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Second Technical Course on Criteria for the  
Selection of Woodworking Machinery  
Milan, Italy, 8 - 19 May 1978

REPORT  
ON THE SECOND TECHNICAL COURSE \*

by

Heinz Eldag  
Industrial Development Officer  
Agro-Industries Section  
Industrial Operations Division

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id.78-2947

1. Purpose of the mission

A staff member of the Agro-Industries Section/Industrial Operations Division, Mr. H. Eldag, went to Milan to attend and help conduct the entire second UNIDO Technical Course on Criteria for the Selection of Woodworking Machines, which was held in Milan, Italy, from 8 - 19 May 1978.

2. Attendance

UNIDO selected 33 participants to attend the Course. 11 were unable to participate because of late information by UNDP or Alitalia. The arrival of some participants was delayed because of flight arrangements through Alitalia. The participants are listed in Annex I. 6 observers from Ecuador and Egypt participated in different lectures and factory visits.

3. Participants

The group was as homogeneous as that of 1976; most of the participants were of high technical level contributing in the discussions. They tried to receive as much information as possible through the lecturers and/or technicians during industry visits and demonstrations at the fair grounds.

The participant from Brazil did not speak English but Italian. Participants from Latin American countries assisted to overcome translation problems. The French speaking participants from Congo and Ivory Coast were assisted by the secretariat, especially at factory visits.

Taken as a group, the participants of the second course were as mature and eager to learn as much as possible and were glad that they could exchange experience of those from both Latin American and Central American countries as well as from Indonesia and the Philippines.

The opinion that running a Course in connexion with a specialized exhibition is the right methodology for transfer of technology was expressed by participants and it was also suggested to organize a similar course in Latin America, provided an appropriate fair could be identified.

It was also expressed that UNIDO should repeat this course every second year - next in 1980 - in connexion with the Seventh INTERBIMALL/

#### 4. Programme of the Course

The programme of the Course is given in Annex II. Due to the delayed arrival of some participants it was decided to start the Course on Tuesday, May 9, 1978. It consisted of 17 lectures, 4 film shows, 6 factory visits and machinery exhibition visits in connexion with the seven subjects of assignment work.

The lectures were all of an appropriate standard. Slides, pictures and graphs shown with the lecturers yet not included in the text handed out should be included in the final print of the documents as a UNIDO publication. Most of the lectures had to be corrected because of translation errors in the technical terms. As the documentation had not been submitted to UNIDO in time it was impossible to clarify with the lecturers misunderstandings before the Course.

The lecturers presented the subjects in Italian or French, which was simultaneously translated into English, French and Italian. Some participants claimed that the simultaneous translation was of average quality only which caused difficulties in understanding during discussions. It must, however, be realized that the discussions were highly technical.

The films were obtained by the Course Director and shown to participants to complement the lectures given.

The first film included different possibilities of applying panel sizing and sub-dividing saws according to appropriate production standards.

The second film included the various automated equipment used in a higher level of the wood processing industry.

The third film showed a high level production line for the manufacture of case good furniture according to the V-fold system.

The fourth film included plywood, particleboard and board laminating production.

Factory visits were very well selected. Participants could find out that log break down of European deciduous as well as tropical wood species differ from log conversion practices in developing countries.

The plywood plant demonstrated that conditions of peeling poplar small log diameters is an operation which cannot be compared with peeling of tropical wood species. Nevertheless, the insight of such a factory caused much interest and released many discussions to compare certain common problems.

The visits of the two particle board factories with board laminating plants rendered possible to see two different mat forming systems in board production and the possibilities of board lamination with coloured or grain designs.

The door and window manufacturing plant with its production facilities and efficiency drew much interest because of the size of the factory which is appropriate to many requirements of developing countries. Most of the participants saw for the first time a window testing stand to check the impermeability to wind, pouring rain and dripping rain in a factory. It was stated that even the small industry has to follow the building regulations.

Casegood furniture production was demonstrated in a modern factory with linked production lines in machining the panel components and in lacquer coating. The production facilities are, in most cases too advanced for developing countries but the way this company standardized furniture parts to build up a modular component system raised many questions among the participants.

##### 5. Assignment Work

At the beginning of the Course the participants were requested to indicate their interest in different fields of the assignment work programme (Annex III). The seven groups are listed in Annex IV.

The first group based their work on the provisional plan for the Olancho Forest Reserve, with a large sawmill at Bonito Oriental, Honduras. It was not easy for the group to collect fully sufficient technical information at the exhibition since some machines could not really be compared with the equipment requested. But the outlined material at the presentation showed an efficient work for the assignment field group.

The second group decided to study the plywood project prepared for Bangladesh to be realized in the near future. The project was outlined for a capacity of 10.000 m<sup>3</sup> plywood with a log input of 25.000 m<sup>3</sup>/year,

estimated total equipment costs: 3 million US\$ CIF Asian port.

