bamboo is disappearing fast but highland bamboo plantation is steadily expanding, mainly in farmers' land and in churches
- Plantation bamboo management and utilization is growing by its own, only driven mainly by the prevailing informal markets
- Natural bamboo forests are declining at fast rate, they are being converted to farm land and eucalyptus plantations
- We have started work to promote the conservation, development and utilization of bamboo through awareness raising and training
- No forest proclamation at regional state level
- Policy, legislation and guidelines on bamboo conservation, development and sustainable utilization should be prepared in the shortest possible time
- The resource currently available should be studied
- Technology on bamboo propagation, management, harvesting and processing should be made available through research and by adopting and adapting other countries experiences
- Marketing networks should be established and flow of market information should be facilitated
- Establishment of a unit that oversees and facilitates the proper management, harvesting, processing and marketing of bamboo might be required

MOARD, SNNPRS

- We already have information on the location, extent and status of bamboo in our region
- We have prepared a package draft for training farmers and other interested on bamboo processing
- We have legislation and guideline for non-timber forest products and bamboo is covered by those legal frameworks, which could be an input for future work
- In those legal frameworks, bamboo forests could be converted into other land uses as deemed necessary
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- Our experts on natural resources never received training on bamboo
- Forestry as a whole is a neglected sector
- We never supported the marketing of bamboo, it is going by its own informally
- Farmers know how to grow, manage and harvest bamboo

MOARD, Oromiya Regional State

- We know where the bamboo resources of the regional state are, but lack detail information on them
- Bamboo is being popularized as a non-timber forest product
- A manual is being prepared on how to grow, harvest and use it. FEMSEDA is hoped to provide training on bamboo processing, which could be an input for future work
- Bamboo plantation and marketing is steadily growing and we need to support that to grow even faster
- We need to do more on bamboo. Bamboo utilization has to improve and its economic potential has to be realized
- Its potential for environmental improvement, for example soil and water conservation, has to be actualized
- Its potential to create employment has to be harnessed
- We need to build our capacity for bamboo management and utilization
- Study to identify the various variety of our bamboos and to select improved varieties should be conducted
- Work has to be done to explore and create markets for bamboo and to formalize and expand the existing markets