

ITTO PROJECT PD 123/91 REV.2(1)
TRAINING PROGRAMME ON
FURNITURE PRODUCTION MANAGEMENT
at
Skive Technical Institute, Denmark

Project Completion Report

TRAINING PROGRAMME ON FURNITURE PRODUCTION MANAGEMENT
SKIVE TECHNICAL INSTITUTE, DENMARK

1. **INTRODUCTION**

The International Tropical Timber Organisation (ITTO) approved a project on 'Training Programme on Furniture Production' under its project reference PD 123/91 Rev.2(1) following a request made by the Malaysian Timber Industry Board (MTIB). The project involves the participation of managers/supervisors from selected ITTO producing member countries in a one-month training programme on furniture production management at the Skive Technical Institute (STI) in Denmark. The Malaysian Timber Industry Board was chosen as the executing agency for the project. The programme allocated for 14 participants - 3 from Malaysia, 3 from Indonesia and 2 each from India, Philippines, Papua New Guinea and Thailand. Except for India which nominated only one person, the other countries nominated their number of participants. Therefore the total number of participants was 13. The names and addresses of the participants are listed in Appendix I. One MTIB officer was also sent to attend this training programme, with his expenses for course fees and travelling fully borne by MTIB.

The selection of the participants was carried out by the relevant organisations in respective countries. However, each country involved in the programme was informed that the person selected should preferably be working in a furniture mill or attached to a relevant institution responsible for training and transfer of technology activities related to furniture production and quality control.

The objective of the training programme was to promote the transfer of technology on furniture production management to manufacturers in the ITTO producing countries. It is hoped that the participants of this training programme will become skilled managers and

supervisors, thus enabling the producer countries to build a core of trained managers and supervisors, who will be able to apply and transfer such expertise in their respective countries.

2. PROGRAMME ACTIVITIES

The activities of the training programme involved formal lectures, case studies and problem solving. Visits to some furniture mills in Denmark were also included as part of the programme.

The details of the programme are given in Appendix II.

3. PROGRAMME CONTENTS

The programme content was divided into the following four main sections:

(i) Strategic and Tactical Level

The participants were given an understanding on the importance of goal oriented management. The participants were also given an insight into the need for internal systems of communication and various methods involved in problem solving through methods such as the fishbone diagram.

(ii) Production Management

The participants were given an insight into the different levels of management in a furniture manufacturing factory. They were also given some useful pointers on how to carry out the function of a production manager and his role with respect to the other departments in a furniture factory. Factors involved in the planning phase which influence a firm's ability to improve the overall performance were emphasised.

(iii) Quality Control

The importance of a firm's commitment towards quality and the role of a manager to achieve the desired quality and improving quality standards, was emphasised. The financial aspects associated with achieving the required quality were also highlighted.

(iv) Plant Layout

Under this topic the participants were made aware of the importance of the actual positioning of machine in relation to the product to be manufactured. Problems associated with designing the most appropriate plant layout and ways to overcome problems associated with plant layout were discussed.

4. FACTORY VISITS

For the factory visits the participants were accompanied by Mr. Henning Pilgaard and Mr. Kaj Larsen, two course instructors from STI throughout the visits. The participants had the opportunity to visit 9 wood-based factories in Denmark.

(i) Computerization in Production Management Systems

The furniture industries in Denmark started their production in the 1950's. Starting from a traditional way of production, they now use modern systems with a faster operation time. All the factories visited were found to use computer facilities in their daily production management. Using computer systems, items of furniture can be produced for stock or for a specific order. Once the size of a batch has been decided for a specific product, information on the quantity of each type of hardware and fittings, and the quantity of their material

inputs, are fed into the computer. These quantities are compared with the stock on hand to obtain the actual number of parts or components to be produced, and if necessary, a quantified list of materials to be procured is made. Standard production times, standard materials cost, total work-hours required and standard cost of items are obtained as advance information for further planning.

(ii) Modern Machinery and Technology

All the factories visited used a small percentage of simple machines with the rest consisting mostly CNC machines; especially in the boring and routing operations. The furniture factories generally have very good internal transportation systems. All transportation from one operation to another used automatic transportation equipment and roller conveyors.

In terms of surface finishing of furniture, most of the factories were found to be using acid-catalysed and uv-lacquers, and uv-drying systems. In Europe the application of water-based lacquers is becoming popular compared to organic-based lacquers. All the factories visited have good environment for the application of finishing materials. They are dust free, have good ventilation and good lighting facilities. The extraction systems are also well planned and maintained thus creating a clean environment which is one of the important factor attracting workers to wood working factories in Denmark.

All the workers were found to have undergone proper training to acquire the skills required. Institutions, such as STI organise formal training for skilled workers. It was observed that the system of education in Denmark gives more emphasis to practical aspects rather than theory.

(iii) Quality Systems

Furniture factories in Denmark generally have well planned quality management systems.

5. At the end of the training programme a test was conducted to evaluate the performance of the participants. Case studies were chosen as the method for the evaluation. This evaluation method tested the participant's ability to solve some technical problems associated with production management. The performance of the participants was graded into three levels i.e. 'passed with distinction', 'passed' and 'completed the course'. The results of the test are given in Appendix III.

6. **CONCLUSION**

Generally, the participants felt that the training programme has been beneficial to them. Although there are still many elements of production management which they felt that they should learn, the knowledge acquired through this programme was considered important in enabling them to manage a factory properly. The programme has given the participants a good insight into what the furniture manufacturers should do to achieve the product quality standards required in Europe. Apart from providing information and advice on technical requirements, the instructors also stressed the ecological issue related to the use of timber. The instructors felt that this issue must be addressed effectively if producers of tropical hardwood products are to compete effectively in the European market.

7. **RECOMMENDATIONS**

At the end of the course a survey was carried out by STI among the participants. The following recommendations are made based on the

feedback from the participants and observation made during the programme.

(i) Participants' Qualifications in Relation to the Course Content

The qualification and experience of the participants from the various countries was found to be different thus making it very difficult to adhere to the agreed level of the training programme, i.e. the advanced level. Although the proposed level of the training programme was emphasised to the nominating agencies in the different producing member countries, it appears that this requirement has not been given full consideration by some producing members. The presence of participants who do not have the requisite qualifications and experience required a re-adjustment of the programme, therefore depriving the qualified participants, who would have been able to follow the programme at the higher level which was planned. In order to derive maximum benefit from such training programmes in future, it may be necessary to strictly implement the specified conditions among the participating countries in the selection of the participants. The full cooperation of producing members will be necessary for effective implementation of this recommendation.

(ii) Follow-Up Actions With Participants

It is recommended that the relevant nominating agency in the respective ITTO producing member country should take the necessary follow-up action to ensure that the skills and knowledge acquired from this training programme is transferred to the furniture industry within the country, through suitable activities such as courses, talks, advisory or consultancy services. If the participants prove their ability to serve as a member of a core group of managers/supervisors who are able to provide training for other managers/supervisors, these

participants should be given further training and exposure in furniture production management, in order to further enhance their skills and knowledge.

8. ACCOUNT OF EXPENDITURE

The account of expenditure for the project is given in Appendix IV.

9. ACKNOWLEDGEMENT

MTIB wishes to record its appreciation to the International Tropical Timber Organisation (ITTO) for providing the financial support in carrying out this project.

28 September 1992

**TRAINING PROGRAMME ON FURNITURE PRODUCTION MANAGEMENT
10 FEBRUARY – 6 MARCH 1992
SKIVE TECHNICAL INSTITUTE, DENMARK**

LIST OF PARTICIPANTS

NO.	NAME	ADDRESS
1.	Somchai Choomsuwan	Furniture Industry Development Centre (FIDC) Industrial Service Division Department of Industrial Promotion Soi Trimitr, Rama 4 Rd., Klongtoey Bangkok 10110, Thailand Tel: (662) 3810025-32 Fax: (662) 3810757
2.	Thawee Kaewmanee	Furniture Industry Development Centre (FIDC) Industrial Service Division Department of Industrial Promotion Soi Trimitr, Rama 4 Rd., Klongtoey Bangkok 10110, Thailand Tel: (662) 3810025-32 Fax: (662) 3810757
3.	Rogelio Samiley Jr	Mejore Woodwork Inc. E.Rodrigue Jr Ave Ugong Norte Quezon City Philippines Tel: 632-9033 632-9050 632-7093 Fax: 632-7090
4.	Ronaldo T.Cruz	Cruz Wood Ind. Inc Platte St. Riverside Subd. Angeles City Philippines Tel: 90-201-4040 Fax: 45-614986
5.	Steven Philip	Forestry Department Lae Timber Industry Training College P.O. Box 2132 Lae, Morobe Province Papua New Guinea Tel: 421083/424600 Fax: 423586

NO.	NAME	ADDRESS
6.	Tau Au	National Forest Products Co. Pte.Ltd P.O. Box 9212 Hohola Papua New Guinea Tel: 252498/252713 Fax: 252191
7.	Mohammad Firman	Department of Forestry Manggala Wanabakti Building Block 1, Floor 11th Jln. Gatot Subroto Jakarta Indonesia Tel: 021-583033/37 Ext. 380
8.	Eddy Santoso	PT Inhutani I, State Own Company Manggala Wanabakti Block IV, Wing C, Floor 5th Jln Gatot Subroto Jakarta Indonesia Tel: 021-581724/65/78 Fax: 584335 Inhut Jkt Tlx: 45919 waktu jkt
9.	Hindarto Sutarto	PT Hadinata Brothers & Co. Ligna Furniture Jln. Tapos Km. 1 Cibinong Indonesia Tel: 021-8072291/15 Fax: 021-8072261 Tlx: 48195 LIGNA IA
10.	Mohd Soba Hussin	Syarikat Perabot Sri Permai Lot 3049 Kampung Paloh 16040 Palekbang Kelantan Malaysia Tel: 09-790684
11.	Tommy Chai Bui Kiun	Chuan Meng Design & Decor Sdn. Bhd. 74, Central Road East 93300 Kuching Sarawak Malaysia Tel: 082-338202 Fax: 082-248619

NO.	NAME	ADDRESS
12.	Ahmad Lotfi bin Hj. Mohd Salleh	Delima Industries Sdn. Bhd. Pandamaran Industrial Estate 42009 Pelabuhan Kelang Selangor Malaysia Tel: 3687206/7/8 Fax: 03-3681824
13.	Pravinchandra Bachubhai Zinzariya	Prototype Development & Training Centre The National Small Industries Corpn. Ltd. Aji Industrial Estate Bharnagor Road Rajkot 360003 India Tel: 87613 Tlx: 169-258 PCTR
Participant from MTIB		
14.	Mahpar Atan	Malaysian Timber Industry Board 4th floor, Wisma DNP Jalan Ampang P.O. Box 10887 50728 Kuala Lumpur Tel: 03-248233 Fax: 03-2418416

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PROGRAMME DETAILS

1st week (10 - 15 February 1992)

1. Business definition
2. Managing people
3. Management creativity
4. Case studies
5. Factory visits

2nd week (17 - 21 February 1992)

1. Bottle necks in the production
2. Systems of production management
3. Case studies
4. Factory visits

3rd week (24 - 28 February 1992)

1. Quality and quality control
2. Quality management in practice
3. Quality control in wood working industries
4. Quality control in the ASEAN countries
5. Factory visits

4th week (2 - 6 March 1992)

1. Industrial planning
2. Tools for optimizing methods and process in the production
3. Case studies and final evaluation
4. Factory visits

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EVALUATION RESULTS

SOMCHAI CHOOMSUWAN, Thailand	Passed
THAWEE KAEWMANEE, Thailand	Passed
ROGELIO SAMILEY JR, Philippines	Passed with distinction
RONALDO T. CRUZ, Philippines	Passed
STEVEN PHILIP, Papua New Guinea	Passed
TAU AU, Papua New Guinea	Completed Course
MUHAMMAD FIRMAN, Indonesia	Completed Course
EDDY SANTOSO, Indonesia	Passed
HINDARTO SUTARTO, Indonesia	Passed with distinction
MOHD SOBA HUSSEIN, Malaysia	Passed with distinction
TOMMY CHAI BUI KIUN, Malaysia	Passed with distinction
AHMAD LOTFI HJ. MOHD. SALEH, Malaysia	Passed with distinction
PRAVINCHANDRA BACHUBHANI ZINZARIYA, India	Passed
<u>Participant from MTIB</u>	
MAHPAR ATAN, Malaysia	Passed with distinction

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ACCOUNTS OF EXPENDITUREA) Income

Received from ITTO US\$ 138,500
 (Rate 1 US\$ = M\$ 2.737) = M\$ 379.074.50

B) Expenditure

I. Paid to STI Dkr 377,750 = M\$ 179,431.25
 (50% of course fees)
 on 31 Dec 1991
 (Rate 1 Dkr = M\$ 0.4750
 1 M\$ = 2.1052 Dkr)

II. Bank charges for telegraphic transfer = M\$ 25.00

C) Balance of 50%
 paid to STI = Dkr 377,750
 Exchange Rate at
 24 February 1992
 (100 Dkr = M\$ 41.40)
 (1 M\$ = 2.42 Dkr)

D) Discount US 737.70
 (Rate US\$ = M\$ 2.607) = M\$ 1,923.18

Balance to be paid
 to STI Dkr 373,806.07 = M\$ 154,755.71

TOTAL SUM PAID TO STI = M\$ 334,211.91

E) Subsistence allowance for participants
 required to stay in KL on way to Denmark = M\$ 780.00

F) Air Ticket = M\$ 66,093.00

TOTAL EXPENDITURE = M\$ 401,084.96

DEFICIT = M\$ 22,010.46
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