The third group based their work on the figures given in the assignment proposal for 150 doors/day, with a comparison for a capacity of 50 doors/day. The group based the production on paper honey comb cores but considered also the possibility of other hollow core systems using the production's waste material.

The fourth group prepared the production of louver shutters for doors and windows. Because of language problems they had difficulties in discussions but collected the appropriate material on which the best production facilities available were then discussed.

The fifth group based their work on kitchen cabinet units of wooden frames with ply panels and laminated particle board. Dimensions of wall, floor and sink units were taken from those of a leading British manufacturer.

The sixth group dealt with the production of solid wooden furniture consisting of one wide desk for two pupils' chairs. Production facilities selected were appropriate to conditions in developing countries.

The seventh group presented chair production for KD chairs as well as steam bent chairs according to the production knowledge of the facilities and manufacturing methods at present applied in Egypt.

The level of presenting the assignment work was very different but due to the group assembly those with a lower field experience could increase their knowledge through team work. The presentation of teams No. 1,2,3 was good, No.5,6,7 could be considered adequate while No. 4 was below expectation.

#### 6. Documentation

The participants were given the revised and printed text of 17 lectures of about 470 pages in English and French. (Annex V and VI). Some documents had to be revised and corrected during the course for final print. Not all participants could prepare a country paper because of late information about their nomination. Those who prepared the country paper in Spanish were requested to send an English translation for reproduction as UNIDO Document.

UNIDO's guides to sources of information (UNIDO/LIB./SER.D/4 Revision 1, D/4,6,9 and 18), a study on production of wooden houses (ID/61), one on low

cost automation for the furniture and joinery industry (ID/154), reports of UNIDO meetings, viz: Technical meeting on selection of woodworking machinery (ID/133), Workshop on wood processing for developing countries (ID/180), and Workshop on adhesives used in the wood processing industries (ID/WG.248/17), were given to the participants at the time of the Course. Some of them requested documents dealing with subjects related to the furniture industry to be sent to them from Vienna.

#### 7. Administrative Matters

The project proposal has been submitted by the Agro-Industries Section on December 2, 1977. Due to the revision of budget figures the submission to the Programming Committee was delayed and could not be approved before January 31, 1978 (instead of December 1977).

The Italian authorities stated on February 10, 1978 the budget changes they wished to see included but did not really confirm the course in its final proposal.

Nevertheless, the Training Section sent out a first cable information to Resident Representatives on 20 February followed by invitations to all countries on March 3, 1978 (instead of 15 January as foreseen). Due to this delay the nominations were not received before April 5, 1978. A cabled reminder at that time rendered possible to receive cable nominations between April 15 and 28. On May 3, Alitalia informed UNIDO that it had been requested to issue tickets at a reduced rate. Because of this delay some tickets could not have been issued before Monday, 8 May. The Alitalia flights limited to certain routes caused travel delays for participants and did not allow the course participants to return at the planned day of departure.

#### Submission of translated manuscripts:

A considerable delay occurred here. It was foreseen that the English translation of the manuscripts would be submitted by December 1977. On January 5, 6 documents (English-French), February 7, 8 documents (6 English, 5 French), March 14, 5 documents (4 English, 5 French). The last lecture was received on April 12 (English and French). Final editing could not be done before all documents were submitted because of cross checking the contents and references to other documentation. This could not be done before

April 5, 1978. Besides editing the translations had to be corrected because of the technical nature of the papers. Some lectures were so badly prepared that it was difficult to find legends for pictures and graphs.

Because of late printing the text of the lectures they could not be shipped in time to the participants selected. Consequently the lecturers had to present the lectures more in a detailed way than anticipated so that less time was available for discussions. However, this did not adversely affect the Course. All documents in English and French were transported by private car to Milan.

UNIDO paid US\$ 49 (Lit. 41.650) deducted by US\$ 30 (Lit. 25.650) to pay for hotel accommodation and US\$ 18.85 (Lit. 16.000) to cover lunch, dinner and other out-of-pocket expenses (Annex VII).

The financing of the Course was secured from UNIDO Trust Funds. The scheduled budget was fixed with US\$ 94.000. A reduction was requested by the Italian authorities for the following items:

Excess baggage:	US\$ 3.000
Simultaneous interpretation:	US\$ 4.700 "to be reduced"
Transportation of Documents:	US\$ 450
Course Director:	US\$ 1.000
Travel of second UNIDO staff member:	US\$ 950

The grand total was then fixed at US\$ 86.250. This amount will be further reduced since only 22 fellows participated.

The participants complained that they did not receive MCO (misc.charges order) for 10 kg excess baggage for the return flight together with their ticket. When the Italian authorities deleted the amount of excess baggage it was decided to mail the documents and the collected material by diplomatic pouch. It will now be mailed from Vienna.

### 8. Press Coverage

The Fair authorities of INTERBIMALL 78 issued two press releases (Annexes VIII and IX) about the Second Technical Course on Criteria in the Selection of Woodworking Machines to the different technical magazines in Europe. During the course a TV-interview was given in English by the author with consecutive translation into Italian.



9. Evaluation of the Course

During the course and during travel time to factory visits the author asked the participants about their impressions on this course especially in convening the course in connexion with the exhibition.

Participants expressed their opinions due to their positions in the industry as follows:

- a) it is necessary to keep close contacts to UNIDO Headquarters in future to receive information about workshops, seminars and similar activities;
- b) it is necessary to attend specialized exhibitions continuously to be informed about developments;
- c) whenever possible participants will assist in nominating experts for courses carried out by UNIDO;
- d) a seminar in connexion with a specialized fair is one of the best solutions in:
  - observing development trends;
  - transfer of technology;
  - experience exchange between participants of developing countries;
  - lower and higher professional level of participants can be balanced during assignment team work;
- e) if possible UNIDO should arrange seminars and workshops in appropriate places in developing countries;
- f) if workshops or seminars could be held in developing countries, UNIDO staff members should arrange "contact-discussions" in neighbouring countries to and from the seminar's meeting place.

The factory visits were better selected than at the Course in 1976 but it still seems that the gap between developing and developed countries in secondary wood processing is on the average very large. Therefore lecturers should base their work really on "intermediate technology" in woodworking and should also include examples appropriate for developing countries.

Many lecture subjects could include alternative solutions on a lower, intermediate and higher industrial level covering the needs derived from using tropical wood species.

Some participants claimed not having sufficient time to study the exhibition in detail. It might be worthwhile in future to give an ad hoc advice on some particularly relevant exhibits and equipment which will be demonstrated in operation for further discussions on the exhibit spot.

The programme of sight seeing was well organized, however, due to the delayed arrivals only 6 fellows could participate.

It appears from answers about the course and its programme that the possibility of participants staying on at their own expense for personal reasons should be drawn to their attention at the time tickets are issued.

#### 10. Acknowledgement

INTERBIMALL gave each participant a commemorative medal.

The author wishes to express his gratitude to Professor Guglielmo Giurdano, Seminar Director, Dr. Adriano Ribera, Director of INTERBIMALL, Miss Margherita Vaccani, Seminar Assistant and Interpreter, Miss Alessandra Campisi, Interpreter, for all assistance given during the Course and the great pains they went through to assure its success as well as to all the members of ACIMALL and INTERBIMALL related with the preparatory work during the last year. Lecturers, Plant Manager - who opened their doors to participants, answered numerous questions and provided excellent hospitality - who are too numerous to be listed individually, must find in these lines his thanks for the considerable time and efforts they contributed to assure the Course's success.

LIST OF PARTICIPANTS

<u>NAME</u>	<u>FUNCTION</u>	<u>MAILING ADDRESS</u>
Mr. Pedro A. PALOMINO AVILES	Project Engineer	INDUPERU Calle 7, 229 La Molina, Lima Peru
Mr. Luis Carlos BARBOTTO M.	President Industria Madereras	Apartado Aereo 2054 Medellin Colombia
Mr. Philip Abdel Messih BASSILY	Production Engineer Egyptian Woodworking Co. WOODCO	5, Talaat Harb Street Cairo Egypt
Mr. Jacobus BUDIARTO	General Manager P.T.Furindo Kenoana Ltd.	32, Jl.Gondangdia Lama Jakarta Indonesia
Mr. Basri CALIS	Manager Forest Industries General Directorate Planning Department	Orus Genel Müdürlüğü Atatürk Bul. 115/8 Ankara Turkey
Mr. Teo Lye HOCK	Senior Supervisor METRAWOOD	179 River Valley Road Singapore 6
Mr. Ahsanul HAQUE	Project Manager Bangladesh Forest Ind. Development Corporation (BFIDC)	186 Circular Road Motijhell/Dacca Bangladesh
Mr. Angelo INNOCENZI	General Manager Puertas y Ventanas de Costa Rica S.A.	Apartado 7-1730 San José Costa Rica
Mr. Waliul ISLAM	Chief Engineer Bangladesh Forest Ind. Development Corp. (BFIDC)	186 Circular Road Motijhell/Dacca
Mr. Edward Boateng KARKARI	Timber Production and Marketing Consultant G.T.M.B.	Box 515 Takoradi Ghana
Mr. Mohamed Salem Abdel KHALEX	Production Manager Egyptian Woodworking Co. WOODCO	5 Talaat Harb Street Cairo Egypt

<u>NAME</u>	<u>FUNCTION</u>	<u>MAILING ADDRESS</u>
Mr. Prapat KHONGKHAKUL	Assistant Manager Mai Thai Sawmill Forest Industry Organization	Rajdamnern Nok Avenue Bangkok Thailand
Mr. Orazio AMPRIMO LAING	Managing Director ADCOSA Empresa Maderera Sullana S.A.	Av.Nicolas Duenas 480 Apartado 4352 Lima 100 Peru
Mr. Santiago E. LIWANAG	Project Co-ordinator Presidential Committee on Wood Industries Development P.C.W.I.D.	Rosario Building 10 Scout Chuatocho St., Roxas District Quezon City Philippines
Mr. Carlos F.LUNDBLAD BRIEDE	Technical Sales Manager Industrial Maderera Klingenberg S.A.	Avenida Fermin Vivanoeta No. 957 Santiago Chile
Mr.Alphonse MASSAMBA HEMI	Ingenieur Wood Technology SONATRAE	Pointe-Noire B.P. 740 Congo
Mr. Bautista MURILLO	President Sociedad Maderera de Cartago	P.O.Box 176 Cartago Costa Rica
Mr. Ekpo NIAI/KE	Expert O.P.E.I.	B.P. 8868 Abidjan Ivory Coast
Mr. Gilberto POZZA	Product Engineer Pozza Moveis S.A.	R.Floravante Pozza- 230/1 95.700 Bento Goncalves RS-Brazil
Mr. Raul SAMAYOA	Ingenieur Corporacion Forestal Industrial de Olancho S.A. CORFINO	Apartado Postal 1613 Tegucigalpa, D.C. Honduras, C.A.
Mr. Anwar TAMIN	Expert Investment-Co-ordinating Board	6 Jalan Jendral Gatot Subroto Jakarta Indonesia
Mr. Eddy Hadi WALUYO	Production Manager P.T.Inti Djati	Jl.Dr.Abdurrachman Salch No. 4 Bandung Indonesia

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REFERENCE:

CHANGE OF PROGRAMME

2ND TECHNICAL COURSE ON THE CRITERIA FOR THE  
SELECTION OF WOODWORKING MACHINES

Milan, Italy, 8 - 19 May 1978

PROGRAMME OF WORK

Monday, 8 May 1978

- 10.00 - Registration of participants
- 12.00 - Lunch
- 14.00 - Visit of Scala Theatre and Museums and visit of  
the Scala Exhibition at Palazzo Reale

Tuesday, 9 May 1978

- 9.30 - Opening Ceremony  
Welcoming addresses by:
  - Comm. Giuseppe Rosverde - Director of FIERA di Milano
  - Dr. Adriano Ribera, Director of the INTERBIMALL
  - UNIDO
  - Prof. G. Giordano, Director of the Course
- 10.30 - Lecture: Mechanization of Forest Operations by  
Mr. Marco Caselli
- 11.30 - Lecture: Selection of Forestry Equipment by  
Mr. X. De Megille
- 13.00 - Lunch
- 14.30 - Lecture: Selection of sawmilling Equipment by  
Mr. Giuseppe Dalla Valle
- 16.00 - Lecture: Tools for Machining Wood by  
Mr. Gianfranco Melloni
- 17.30 - Films: Giben - sizing saws for panels  
Gabiani - production line equipment

Wednesday, 10 May 1978

- 9.00 - Lecture: Wood Characteristics influencing the selection of Equipment and Machining Operations by Mr. Guglielmo Giordano
- Lecture: Kiln drying of Sawn Lumber by Mr. Rodolfo Cividini
- 14.30 - Visit to sawmill - Basso Legnami SpA., Gattinara
- 19.15 - Dinner offered by ACIMALL/INTERBIMALL (Aerhotel)

Thursday, 11 May 1978

- 9.00 - Introduction to FAO Work on small-scale wood based Panel Plants for developing Countries by Mr. Heinz Eldag
- 9.30 - Lecture: Wood based Panels: General Considerations and Guide for Plant Implementation, Selection of Machines and Equipment by Mr. Mario Bermani
- 14.30 - Lecture: Machines for Parquetry - by Mr. Giampaolo Gazzotti

Friday, 12 May 1978

- 9.00 - Lecture: Production Lines for the Manufacture of Plywood and Veneer by Mr. Ezio Mabini
- Lecture: Criteria for the Selection of Machinery for sliced Veneer by Mr. Aristide Colombo
- 14.30 - Visit to a factory for the production of plywood and sliced veneer Attilio Brivio + Fiflio SpA., Pavia

Saturday, 13 May 1978

- 9.00 - Lecture: Materials for surface finishing and Appropriate Lacquer Coating Equipment by Mr. Gian Domenico Beccaria
- Lecture: Power Supply and Maintenance Systems in Wood Processing Industries by Mr. Albert Mottadelli
- Allocation of assignments to the participants
- 14.30 - Official visit to INTERBIMALL

Sunday, 14 May 1978

f r e e (Visit to INTERBIMALL)

Monday, 15 May 1978

- 9.00 - Lecture: General Criteria for the Selection of Machines by Mr. Gian Luigi Della Torre

Lecture: Panel Surface Improvement and Selection of appropriate Equipment by Mr. Tadeo Slodyk

- 14.30 - Visit to factories for particle board production and surface lamination:  
1. EPOCA, S.A.C.I.C. SpA., Mortara  
2. ILCA, Vercelli

Tuesday, 16 May 1978

- 9.00 - Lecture: Production of Doors, Windows and Frames by Mr. Enrico Minarelli  
14.30 - Visit to a factory for door and window production: Dolcini, Codogno

Wednesday, 17 May 1978

- 9.00 - Lecture: Production of Chairs and similar Items of Solid Wood by Mr. Angelo Speranza  
Lecture: Technology and Machinery for the Production of Case Good Furniture by Mr. Aldo Schiavo  
11.00 - Film: Pritelli, folding system Equipment  
14.30 - Visit to furniture factory Mobili FEG S.a.S. Giussano

Thursday, 18 May 1978

- 9.00 - Film: Pagnoni, Plywood - Particle board - Board Lamination Production  
10.00 - Free visit to INTERBIMALL  
14.30 - Discussion on assignments

Friday, 19 May 1978

- 9.00 - Discussion on assignments  
14.30 - Discussion on assignments  
16.00 - Closing addresses by:  
- President of Milan Fair  
- Director of INTERBIMALL  
- Closing of Course  
20.00 - Cocktail offered by UNIDO

Saturday, 20 May 1978

Departure of participants

TECHNICAL COURSE ON CRITERIA FOR THE  
SELECTION OF WOODWORKING MACHINES

Milan, Italy, 8 - 19 May 1978

NOTE TO THE PARTICIPANTS

Assignment Work

Objectives

The organizers of the course attach great importance to this component of the programme. They feel that through the preparation and presentation of assignment work the participants will be able to better benefit of the course since they will participate, in small groups, in the solution of problems according to conditions prevailing in their own countries. Such work will also facilitate the exchange of views and experiences between the participants.

Methodology

Early in the course participants will be asked to indicate their interest in at least two and not more than four of the following topics:

1. Selection of equipment for sawmills;
2. Selection of equipment for plywood and veneer production;
3. Selection of equipment for the production of flush doors;
4. Selection of equipment for the production of louvered windows;
5. Selection of equipment for the production of kitchen furniture;
6. Selection of equipment for the production of solid wood school desks;
7. Selection of equipment for the production of upholstered chairs.

..... Details of the technical specifications of each product are attached.

Groups will be formed and group leaders nominated. On the last two days of the Technical Course each group will be given two hours to present its work. They will be requested to determine the type of equipment they recommend for the production process, prepare a layout of the machines they have selected and then explain in detail the criteria they have adopted to select each and every item of equipment.

Participants will have to visit the INTERBIMALL exhibition to obtain technical and economic data on the various types of machines available on the market.



Mr. H. Eldag of UNIDO will be available throughout the duration of the course to guide the groups in their work. They will also have the possibility of discussing technical problems with the various lecturers.

In presenting their group's work, group leaders are encouraged to make full use of the audio-visual material.

Technical Specifications and Capacities of the products for the assignment work.

Topic 1: Selection of equipment for sawmills

Prepare a layout and select equipment for a sawmill to saw tropical sawlogs with the following specifications:

Annual capacity: 10.000 m<sup>3</sup> logs  
Length of logs: max. 6 meters  
min. 2 meters  
Diameter of logs: maximum 120 cm  
average 80 cm

Specification of end product: standard sizes required by the European market.

25 per cent of the production is to be kiln dried to 12 per cent m.c. Emphasis should be placed on achieving a high yield and utilizing wastes.

Tentative cost of equipment US\$ 80.000.

Topic 2: Selection of equipment for plywood and veneer production.

Prepare a layout and select equipment for a plywood and sliced veneer plant with the following specifications.

Annual capacity: 10.000 m<sup>3</sup> plywood sheets 4' x 8' 4 to 12mm thick,  
average thickness 6 mm  
of which 2000 m<sup>3</sup> 4' x 8' x 4mm with sliced veneer faces plys 1000.000 m<sup>2</sup>  
sliced veneer up to 3m long and 0.6 to 0.8mm thick.

Tentative cost of equipment US\$ 150.000.

Topic 3: Selection of equipment for the production of flush doors.

Prepare a layout and select equipment for plants to produce  
(a) 50 flush doors per day using simple technology, and (b) 150 flush doors per day using a more advanced technology; using air dried sawnwood.

The doors are to have wooden strip cores and plywood faces.

Tentative cost of equipment US\$ 50.000 for alternative (a) and US\$ 250.000 for alternative (b).

Topic 4: Selection of equipment for the production of louvered windows.

Prepare a layout and select equipment for plants to produce  
(a) 50 louvered windows per day using simple technology, and (b) 150 louvered windows per day using a more advanced technology; using air dried sawnwood. Drawings of these windows will be supplied.

Tentative cost of equipment: US\$ 40.000 for alternative (a) and US\$ 100.000 for alternative (b).

Topic 5: Selection of equipment for the production of kitchen furniture.

Prepare a layout and select equipment for a plant to produce modular knock-down kitchen furniture from wood based panels surfaced with plastic laminates.

Capacity: 10.000 m2 (door area) per year

Tentative cost of equipment US\$ 25.000.

Topic 6: Selection of equipment for the production of solid wood school desks

Prepare a layout and select equipment for a plant to produce 20.000 school desks and 40.000 chairs per annum.

(A photo of the end product will be provided). The plant is to use air dried tropical hardwoods and labour intensive methods, if applicable, are to be preferred.

Tentative cost of equipment: US\$ 50.000.

Topic 7: Selection of equipment for the production of upholstered chairs.

Prepare a layout and select equipment for a plant to produce 10.000 chairs per annum. These are to have upholstered seat and back rests, on bent plywood cores and solid wood elements, laminated if necessary, but not bent. (A photo of the end product will be provided).

Tentative cost of the equipment US\$ 50.000.

ASSIGNMENT WORK GROUPS

- 1 Group - Sawmill Equipment + Appropriate Kiln Drying Equipment  
Orlando Samayoa GL\*  
Basri Calis, Prapat Khongkhakul, Pedro Palomino, Alphonse Massamba,  
Bautista Murillo, Carlos Lundblad, Eduard Karkari, Santiago Viwanag
- 2 Group - Plywood and Veneer Equipment  
Basri Calis GL\*  
Prapat Khongkhakul, Waliul Islam, Ahsanul Haugue, Alphonse Massamba,  
Anwar Tamin
- 3 Group - Flush Door Equipment and Appropriate Kiln Drying Equipment  
Angelo Innocenzi GL\*  
Carlos Lundblad, Basri Calis, Eddy Waluyo, Bautista Murillo,  
Ekpo Nianke, Horazio Amprimo
- 4 Group - Louver Shutters for Doors and Windows  
Horazio Amprimo GL\*  
Pedro Palomino, Carlos Lundblad, Eduard Karkari, Angelo Innocenzi
- 5 Group - Kitchen Cabinet Manufacturing Equipment  
Gilberto Pozza GL\*  
Carlos Barbotto, Eduard Karkari, Jacob Budianto, Abdel Bassili,  
Abdel M. Salem
- 6 Group - School Furniture Manufacturing Equipment  
Eddy Waluyo GL\*  
Teo Hook, Eduard Karkari
- 7 Group - Chair Production Equipment  
Teo Hook GL\*  
Abdel Bassili, Abdel M. Salem, Santiago Liwanag

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\* Group Leader

Title	Author	No. Pages	Language
1. Selection of Forestry Equipment	Mr. X. de Megille	21	E, F
2. Mechanization of Forest Operations	Mr. Marco Caselli	25	E, F,
3. Selection of Sawmilling Equipment	Mr. Giuseppe Dalla Valle	30	E, F,
4. Tools for Machining Wood	Mr. Gianfranco Melloni	40	E, F,
5. Wood Characteristics influencing the selection of Equipment and Machining Operations	Mr. Guglielmo Giordano	10	E, F,
6. Kiln drying of sawn lumber	Mr. Rodolfo Cividini	30	E, F,
7. Wood based panels: General Considerations and Guide for plant implementation, selection of machines and equipment	Mr. Mario Bernani	50	E, F,
8. Panel Surface Improvement and selection of appropriate Equipment	Mr. Tadeo Slodyk	25	E, F,
9. General Criteria for the Selection of Machines	Mr. Gian Luigi Della Torre	20	E, F,
10. Materials for surface finishing and appropriate lacquer coating Equipment	Mr. Giandomenico Reccaria	50	E, F,
11. Power Supply and Maintenance Systems in Woodprocessing Industries	Mr. Alberto Mottadelli	30	E, F,
12. Production lines for the manufacture of plywood and veneer	Mr. Enzo Mabini	40	E, F,
13. Criteria for the selection of machinery for sliced veneer	Mr. Aristide Colombe	20	E, F,
14. Production of doors, windows and frames	Mr. Enrico Minarelli	25	E, F,
15. Production of chairs and similar items of solid wood	Mr. Angelo Speranza	20	E, F,
16. Technology and machinery for the production of case good furniture	Mr. Aldo Schiavo	30	E, F,
17. Machines for Parquetry	Mr. Giampaolo Gazzotti	10	E, F,

LECTURERS

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Marco CASELLI  
c/o Fiat-Allis  
Viale Torino 2  
10040 - STUPINIGI / Torino

Prof. Rodolfo CIVIDINI  
Istituto Nazionale del Legno  
38010 - SAN MICHELE ALL'ADIGE

Ing. Aristide COLOMBO  
c/o Colombo & Cremona  
Via Confalonieri 57  
20058 - VILLASANTA / Milano

Giuseppe DALLA VALLE  
c/o Primultini S.n.c.  
Via G. Marconi 50  
36035 - MARANO VICENTINO / Vicenza

Ing. Gian Luigi DELLA TORRE  
Via Montevideo 10  
20122 - MILANO

Prof. Xavier DE MEGILLE  
11, Place de la Madeleine  
PARIS / France

Dr. Giampaolo GAZZOTTI  
c/o Leonello Gazzotti F.P. S.p.A.  
Via F. Fuga 1/b  
00196 - ROMA

Prof. Dr. Ing. Guglielmo GIORDANO  
Via Ghibellina 73  
50122 - FIRENZE

Ing. Ezio MABINI  
c/o A. Cremona & Figlio  
Viale Lombardia 275  
20052 MONZA / Milano

Gianfranco MELLONI  
Via G. Reni 27  
35100 - PADOVA

Dr. Enrico MINARELLI  
c/o Sascom S.A.  
47031 DOGANA - R.S.M.

Ing. Alberto MOTTARELLI  
Via Stefano da Seregno 31  
20038 SEREGNO / Milano

Ing. Aldo SCHIAVO  
c/o Ucoi  
Calmaggiore 10  
31100 - TREVISO

Dr. Tadeo SLODYK  
c/o F.lli Pagnoni  
Via Sempione 31  
20052 - MONZA / Milano

Dr. Ing. Angelo SPERANZA  
c/o C.A.T.A.S.  
Via delle Scuole  
33048 SAN GIOVANNI AL NATISONE / Udine

COST SHARE OF PER DIEM

16.000 Lit. cash daily + 2 travel days. Hotel accomodation paid by Acimall.

		Total	Lit.	US\$
WALIUL ISLAM	12 + 2 + 2 = 16		304.000.-	353,-
AHSANUL HAUQUE	12 + 2 = 14	"	224.000.-	260,-
POZZA GILBERTO	13 + 2 = 15	"	240.000.-	279,-
LUNDBLAD BRIEDE CARLOS	12 + 2 = 14	"	224.000.-	260,-
MURILLO BAUTISTA	11 + 2 = 13	"	208.000.-	242,-
INNOCENZI ANGELO	12 + 2 = 14	"	224.000.-	260,-
SAMAYOA RAUL ORLANDO	13 + 2 = 15	"	240.000.-	279,-
HOCK TEO LYE	13 + 2 = 15	"	240.000.-	279,-
CALIS BASRI	13 + 2 = 15	"	240.000.-	279,-
PALOMINO PEDRO	13 + 2 = 15	"	240.000.-	279,-
PRAPAT KHONGKHAKUL	11 + 2 = 13	"	208.000.-	242,-
NIAMKE EKPO	11 + 2 = 13	"	208.000.-	242,-
MASSAMBA ALPHONSE	10 + 2 = 12	"	192.000.-	223,-
AMPRIMO ORAZIO	10 + 2 = 12	"	192.000.-	223,-
BARBOTTO CARLOS	10 + 2 = 12	"	192.000.-	223,-
BUDIARTO JACOUB	10 + 2 = 12	"	192.000.-	223,-
WALUYO EDDY HADI	10 + 2 = 12	"	192.000.-	223,-
TAMIN ANWAR	10 + 2 = 12	"	192.000.-	223,-
KARKARI E.B.	11 + 2 = 13	"	208.000.-	242,-
ABDEL KHALEK MOHAMED SALEM	8 + 2 = 10	"	160.000.-	186,-
ABDEL MESSIN BASSILI	8 + 2 = 10	"	160.000.-	196,-
LIWANAG SANTIAGO	7 + 2 = 9	"	144.000.-	167,-
			<u>4.624.000,-</u>	<u>5383,-</u>



ufficio stampa

# interbimall'78

6° SALONE INTERNAZIONALE MACCHINE DEL LEGNO  
13-20 maggio 1978

## PRESS RELEASE

### SECOND UNIDO COURSE ON THE CRITERIA OF WOODWORKING MACHINERY CHOISE AT "PALAZZO AFRICA", MILAN FAIR, FROM MAY 8 TO MAY 19, 1978 - 30 EXPERTS FROM DEVELOPING COUNTRIES WILL PARTICIPATE IN THE EVENT

Prof. Guglielmo Giordano will coordinate the Second UNIDO Technical Course, which will take place at "Palazzo Africa", Milan Fair from the 8th to the 19th of May 1978 (along with the 6th edition of INTERBIMALL, from May 13 to May 20, 1978).

The Course, promoted by UNIDO ( United Nations Industrial Development Organization) with the help of the Italian Government, and organized by INTERBIMALL '78, will be attended by about 30 qualified participants from developing countries.

This is a very suitable opportunity for promoting Italian exports in this sector.

In 1977 (End of November) export reached 152 billion Lira as against 108 billion in the same period of 1976 (respectively 44,380 and 35,241 tons) 124 Billion Lira were the level of exports in 1976 ( 39,777 tons) A good share of Italian exports is directed to developing countries that show a continuous demand and therefore our producers (470 Italian firms) will have the possibility of contacting new interesting prospective customers, at INTERBIMALL '78.

The Course shall include 19 lectures. Official speeches will be held by representatives of UNIDO, FEDERLEGNO (Italian Federation of Wood Industries) and FEDERCOMLEGNO (Italian Federation of Wood Traders). Prof. Giordano will introduce the Course and Dr. Ribera, Secretary General of INTERBIMALL will speak about " Italian Woodworking Machinery Industries".

Topics discussed will include the choise of forest machinery, mechaniza tion of forest work, timber drying, timber panels, machinery for the production of wood floorings, lines for plywood, veneers, panels, produc tion of door frames, windows and general framings, production of chairs and its methods, machinery for furniture production. Rapporteurs will be: De Megille, Caselli, Dalla Valle, Melloni, Cividini, Bermani, Gazzotti, Mabini, Colombo, Beccaria, Mottadelli, Slodyk, Della Torre, Minarelli, Speranza, Schiavo.

FZ/GMB/ 300478/US)

6 ème BIENNALE  
INTERNATIONALE  
DES MACHINES  
A BOIS  
13/20 Mai 1978  
Foire de Milan

6th INTERNATIONAL  
BIENNIAL EXHIBITION  
FOR WOODWORKING  
MACHINERY  
13th/20th May 1978  
Milan Fair

6. INTERNATIONALE ZWEI-  
JAHRESAUSSTELLUNG  
FUER HOLZBEARBEITUNGS-  
MASCHINEN  
13./20. Mai 1978  
Mailänder Messengelände

6. FERIA  
INTERNACIONAL BIENAL  
DE MAQUINARIA  
PARA LA MADERA  
13/20 Mayo 1978  
Feria de Milan





# interbimall'78

6° SALONE INTERNAZIONALE MACCHINE DEL LEGNO  
13-20 maggio 1978

ufficio stampa

## PRESS RELEASE

FOR THE SECOND TIME UNDER UNIDO SPONSORSHIP EXPERTS FROM 30 EMERGING COUNTRIES DISCUSS CRITERIA FOR WOODWORKING MACHINERY SELECTION - SECOND UNIDO COURSE ORGANIZED BY INTERBIMALL '78 IN MAY IN MILAN - TECHNICAL COORDINATOR PROF. GIORDANO - FAVOURABLE OPPORTUNITY FOR ITALIAN MACHINERY PRODUCERS

From the 8th to the 19th of May 1978, along with INTERBIMALL '78 (May 13--20) the Second Technical Course on Criteria for Woodworking Machinery Selection sponsored by UNIDO (United Nations Industrial Development Organization) will take place at Palazzo Africa, Milan Fair. The Course will be directed again by Prof. G. Giordano, professor of timber and wood technology at the University of Florence; Dr. A. Ribera will be the Secretary.

The choice of Italy as guest country for the second time running stresses the valid organization, the credibility of our production structures at international level and the high level of medium and small machines, that are sophisticated but also simple and easy to operate and thus are particularly suitable for countries entering their first stage industrialization.

About 30 experts, out of 50 candidates from emerging countries, will be selected in Vienna, at the end of March, to include entrepreneurs, technical managers, production managers directly entrusted with the selection of machines and public officials responsible for letters of intent or import licenses.

The aim of this Course - so the Secretary Dr. Ribera said - is to promote the discussion of all problems connected with woodworking machinery, including timber technology, structure of firms, labour force, production, marketing, engineering, etc.

This Seminar will also be a favourable opportunity to expand sales of woodworking machinery through direct negotiations, to promote cooperation and exchange of information with businessmen from emerging countries and to offer them the possibility to compare technologies and know-hows of Italian and foreign productions.

ZF/GB/140378/US

6<sup>ème</sup> BIENNALE  
INTERNATIONALE  
DES MACHINES  
A BOIS  
13/20 Mai 1978  
Foire de Milan

6th INTERNATIONAL  
BIENNIAL EXHIBITION  
FOR WOODWORKING  
MACHINERY  
13th/20th May 1978  
Milan Fair

6. INTERNATIONALE ZWEI-  
JAHRESAUSSTELLUNG  
FