

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT PROPOSAL

TITLE	ESTABLISHMENT OF A TRAINING AND TECHNICAL INFORMATION CENTRE FOR WOOD BASED INDUSTRIES
SERIAL NUMBER	PD 20/98 (I)
PERMANENT COMMITTEE	FOREST INDUSTRY
SUBMITTED BY	GOVERNMENT OF THE UNION OF MYANMAR
ORIGINAL LANGUAGE	ENGLISH

SUMMARY

The project aims at upgrading the efficiency and productivity of furniture and other wood based products by raising the skills of the local manufacturers and providing an information base for technical know-how. This will be achieved by training the workers and supervisory staff at all levels in modern production systems that are considered reasonably current and appropriate to the principles of quality management.

This is a continuous development programme and the training facilities will be located near the Myanma Timber Enterprise (MTE) wood processing complex in Yangon. This project will also place emphasis on the training of trainers so that the programme will continue to be operational beyond the period set for execution of the project.

EXECUTING AGENCY MYANMA TIMBER ENTERPRISE (MTE)

COOPERATING GOVERNMENTS GOVERNMENT OF MYANMAR

DURATION 2 YEARS

APPROXIMATE STARTING DATE 1998

BUDGET AND PROPOSED SOURCES OF FINANCE

Source	Contribution In US\$	Local Currency Equivalent
ITTO	487,630.00	
Gov't of Myanmar		Kyats 4,118,000
TOTAL	487,630.00	

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PART I CONTEXT

A. Relevance to ITTO

1. Compliance with ITTA Objectives

The project is consistent with the objectives established in Article 1 of the ITTA 1994.

- d. To enhance the capacity of members to implement a strategy for achieving exports of tropical timber and timber products from sustainably managed sources by the year 2000;
- h. To improve market intelligence with a view to ensuring greater transparency in the international timber market, including the gathering, compilation and dissemination of trade related data, including data related to species being traded;
- i. To promote increased and further processing of tropical timber from sustainable sources in producing member countries with a view to promoting their industrialisation and thereby increasing their employment opportunities and export earnings;
- k. To improve marketing and distribution of tropical timber exports from sustainably managed sources;
- m. To promote access to and transfer of technologies and technical co-operation to implement the objectives of this Agreement, including on concessional and preferential terms and conditions as mutually agreed;
- n. To encourage information sharing on the international timber market.

2. Compliance with ITTO Criteria

This project proposal complies with all the five criteria of the ITTO.

- (a) It is related to the production and the use of industrial tropical timber such as teak and other lesser known species available in Myanmar, a tropical country. The project is designed to establish a centre to train workers to produce value added products using tropical timbers mentioned above.
- (b) Production and marketing of quality wood products will enable the timber deficient consumer countries to use higher value added wood products. Revenue received from the export of these commodities would also contribute to the achievement of the sustainable forest management and the national economic development of Myanmar, a producing member country, thus yielding benefits to the tropical timber economy as a whole, relevant to both producing and consuming countries.
- (c) It is expected that project results would enhance the technical capabilities of the workers, thereby enabling the timber industry to produce higher quality products. This achievement will help maintain and expand the international trade in tropical timber.
- (d) Once the industry has the technical expertise, the economic outcome from production and marketing of value added products will be much more than the investment and maintenance cost of proposed project, thus offering reasonable prospects for positive economic returns in relation to costs.
- (e) Maximum use of existing research institutes, avoiding implication of effort. The proposed training centre for wood-processing technology and technical information centre proposed in this project is the first ever to be established in Myanmar. Vocational technical schools exist, but these institutions teach on a general scale, such as carpentry but do not specialise in the technical and mechanical aspects of wood working, especially mechanised furniture manufacture. Hence there will be no duplication of effort. The project also intends to make maximum

use of existing Forest Research Institute (FRI) of the Forest Department, under the same ministry.

3. Relationship to ITTO Action Plan and Priorities

This project is designed to train workers and supervisory staff on the production techniques and the use of technical and market information. People will be trained on both the practical and theoretical aspects of production of wood products from teak and other lesser known species and they will be given the much needed foreign exposure in these fields.

This project proposal is consistent with the following ITTO action plan and is related to the priorities of the committee on Forest Industry, and committee on Economic Information and Market Intelligence. This proposal is consistent with ITTO Action Plan and Priorities in the following areas:

- studies to provide needed information
- studies to promote sustainable development of forest industries
- information sharing in wood based products and furniture marketing

B. Relevance to National Policies

1. Relationship to sectoral policies affecting tropical timber

It is highly important to the Myanmar timber sector to have more of its timber processed within the country. The existing sawmills and plywood mills can absorb only about 34% of the annual allowable cut (AAC) of the nation's teak and other hardwoods. As a result much is sold abroad in raw material form to supplement the national income.

There are only five furniture factories in MTE and they are insufficient to meet the country's rapidly increasing domestic requirements, be it from a quantitative or qualitative aspect, let alone produce for export.

The policy of the forestry sector is " *to encourage production, processing, and marketing of hardwoods and other forest produce in*

the form of finished goods such as construction materials, furniture and other products by state enterprises or departments, co-operatives, and the private sector"

and " to encourage production of finished goods (i.e. value added wood based industries) and thereby reduce the export of logs as raw material."

The Ministry of Forestry's document for attracting investments in Myanmar invites foreign investors to set up joint-ventures with MTE or making 100% investments in wood processing activities, as a means of providing employment and thus improving the income of the people. Higher outputs of quality wood based products will also help enhance the value of the national resource by bringing about increased foreign exchange earnings.

In fact MTE engages itself in sawmilling, production of plywood and veneer, mouldings, finger jointing down to furniture, floorings and boat accessories and there is also a rattan factory. Most of the factories are located in MTE's complex in Yangon with some in Mandalay.

A training programme such as that proposed in this project complements with the MTE's framework of major activities. Benefiting from such a project, MTE will be able to provide the much needed trained manpower and operational systems to its production units. The methods developed and skills acquired from this endeavour will of course benefit the private sector as well.

In line with GOM's plans to privatise the economy, it is necessary to promote the private sector in the production and marketing the wood-based value added products.

This proposal focuses on establishing a training centre for wood-processing technologies and a technical information centre which will provide both MTE and the private sector with skilled labourers and technicians to produce wood-based value added products and provide information on which international markets to export the products.

2. Relationship to subsectoral aims and programmes

MTE has had the benefit of a two phase Wood Industries Project under the auspices of the IDA (World bank- Finland assistance programme.) which led to the modernisation of some of the primary and secondary processing plants.

This proposal to increase productivity in wood based products manufacturing provides the missing sequence of manpower development and technology adaptation which the previous projects did not provide. It could ideally lead to the introduction of a regular training programme in capacity building at the national level. Myanmar lacks such a training centre at present.

3. Institutional and legal framework

MTE is the sole government agency established with the task of administering the harvesting, processing and marketing of Myanmar's forest products according to the guidelines set out by the Ministry of Forestry. Hence the development of wood-based value added products and marketing of these products to international markets falls within the ambit of MTE's responsibilities.

MTE will liaise with sister departments, the Forest Department (FD), and the Planning and Statistics Department which are all under the Ministry of Forestry. These departments could contribute extensively towards achieving the aims of this project.

PART II : THE PROJECT

1. Origin

This project is a direct follow-up of Pre-Project Number PPD- 7/96 Rev. 1 (I) entitled "Upgrading Production Efficiency in Furniture Manufacturing" approved at the 20th Session of the ITTC on 2nd July 1996. The pre-project recommended that "a training centre should be established to produce skilled workers and managers for downstream production." This proposal is submitted as per recommendations made from the pre-project findings.

2 Project Objectives

2.1 Development Objective

To increase the forestry sector's contribution to the sustainable economic development of the country through capacity building by providing regular training programme to stakeholders at all levels engaged in wood-based downstream industries.

2.2 Specific Objectives

2.2.1 Specific Objective 1:

To improve the working skills and technical efficiency of personnel from MTE and the private sector in the manufacture of value added wood based products by providing appropriate training.

2.2.2 Specific Objective 2:

To establish a database on production of value added wood based products, to analyse and assess their marketing potential and to disseminate information to local producers.

3 Project Justification

3.1 Problems to be addressed

With its wealth of valuable raw material such as teak and abundance of low-cost labour, Myanmar could enjoy competitive advantages enabling it to make an impact in the international marketplace with the production of attractive up-market teak wood based products. In 1983, an attempt was made to upgrade the equipment installed in its factories for the production of wood based products through a loan from Asian Development Bank. However shortages of capital, technology and skilled manpower, still exist at all levels. The justification of this project lies in upgrading the technology and skills of workers. It is hoped that once this has been achieved, the deficiencies in capital and technology can be resolved through joint-ventures with carefully selected foreign

partners, but it must have a broad base of skilled workers and enlightened managers and supervisors well disciplined to assure sustained quality production. At present, there are no facilities in the country to train workers in the field of wood technology. People are trained only on a "look and learn" basis.

There may be other obstacles faced by the country in the process of industrialisation, but as mentioned above, the project will focus on what is considered to be three critical areas;

- human resource development;
- utilisation of appropriate modern production technology and methods, and
- development of markets for exporting these products.

Having appropriately trained people at all levels is fundamental to the development of a viable downstream industry, especially in wood processing, which has an excellent potential for contributing substantially to foreign exchange earnings. Since modern equipment and skilled workers who are trained to use them are not sufficiently available, the technology used in production must be both modern and appropriate.

3.2 Characteristics of area where project will be located

MTE is the government agency that is wholly responsible for the extraction, processing and the marketing of primary forest products. Provided that there are partners that can bring in financial resources and technology to develop the secondary processing industries, such ventures will have an assured supply of raw material. MTE has set up an industrial timber complex in Yangon. This complex, being the largest in the country, is an ideal location to accommodate the training centre.

The strategy is to maximise the utilisation of the machines existing at the MTE complex by ensuring that they are in perfect running condition and by modifying them to increase productivity by the introduction of low cost automation through the incorporation of pneumatic devices. The same MTE complex can, in later years, be developed into a centre for hands-on learning in wood based products,

making open to all wood based products manufacturing companies in the country. In this way the project will minimise high start up costs.

3.3 Other relevant aspects of "pre-project situation"

At this moment the major timber processing organisation, MTE is producing moulding and flooring products and, to a lesser extent, furniture components on buy-back arrangement with an overseas company in return for the supply of machinery and consumables. This is a short term agreement with limited benefits in terms of transfer of technology. Yet, as mentioned earlier, there is a pressing need to intensify value added processing on a more sustained basis.

3.4 Intended situation after project completion

Upon completion of the project, the momentum of the training programme will cultivate a culture for continual improvement and a desire for skill and quality upgrading. Appropriate production systems will be applied and people trained under this project will then be able to teach new recruits on a continuous basis.

3.5 Target beneficiaries and others affected

The direct beneficiaries of the project would be the present five furniture factories of MTE. Joint ventures, co-operative syndicates and private sector that are engaged in wood-based downstream processing industries would also be benefited. Their employees, technicians and supervisors will be accepted to attend relevant courses conducted in the training centre under this project.

3.6 Project Strategy

3.6.1 Reasons for selection

Lack of technical know-how and capital being the major hindrance in the development of the wood industry in Myanmar. This project, if approved, will bring in the much needed technology and exposure for the local people and will enable the local industry to achieve higher revenue from its exports. At the

same time, the ability to utilise wood to the optimum will discourage excessive cutting of wood and therefore would cause the least damage to the environment.

3.6.2 Lessons drawn from past evaluation

As mentioned in the pre-project report for PPD7/Rev.1 (I), the Myanmar wood industry is partly craft and part mechanised. This is not helpful to producing products on an efficient scale. The income from the export of value added products is minimal, considering the availability of forest resources. Compared to the performance of the neighbouring countries, Myanmar lags far behind indicating the lack of infrastructure and the lack of a well-trained workforce.

Experience from countries such as Malaysia, Thailand and Indonesia, that have recently shown tremendous progress in the export of wood based products, indicate that the best policy is a combination of an appropriate modern technology and a trained labour force. Timber technology training centres are being set up, for example, in Malaysia for the specific purpose of developing appropriate technology to be manned by skilled workers.

3.6.3 Technical & Scientific Aspects

The weakest links in the chain of wood processing through marketing are technology and market information. This project is designed so that, with the availability of current production technology at MTE (considered adequate for this purpose), efforts will focus on the training of workers at all levels and on developing a production system that ensures continuous operation on a sustained level. Continuity of the training programme and regular update of market information beyond the project period will be possible because of the fact that the project will have trained the trainers and developed the training material as well as identifying the sources of technology and market information.

Another alternative would be to stress on the application of the latest production technology, but this would hardly do justice to the massive labour force as modern processing technologies have been developed to cut down labour requirements and manufacturing is mostly performed using integrated production lines. In the case of MTE this would involve tremendously large investments. Modern processing technologies are also better suited for production in very large series, which at present time would cause problems for their introduction in Myanmar because of the need to create, from scratch, markets for these large volumes. This proposes the introduction of a modern system at an appropriate level of technology with a good use of skilled labour. Such a combination is considered best suited to the present situation in Myanmar.

3.6.4 Economic Aspects

From the economic point of view this project will enable Myanmar to diversify its export of raw material such as, logs and rough sawn timber to value added finished products, thereby increasing its revenue earnings. It will also promote the establishment of new wood based industries and support industries such as maintenance workshops, transport services, packaging, and auxiliary materials. This will result in creating direct employment opportunities. There will be possibilities for the modernised wood industry to cater to the rapidly developing tourism and construction by providing furnishings to the numerous hotels and restaurants and offices that are being set up.

3.6.5 Environmental Aspects

Environmentally, all care will be taken to ensure a minimum of hazards to workers through the installation on all machines of safety features and the training in safety procedures. In the same vein, reduction of waste will not only increase productivity but also result in a cleaner working place. The increased local processing of timber will contribute to a better economic use of resources and will be seen as a move to counter any trend to

escalate logging activities and the export of logs. No major water pollution is envisaged. Air pollution from sawdust and from sprays and polish will be kept to a minimum by installing dust collectors and pressure rooms and other safety measures will also be applied. More importantly, this training project would produce a skilled and motivated workforce who would definitely contribute to higher recovery rates in production. This would certainly have a positive impact on the environment.

3.6.6 Social Aspects

Because of the project, the resultant benefits of a strong wood based industry will produce, in the long run, enormous multiplier effects in the development of the sector. The emergence of support industries will also create further employment, increased wages, and an improved standard of living of workers. Better quality wood products will also be available to the people.

3.6.7 Managerial Aspects

This project will have a locally appointed manager, support staff as needed, and will engage international consultants who will be supported by local counterparts. The outputs will cover basic need for managerial and technical know-how along the concept of quality management and production at the industrial level. There will be continuity of programmes as selected trainees will be groomed to become trainers, whilst keeping themselves exposed to current developments and technology. Minor pieces of equipment and teaching aids, needed to ensure the introduction of appropriate modern methods, will also be provided. This project is expected to last (24) months.

3.7 Reasons for ITTO Support

3.7.1 ITTO Aspects

Both technical and financial assistance will be needed for the successful implementation of the project. Since the Pre-project Number "PPD-7/96 Rev. 1 (I) entitled "Upgrading Production

Number "PPD-7/96 Rev. 1 (I) entitled "Upgrading Production Efficiency in Furniture Manufacturing" had been approved and financed by ITTO. This project proposal for the "Establishment of a Training and Technical Information Centre for Wood Based Industries" as a follow-up to the previous pre-project, cannot be achieved without ITTO's support .

3.7.2 Relationship to relevant actions supported by other donors

In 1983, MTE had the benefit of a two-phase wood industries project under the auspices of the International Development Association (World Bank-Finland assistance programme) which led to the modernisation of some of its primary and secondary processing plants. This proposal to increase productivity in wood based products manufacturing provides the missing sequence of manpower development and technology adaptation, which that project did not provide. It could ideally lead to start of a regular training programme in production at the national level.

3.8 Risks

There are certain risks involved. These could include, among others, unforeseen policy and administrative matters; delays in implementation; delays in receiving funds; suitable consultants not being available; minor changes in travel plans and changes of items in equipment purchase.

4. OUTPUTS

4.1 Specific Objective I

To improve the working skills and technical efficiency of personnel from MTE and the private sector in the manufacture of value added wood based products by providing appropriate training.

OUTPUT 1.1

Training course for furniture manufacturing planned and designed.

OUTPUT 1.2

Training course on furniture manufacturing conducted.

4.2 Specific Objective 2

To establish a database on production of value added wood based products, to analyse and assess their marketing potential and to disseminate information to local producers.

OUTPUT 2.1

Market information and technology on wood based products collected.

OUTPUT 2.2

Furniture designs exportable to world markets analysed and researched

OUTPUT 2.3

Market information and technology disseminated.

5. ACTIVITIES AND INPUTS**5.1 OUTPUT 1.1: Training course for furniture manufacturing planned and designed.****Activity 1.1.1**

Arrangement of In-country and overseas studies and training on furniture manufacturing .

Inputs

- Setting up of the project office.
- Recruit one senior consultant
- Training aids and training materials.
- Schedule for training & survey tours in-country & overseas.

Activity 1.1.2

Selection of trainees and trainers.

Inputs

- 20 management personnel of MTE
- 20 operators from various furniture factories.
- 20 personnel and operators from private factories.

Activity 1.1.3

Collection of training aids and materials.

Inputs

- Project staff
- Financial resources for purchasing materials.

Activity 1.1.4

Translation of training manuals into Myanmar language.

Inputs

- Project staff
- Training manuals collected from trainers.
- Technical books, periodicals etc for training centre.

5.2 OUTPUT 1.2 Training course on furniture manufacturing conducted.

Activity 1.2.1

Setting up of training centre.

Inputs

- Classrooms, furniture and other necessities for the training.

Activity 1.2.2

Conduct of training course on furniture manufacturing.

Inputs

- Lectures and practical works.
- Practical observation by visiting the furniture factories and showroom in Yangon.

Activity 1.2.3

Overseas study tours and training.

Inputs

- Low cost Automation Training at a suitable institute for small scale industries.
- Visit to woodworking machinery fairs in neighbouring countries, e.g. Woodmac Asia in Singapore.
- Survey tour to furniture factories, exhibitions and showrooms in neighbouring countries.

Activity 1.2.4

Organising workshops and seminars.

Inputs

- Project staff
- Participants, trainees and interested personnel of value added wood based products.
- Discussion papers.

5.3 OUTPUT 2.1 : Market Information and technology on wood based products collected.

Activity 2.1.1

Review on existing local and global information.

Inputs

- Data on market trends, wood based products and technology
- International periodicals and publications.

Activity 2.1.2

Setting up of Technical Information Centre.

Inputs

- Computer, printer, scanner, software etc.
- Data & information.

Activity 2.1.3

Market survey abroad.

Inputs

- Furniture Fairs in neighbouring countries.
- To developed countries.

5.4 OUTPUT 2.2 Furniture designs exportable to world markets analysed and researched.

Activity 2.2.1

Assessment of wood based products and furniture in both local and world market.

Inputs

- Market information, market demands.
- Statistics on production of value added wood based products.
- Reports and periodicals.

Activity 2.2.2

Development of new designs and manuals.

Inputs

- Prototype making
- Experimentation
- Skilled personnel

Activity 2.2.3

Practical training to manufacture the new designs.

Inputs

- Project staff and trainers.
- Raw materials.
- Furniture factories

Activity 2.2.4

Production of the approved designs in the factory.

Inputs

- Skilled personnel
- Trained staff
- Manuals and raw materials

5.5 OUTPUT 2.3 : Market Information and technology disseminated.

Activity 2.3.1

Holding workshops and seminars.

Inputs

- Participants
- Project staff
- Discussion papers
- New furniture designs

Activity 2.3.2

Publication of bulletins and periodicals on market information, new technology and data.

Inputs

- Data on products, new furniture designs
- Computer
- Printing offset

Activity 2.3.3

Exchanging information and data with related sources abroad.

Inputs

- Private firms, Government institution
- Information leaflet and papers

Activity 2.3.4

To organise a furniture exhibition in Yangon.

Inputs

- Wood based products, furniture
- Photos and pictures
- Leaflets

6. LOGICAL FRAMEWORK WORKSHEETS

Logical framework worksheets are attached.

7. WORK PLAN

The work plan is attached.

8. INSTITUTIONAL ARRANGEMENTS FOR EXECUTION AND OPERATION

8.1. Management Structure

The project will be executed by Myanmar Timber Enterprise.

The project shall have a Project Steering Committee (PSC) appointed by the Ministry of Forestry. The committee shall meet at least once every three months, and give necessary guidance. The committee will appoint a Project Manager, who will be responsible for the day to day operation of the project.

The PSC will also review the Myanmar Timber Enterprise's contribution in kind and in cash and will take corrective action as and when needed. Appropriate resources of MTE would be made available for the successful implementation of the project.

8.2. Future operation and maintenance.

It is intended that MTE would continue with the programme at the termination of the project. Training courses will be given yearly, half yearly or as necessary by using the outstanding trainees from this project as future trainers.

A Technical Information Centre would remain functioning permanently to update and circulate information and data.

8.3. Key Staff

Key Staff will be delegated from amongst the officers from the Furniture Factory Complex. They would be managers and engineers working in this particular field of woodworking.

9. PRIOR OBLIGATIONS AND PREREQUISITES

Government authorisation concerning this project will have been made by the date of approval of the project. MTE's contribution to the expenses of this project will be available for the first financial year prior to starting of the project and will be included later in MTE's budget for the subsequent years.

Site and building for project office and training centre and assessories will be provided by MTE once the project is approved and financed.

10. POSSIBLE FUTURE ACTIONS

It is expected that the activities will continue upon completion of the project as part and parcel of MTE's future operations. Myanma Timber Enterprise intends to establish permanent training centres for saw-milling, saw-shop maintenance, furniture production and plywood manufacturing.

Training courses for other wood-based products, such as plywood manufacturing, and saw-milling may also be introduced in the future to promote the technical efficiency in additional areas.

PART III MONITORING, REPORTING AND EVALUATION

1. Arrangements for reporting.

- (a) Project Progress Reports will be submitted to ITTO every six months, and at any other such time as ITTO may require.
- (b) Project Completion Report and other related reports will be submitted to ITTO as prescribed in the "ITTO Manual for Project Formulation".

2. ITTO monitoring and Review

The project will be subjected to monitoring by representatives of ITTO at least once every twelve months at dates to be jointly agreed upon between the executing agency (MTE) and the ITTO.

3. Evaluation

- (a) Monitoring missions will decide whether a mid-term evaluation is necessary. The date of any such evaluation will be identified jointly by ITTO and the executing agency. Terms and references are to be formulated jointly by the monitoring mission and the project staff for consideration by ITTO.
- (b) No ex-ante or ex-post evaluation is foreseen since this project was initiated through a pre-project and given that no environmental impacts are expected.

4. Schedule

A preliminary monitoring and reporting schedule indicates the following dates for the visits to the implementing agency.

<u>Srl</u>	<u>Description</u>	<u>Date</u>
1.	First disbursement request	1 month after the project approval
2.	First project progress report	6 months after the project approval
3.	Second project progress report	11 months after the project approval
4.	First monitoring mission	12 months after the project approval
5.	Third project progress report	17 months after the project approval
6.	Second monitoring mission	18 months after the project approval
7.	Project completion report	27 months after the project approval

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK WORKSHEETS

**PROJECT TITLE:- ESTABLISHMENT OF A TRAINING AND TECHNICAL INFORMATION
CENTRE FOR WOOD BASED INDUSTRIES**

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Development Objectives</u> To increase the forestry sector's contribution to the sustainable economic development of the country through capacity building by providing regular training programme to stakeholders at all levels engaged in wood-based downstream industries.	<u>Will show an increase in:-</u> 1. Production & quality of the products. 2. Local earning of products. 3. Export income of the products. 4. Jobs. 5. Creation of new firms.	1. Statistics of the factories. 2. Official statistics. 3. Official statistics. 4. Labour statistics. 5. Company registration statistics.	1. That imports of required machines & materials are facilitated. 2. Wage is attractive in accordance with skill and effort. 3. The necessary industrial and communication infrastructure (power etc.) are developed to meet the expanded demands.

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Specific Objectives:</u> <u>Specific Objective(1)</u> To improve the working skills and technical efficiency of personnel from MTE and the private sector in the manufacture of value added wood based products by providing appropriate training.	(1) Manpower trained. (2) Records of courses held. (3) Training methods, manuals, visual aids etc. used.	(1) Improving in production planning. (2) Improvement in production & product quality. (3) Interviewing the trainees.	(1) Support from top management to introduce improvements and changes. (2) Willingness of middle management to accept changes and to give priority to improving quality, safety, maintenance, productivity etc. (3) Promotion of the best suited candidates to supervisory post. (4) Selection of most appropriate candidates for overseas study tour. (5) Exposure to overseas market requirements facilitated through visit of fairs, tour exhibitions, etc.

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Specific Objectives</u> <u>Specific Objective(2)</u> To establish a database on production of value added wood based products, to analyse and assess their marketing potential and to disseminate information to local producers.	(1) Increased sharing of market information. (2) Changes in system of production and introduction of new designs compatible with current market requirements.	(1) Reports of desk research on international markets. (2) Publications by MIU. (3) Designs and prototypes, manuals of production of new designs emanating from the research. (4) Inspection of physical assets. (5) Assessment of efficiency in responding to orders.	(1) Suitability and motivation of the candidates selected. (2) Availability of foreign currency on a sustained basis to continue receiving information from abroad. (3) Sufficient local currency budget to cover local operating cost. (4) Possibility to be kept informed of development in technology & markets through overseas visits.

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Specific Objective 1</u> <u>Output 1.1</u> Training course for furniture manufacturing planned and designed.	(1) Topics and subjects selected for training. (2) Complied list of equipment, training aids of training course. (3) List of consultants and local instructors assigned to the training course. (4) Training notes and materials.	(1) Official documentation. (2) Reports and monitoring.	(1) Support from top management for training course and survey tours. (2) Selection of the best suited candidates for the training course and survey tours. (3) Attractive prospects for the trainees.

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Specific Objective 1</u> <u>Output 1.2</u> Training course on furniture manufacturing conducted.	(1) Number of persons trained. (2) Records of training course held. (3) Training methods, manuals, visual aids, etc. used. (4) Reports of survey tour. (5) Programme of workshop seminar.	(1) Records & evaluation of trainees. (2) Improvement in efficiency of the trainees at work-site. (3) Increase in production & improvement in quality through official records & practical inspection. (4) Improvement in yield through waste reduction. (5) Records & papers of the technical seminars.	(1) Support from top management to introduce improvements. (2) Willingness of middle management & technicians to participate in technical seminars on furniture production. (3) Awareness of importance of overseas market exposure through trade fairs, forums and exhibitions etc.

Project Elements	Objectively verifiable indicators	Means of verification	Important assumptions
<u>Specific Objective 2</u> <u>Output 2.1</u> Market information and technology on wood based products collected.	(1) Desk research of home consultant on production, marketing & prices of wood-based products. (2) Subscription & purchased of periodicals and books. (3) Purchase of equipment for MIU. (4) Survey tour to developed & neighbouring countries.	(1) Desk research report of consultant on production & marketing of wood-based products. (2) Subscribed & purchased of periodicals & books. (3) Purchased equipment. (4) Survey tour report. (5) Interview with officials of MIU.	(1) Suitability and motivation of the candidates selected. (2) Willingness of top management to establish the MIU and to give exposure to international markets. (3) Selection of appropriate technical staff for survey tours.

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Specific Objective 2</u> <u>Output 2.2</u> Furniture designs exportable to world markets analysed and researched	(1) New range of designs and prototype complete with technical specification and production manual. (2) Personnel trained for serial production.	(1) Practical inspection at the factory and the distribution centre. (2) Actual availability of the new designs in the market.	(1) Willingness of the top management to change from mechanised craft level to serial production. (2) Availability of all the hardware fittings and raw materials on a sustained basis for new designs.

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Specific Objective 2</u> <u>Output 2.3</u> Market information and technology disseminated.	(1) Organisation of workshop seminars on production technology, marketing and introduction of new designs etc. by project managers & trainees. (2) Publication of technological information, both in Myanmar & English quarterly, yearly and as necessary. (3) Exchange of information. (4) Exhibition of Furniture Fairs.	(1) Record of the workshop seminar. (2) Published bulletins and periodicals. (3) By attending the seminars. (4) By visiting the Fair. (5) Checking on information exchanged. (6) Inspecting the physical assets.	(1) Suitability and motivation of the candidates selected. (2) Sufficient local currency budget to cover the local operating costs. (3) Willingness of top management to organise seminar and fair. (4) To be kept informed and updated on the development in technologies and markets through visits to trade fairs, technical forums & exhibitions.

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Specific Objective 1</u> <u>Output 1.1</u> <u>Activity 1.1.1</u> Arrangement of In-country and overseas studies and training on furniture manufacturing .	(1) Establishment of project office administered by the Project Manager. (2) Recruitment of a senior consultant to design training course. (3) Listing of training equipment, training aids and training materials. (4) List of trade, furniture and machinery fairs.	(1) Visits to the office. (2) Interview with consultant. (3) List of training equipment, aids and materials.	
<u>Activity 1.1.2.</u> Selection of trainees and trainers.	(1) List of consultants available (2) Training notes and handouts. (3) List of qualified trainees for the training course	(1) List of consultants assigned to training course. (2) Training notes from the consultants.	

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Activity 1.1.3</u> Collection of training aids and materials.	(1) Order list of equipment. (2) Arrangement for training aids required.	(1) Purchased equipment & training aids at the training centre. (2) By visiting to the project office and training center.	
<u>Activity 1.1.4</u> Translation of training manuals into Myanmar language.	(1) List of consultants assigned for specific subjects. (2) Handouts in English and Myanmar language. (3) List of technical books on technology of wood based products.	(1) Training notes collected from consultants concerned. (2) Prepared lecture handouts. (3) Ordered or purchased technical books.	

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>SPECIFIC OBJECTIVE 1.</u> <u>OUTPUT 1.2.</u> <u>ACTIVITY 1.2.1</u> Setting up of training centre.	(1)Installation of equipment. (2)Furnishing of classrooms.	(1)Practical inspection to the classroom.	
<u>Activity 1.2.2.</u> Conduct of training course on furniture manufacturing.	(1)Training schedules, training handouts etc. (2)Trainees selected. (3)Attendance	(1)Training records and evaluation of training and trainees. (2)Reports on training.	

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Activity 1.2.3</u> Overseas study tours and training.	(1)Schedule of training course (2)Programme for overseas visit and survey tour (3)Discussion of trainees in the workshop seminars.	(1) Technical reports on the training course (2) Reports of the overseas visit and the survey tour. (3) Seminar papers.	
<u>Activity 1.2.4</u> Organising workshops and seminars.	(1)Programme of workshops/ seminars. (2)List of participants.	(1) Records of the technical seminar. (2) By visiting the seminar.	

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Specific Objective 2</u> <u>Output 2.1</u> <u>Activity 2.1.1</u> Review on existing local and global information.	(1) Programme of desk research. (2) List of periodicals and technical books on marketing of wood-based products.	(1) Desk research report. (2) Collected data. (3) Purchased books and subscription list.	
<u>Activity 2.1.2</u> Setting up of Technical Information Centre.	(1) List of equipment and consumables for the TIC. (2) Organisation of TIC. (3) Presenting papers to the seminar.	(1) By visit to the TIC. (2) Purchased equipment. (3) Analysis of data & information by TIC. (4) papers presented to the seminar.	

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Activity 2.1.3</u> Market survey in abroad.	(1) Study tour programme to developed countries, and survey tour programme to furniture fairs in neighbouring countries. (2) List of organisation, councils, government departments & research centers to make contacts to exchange information. (3) Presentation of papers to workshop seminar on market information of wood based products.	(1) Survey tour reports of the participants. (2) List of organisations, councils etc. contacted for exchange of information. (3) papers presented at the workshop/seminar.	

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Output 2.2</u> <u>Activity 2.2.1</u> Assessment of wood based products and furniture in both local and world market.	(1) Assessment of the existing products. (2) New designs suitable for serial production. (3) New designs for knock-down (KD) furniture suitable for export.	(1) Recommended new designs suitable for serial production. (2) Recommended new designs of KD furniture for export.	
<u>Activity 2.2.2</u> Development of new designed and manuals.	(1) Making of prototypes of approved designs. (2) Fabrication of approved designs. (3) Preparation of production manuals for approved designs.	(1) Prototypes, drawing & photos of approved designs. (2) Manuals for production of approved designs.	

PROJECT ELEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Activity 2.2.3</u> Practical training to manufacture the new designs.	(1) Personnel trained for producing new designs.	(1) Products produced by Trainees. (2) Interviewing the trainees.	
<u>Activity 2.2.4</u> Production of the approved designs in the factory.	(1) Prototypes, technical specifications and production manuals of new designs. (2) Departmental approval to manufacture new designs. (3) Participating in the workshop/seminar on production of new designs.	(1) Practical inspection at the factory. (2) Actual availability of new products in the markets. (3) Records and reports of workshops/seminars presented to the seminars on production of new designs.	

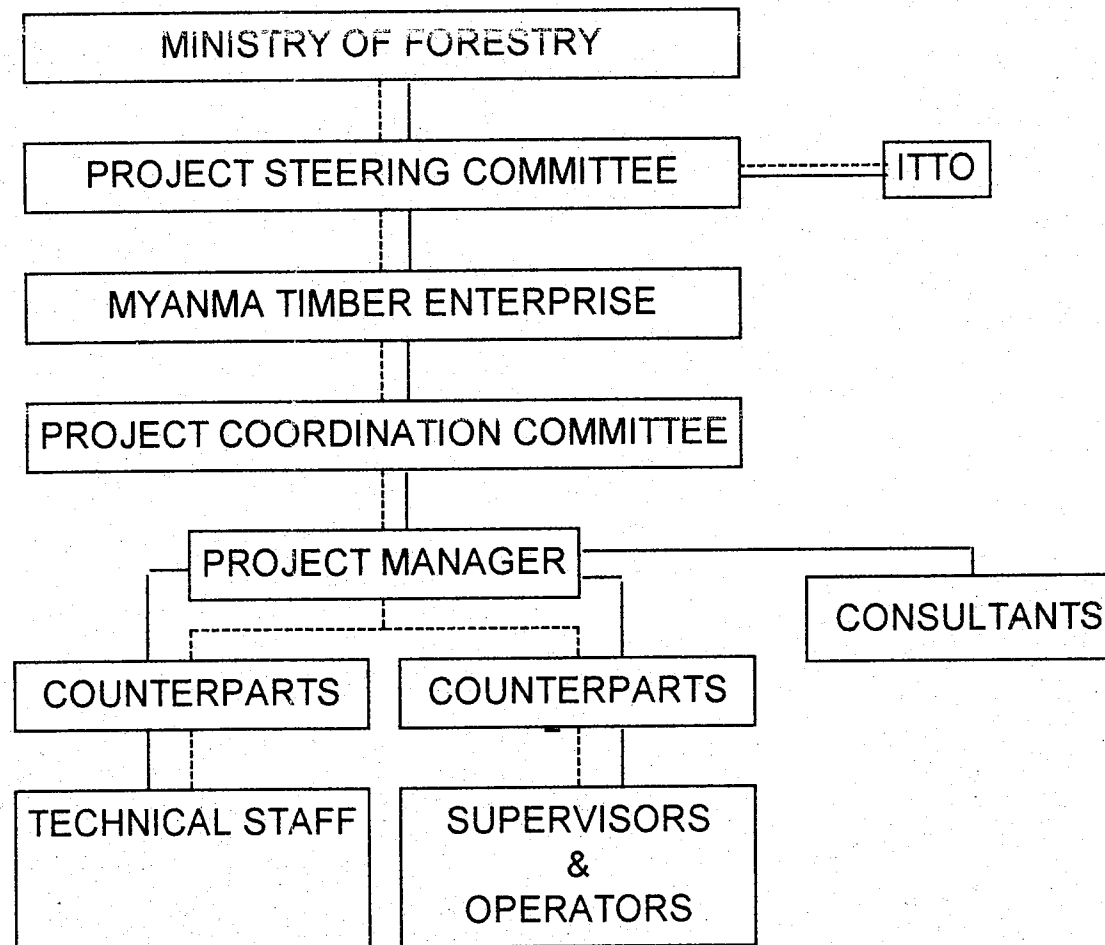
Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Out Put 2.3</u> <u>Activity 2.3.1</u> Holding workshops and seminars.	(1) Programme and schedule of the seminar. (2) List of participants and topics to be discussed.	(1) Records of the seminar. (2) Report papers put up to the seminar and discussions. (3) Visit to the seminar.	
<u>Activity 2.3.2</u> Publication of bulletins and periodicals on market information, new technology and data.	(1) Assignment to publish quarterly, yearly, on market information and on production technology of wood-based materials both in English and Myanmar.	(1) Published articles, bulletins, booklets etc.	

Project Elements	Objectively verifiable Indicators	Means of verification	Important assumptions
<u>Activity 2.3.3</u> Exchanging information and data with related sources abroad.	(1) Exchange of market information, production and technology of wood-based products with related departments, organisations and institute abroad.	(1) Information sent to related departments, organisations and institutes abroad. (2) Information and data received from the related departments, organisations and institutes abroad.	
<u>Activity 2.3.4</u> To organise a furniture exhibition in Yangon.	(1) Programme of the exhibition (2) Announcement of the exhibition to private companies and manufacturers to participate.	(1) Visit to exhibition. (2) Records of the exhibition. (3) Sales and contracts of exhibited articles.	

WORK PLAN

OUTPUT AND ACTIVITY	SCHEDULE (MONTHS AFTER PROJECT APPROVAL)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<u>Output 1.1 Training course designed</u>																								
<u>Activity</u>																								
1.1.1-Arrangement of training																								
1.1.2-Selection of trainees and trainers																								
1.1.3-Collection of training aids																								
1.1.4-Translation into myanmar language																								
<u>Output 1.2 Training course conducted</u>																								
<u>Activity</u>																								
1.2.1-setting up training centre																								
1.2.2-Conduct training course																								
1.2.3-Oversea study tours																								
1.2.4-Organizing workshop semina																								
<u>Output 2.1-Market information collected</u>																								
<u>Activity</u>																								
2.1.1-Review on information																								
2.1.2-Setting up of Technical Information Centre																								
2.1.3-Market survey in abroad																								
<u>Output 2.2 New furniture design analysed and researched</u>																								
<u>Activity</u>																								
2.2.1-assessment of wood based products																								
2.2.2-Development of new designs																								
2.2.3-Practical training for new designs																								
2.2.4-Production of new designs																								
<u>Output 2.3 Market information disseminated</u>																								
<u>Activity</u>																								
2.3.1-Holding work shop and seminar																								
2.3.2-Publication of periodicals																								
2.3.3 Exchanging information																								
2.3.4-Organizing furniture exhibition																								

INSTITUTIONAL ARRANGEMENTS FOR EXECUTION AND OPERATION



Line of Authority —————
 Line of Feedback - - - - -
 Line of Consult = = = = =

PROJECT BUDGET

Overall Project Budget

No	Component / Activity	Number	Unit Cost (US \$ /Kyat)	ITTO Contribution (US \$)	G.O.M Contribution (Kyat)
10	<u>Project Personnel</u>				
11	National Experts (4 x 24 m)	96 mm	3,000		288,000
12	Administrative Personnel	24 mm	1,500	36,000	
13	International Consultants	8.75 mm	10,000	87,500	
14	Other Labour				
	Secretary (3 x 24 m)	72 mm	2,500		180,000
	Senior Staff (3 x 24 m)	72 mm	2,000		144,000
	Junior Staff (3 x 24 m)	72 mm	1,500		108,000
	Peon (3 x 24 m)	72 mm	1,000		72,000
	Driver (3 x 24 m)	72 mm	1,000		72,000
19	Component Total			123,500	864,000
30	<u>Duty Travel</u>				
31	Daily Subsistence Allowance			85,100	
32	Transport Cost				136,000
39	Component Total			85,100	136,000
40	<u>Capital Items</u>				
41	Premises				1,165,500
42	Capital Equipment (Annex 1)	1 Lot		152,000	550,000
49	Component Total			152,000	1,715,500
50	<u>Consumable Items</u>				
	Furniture fittings & hardwares such as magnetic, spring, pressure catches, knock down(fittings & fasteners,connectors,conner brackets drawer slides, extend- able rails, machine tools & accessories, etc.			18,000	
52	Spares	1 Lot			20,000
53	Utilities				998,400
54	Office Supplies	1 Lot			10,000
59	Component Total			18,000	1,028,400
60	<u>Miscellaneous</u>				
61	Sundry			4,000	
62	Refund of Pre-Project Costs			9,500	374,300
69	Component Total			54,300	374,300
				67,800	374,300

No	Component / Activity	Number	Unit Cost (US \$ /Kyat)	ITTO Contribution (US \$)	G.O.M Contribution (Kyat)
70	<u>ITTO Monitoring, Evaluation & Administration</u>				
71	Monitoring and evaluation			19,130	
72	Administrative Costs			22,100	
79	Component Total			41,230	
99	Grand Total			487,630	4,118,200

COMSUMABLES

Activity	Description	Nos	Rate US\$	Amount US\$ (CIF)
<u>1.1.3</u>				
1.	Diamond grinding wheel 150mm X 16mm t X 19 mm / hole (dish type) grid no. 150	5	180	900
2.	Diamond grinding wheel 150mm X 16mm t X 19 mm / hole (dish type) grid no. 240	5	180	900
3.	Diamond grinding wheel 100mm X 32mm t X 19 mm / hole (cup type) grid no. 150	4	150	600
4.	Diamond grinding wheel 100mm X 32mm t X 19 mm / hole (cup type) grid no. 240	4	150	600
				3000
<u>2.2.2</u>	<u>Cutter knives</u>			
1.	T.C.T Knife 75X35X3 mm	6	40	240
2.	T.C.T Knife 152X35X3 mm	6	80	480
3.	T.C.T Knife 310X35X3 mm	6	120	720
4.	T.C.T Knife 450X35X3.2 mm	6	140	840
5.	T.C.T Knife 530X35X3.2 mm	6	180	1080
6.	T.C.T Knife 610X35X3.2 mm	6	200	1200
				----- 4560
	<u>Chisel with internal auger</u>			
1	Chisel mortise square hollow with internal auger 1/4"	10	20	200
2	Chisel mortise square hollow with internal auger 3/8"	38	25	950
3	Chisel mortise square hollow with internal auger 1/2"	8	30	240
				----- 1390
	<u>Sanding belt</u>			
1.	Sanding belt (cloth) 710 w mm X 2500LXNo.80	10	35	350
2.	Sanding belt (cloth) 710 w mm X 2500LXNo.160	10	35	350
3.	Sanding belt (cloth) 1350 w mm X 2515LXNo.80	10	55	550
4.	Sanding belt (cloth) 1350 w mm X 2515LXNo.160	10	55	550
5.	Sanding belt (cloth) 1310 w mm X 2500LX grid 80	10	55	550
6.	Sanding belt (cloth) 1310 w mm X 2500LX grid 120	10	55	550
7.	Sanding belt (cloth) 1310 w mm X 2500LX grid 180	10	55	550
				----- 3450

Activity	Description	Nos	Rate US\$	Amount US\$(CIF)
2.2.2	<u>Furniture Fittings Hardware & Accessories</u>			
a.	Magnetic Catches, Spring Catches, pressure Catches, magnetic pressure catches brass bolts, flush bolts.			800
b.	<u>Knock down fittings & fasteners</u>			
1.	Connecting bolts, double ended bolts capped bolts, brass screws, flush bolts.			500
2.	Precision drilling jigs (drill guides) H.S.S twist drill 7 mm, 5mm			1000
3.	precision marking gouges.			200
4.	Flush fittings, suspension fittings, push -fit fasteners & connectors, connecting brackets, mitre joint connectors.			500
c.	<u>Hinges</u>			
	Concealed boss hinges (brass, metal) glass door hinges, flap hinges, mitred hinges. special hinges 90 , 180 , 360			800
d.	<u>Drawer attachments</u>			
	various types of drawer slides, runners & screws			800
e.	<u>Table fittings</u>			
	concealed brackets, extendable rails pull out table fittings			1000
				5600
	Total			15000
	Consumable Grand Total			18000

CONSOLIDATED YEARLY PROJECT BUDGET

(IN THOUSAND)

ANNUAL DISBURSEMENT BUDGET COMPONENTS	TOTAL		1ST 12 MTS		2ND 12 MTS	
	US \$	KYATS	US \$	KYATS	US \$	KYATS
10. PROJECT PERSONNEL	123.50	864.0	80.50	432.0	43.0	432.0
20. SUB CONTRACTS	-	-	-	-	-	-
30. DUTY TRAVEL	85.10	136.0	43.10	136.0	42.0	-
40. CAPITAL ITEMS	152.00	1715.5	141.00	1185.5	11.0	530.0
50. CONSUMABLE ITEMS	18.00	1028.4	3.00	529.2	15.0	499.2
60. MISCELLANEOUS	67.80	374.3	65.80	228.2	2.0	146.1
70. ITTO MONITORING	41.23	-	41.23	-	-	-
EVALUATION & ADMINISTRATION						
REFUND OF PRE-PROJECT	-		-		-	-
GRAND TOTAL	487.63	4118.2	374.63	2510.9	113.0	1607.3

OVERALL PROJECT BUDGET BY ACTIVITY

OUTPUT/ACTIVITIES	PROJECT PERSONNEL (19)		SUB CONTRACTS (29)		DUTY TRAVEL (39)		CAPITAL ITEMS (49)		CONSUMABLE ITEMS (59)		MICELLANEOUS (69)		MONITORING EVALUATION & ADMINISTRATION (79)		GRAND TOTAL (89)	
	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS
OUTPUT 1.1																
Training course designed																
Activities																
1.1.1-Arrangement of studies and training	4.0				2.2											
1.1.2-Selection of trainees and trainers	4.0															
1.1.3-Collection of training aids and materials	3.0						122.5	478.0	3.0							
1.1.4-Translation into myanmar language	2.5						5.0									
OUTPUT 1.1. SUB-TOTAL	13.5	144.0	-	-	2.2	136.0	127.5	478.0	3.0	196.4	-	95.4	-	-	146.2	1049.8
OUTPUT 1.2																
Implementation of Training Course																
Activities																
1.2.1- Setting up of training centre	17.0							450.0								
1.2.2- Conduct of training course	17.0							90.0								
1.2.3- Overseas study tours and training	17.0				40.9			90.0								
1.2.4- Organizing Work Shop Seminar	16.0							77.5			2.0					
OUTPUT- 1.2. SUB-TOTAL	67.0	288.0	-	-	40.9	-		707.5	-	332.8	2.0	132.8	-	-	109.9	1461.0
OUTPUT 2.1																
2.1.1-Review on information	5.0						3.0									
2.1.2-Setting up of Technology Information Centre	5.0						10.5									
2.1.3-Market survey in abroad	4.0				39.0											
OUTPUT- 2.1 SUB-TOTAL	14.0	216.0			39.0	-	13.5	90.0		249.6	-	55.6			66.5	611.2
OUTPUT 2.2																
Introduction of new furniture design																
Activities																
2.2.1-Assessment of wood based products and furniture	7.0				3.0		1.0									
2.2.2-Development of new designs and manuals	7.0								15.0							
2.2.3-Practical training of new designs	6.0															

OVERALL PROJECT BUDGET BY ACTIVITY

(US \$, KYATS in thousand)

OUTPUT/ACTIVITIES	PROJECT PERSONNEL (19)		SUB CONTRACTS (29)		DUTY TRAVEL (39)		CAPITAL ITEMS (49)		CONSUMABLE ITEMS (59)		MICELLANEOUS (69)		MONITORING EVALUATION & ADMINISTRATION(79)		GRAND TOTAL (89)	
	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS	US\$	KS
2.2.4-production of new designs	6.0															
OUTPUT 2.2 SUB-TOTAL	26.0	144.0	-	-	3.0	-	1.0	110.0	15.0	166.4	-	42.0			45.0	462.5
OUTPUT 2.3																
Dissemination of Market information																
Activities																
2.3.1-Holding work shop and seminar	1.0															
2.3.2-Publication of books	1.0						10.0									
2.3.3-Interchanging information	0.5															
2.3.4-Display Furniture Exhibition	0.5															
OUTPUT 2.3 SUB-TOTAL	3.0	72.0	-	-			10.0	330.0		83.2	2.0	48.5			15.0	533.7
Total	123.5	864.0	-	-	85.1	136.0	152.0	1715.5	18.0	1028.4	4.0	374.3			382.6	4118.2
6.1-Sundry Including maintenance of ITTO																
supply equipment 9.5																
6.2-Pre project Cost 54.3																
63.8											63.8				63.8	
7.1-Monitoring & Evaluation 19.13																
Administrative cost 22.10																
to ITTO Contribution 41.23													41.23		41.23	
Grand Total	123.5	864.0	-	-	85.1	136.0	152.0	1715.5	18.0	1028.4	67.8	374.3	41.23	-	487.63	4118.2

Unit cost for Material project personnel

(Annex:-1)

Activity	Description	Unit/Sets/ lots	Cost per Unit	Amount US\$ (CIF)	Amount Kyats
1.1.1	Consultants	11	\$ 10,000		
	Project Manager	1	\$ 1,500		
1.1.2	Furniture	1			300,000
	Airconditioner	1			150,000
1.1.3	Purchase of training aids				
1	Computer, printer, scanner, software & consumables	3	\$ 2,500	\$ 7,500	
2	T.V Monitor, CP recorder	1	\$ 1,500	\$ 1,500	
3	Vedio camera/ cassettes	1	\$ 2,200	\$ 2,200	
4	Slide projector	2	\$ 1,500	\$ 3,000	
5	Overhead projector & screen	1	\$ 5,500	\$ 5,500	
6	Whiteboard & flip charts	2	\$ 50	\$ 100	
7	Photocopier	1	\$ 2,300	\$ 2,300	
8	Bandsaw stellite tipping (braying) machine	1	\$ 13,000	\$ 13,000	
	Band saw face & back sharpening machine				
	Band saw side grinding machine				
9	Universal tool grinding machine	2	\$ 10,000	\$ 20,000	
10	Power feeders	5	\$ 120	\$ 600	
11	Electronic moisture meter	3	\$ 500	\$ 1,500	
12	Measuring equipment such as laser measuring devices, specially designed calipers, tachometers, ammeters electronic mearing & testing equipment, gauges.	1		\$ 4,000	
13	Pneumatic Control devices for low cost automation (LCA) -valves, pips & fittings pressure cylinders control levers necessary attachments & accessories	1		\$ 14,000	
14	Four side moulder			\$ 47,280	
1.1.4	Purchase books on wood technology & science			\$ 5,000	
	Out Put 1.1, Activity 1.1.3 -1.1.4			127,480	
2.1.1	Purchase technical books, etc. on marketing		\$ 3,000	\$ 3,000	
2.1.2	1. Computer, software, printer & scanner, consumables	1	\$ 2,500	\$ 2,500	
	2. Photocopier	1	\$ 2,300	\$ 2,300	
	3. Computerised projector	1	\$ 5,500	\$ 5,500	
	4. Book binding equipment			\$ 200	
	Out Put 1.2, Activity 2.1.1, 2.1.2			\$ 13,500	
2.2.1	Purchase 2 drawing tables & accessories	2	\$ 500	\$ 1,000	
2.3.2	Offset printing			\$ 10,000	
	Sub Total			\$ 151,980	
				\$ 152,000	

ACTIVITIES & INPUTS

Activities	Inputs
<p><u>Out Put 1.1</u> : To design & plan the training course of furniture manufacturing.</p> <p>Activity 1.1.1</p> <p>Activity 1.1.2</p> <p>Activity 1.1.3</p> <p>Activity 1.1.4</p>	<ul style="list-style-type: none"> - 0.75 m/m consultant 2 travels & tickets. - furnishing the Project Office. - Project Manager 24 m/m and project office staff - project manager & office staff - purchase training aids. - collect training materials. - 18 travels & tickets
<p><u>Out Put 1.2</u> : Implementation of training course.</p> <p>Activity 1.2.1</p> <p>Activity 1.2.2</p> <p>Activity 1.2.3</p> <p>Activity 1.2.4</p>	<ul style="list-style-type: none"> - Senior consultant and project manager - 5.5 m/m consultant. - transportation cost for local survey tour. - 24 travels & tickets. - loading in survey tour - D.A for Survey Tour. - conference hall charges for seminar.
<p><u>Out Put 2.1</u> : Collection of Market Information.</p> <p>Activity 2.1.1</p> <p>Activity 2.1.2</p> <p>Activity 2.1.3</p>	<ul style="list-style-type: none"> - 1 m/m consultant home station. - subscription of periodicals etc. - purchase of equipment. - MIU personal to be provided by M.T.E. - 24 travels & tickets - DSA for survey tour.
<p><u>Out Put 2.2</u> : Research & introduction of new furniture designs.</p> <p>Activity 2.2.1</p> <p>Activity 2.2.2</p> <p>Activity 2.2.3</p> <p>Activity 2.2.4</p>	<ul style="list-style-type: none"> - 2 m/m consultant. - 4 travels & tickets - counterpart to be provided by M.T.E. - purchase of hardware fittings and finishing materials. - consultant & counterparts - Hardware fittings and surface finishings.
<p><u>Out Put 2.3</u> : Dissemination of Market Information.</p> <p>Activity 2.3.1</p> <p>Activity 2.3.2</p> <p>Activity 2.3.3</p> <p>Activity 2.3.4</p>	<ul style="list-style-type: none"> - conference hall charges for seminar. - MIU staff - communication cost. - accommodation and decoration for exhibition.

TERMS OF REFERENCE FOR CONSULTANTS

1. SENIOR CONSULTANT

- TO DESIGN AND PLAN OF THE TRAINING PROGRAMME
- TO DEFINE THE QUALIFICATIONS OF TRAINING CONSULTANTS
- TO IDENTIFY TRAINING AIDS AND MATERIALS REQUIRED FOR THE COURSES
- TO TAKE PART IN SEMINARS AND DISCUSSIONS (IF REQUIRED)
- TO TRAVEL WITH TRAINEES AND GUIDE STUDY TOURS

2. TRAINING CONSULTANTS

- TO SUBMIT TRAINING NOTES ONE MONTH IN ADVANCE FOR TRANSLATION INTO MYANMAR LANGUAGE
- TO CONDUCT LECTURES ON TOPICS CONCERNED
- TO GIVE PRACTICAL DEMONSTRATION IN RESPECTIVE OPERATIONS
- TO TAKE PART IN SEMINARS AND DISCUSSIONS (IF REQUIRED)

3. RESEARCH AND DEVELOPMENT CONSULTANTS

- TO ASSESS EXISTING RANGE OF PRODUCTS
- TO RECOMMEND A RANGE OF NEW PRODUCTS
- TO FABRICATE OF NEW DESIGNS
- TO PREPARE PRODUCTION MANUALS
- TO CONDUCT COURSES ON NEW DESIGNS
- TO GUIDE THE PRODUCTION OF APPROVED DESIGNS
- TO TAKE PART IN SEMINARS AND DISCUSSIONS (IF REQUIRED)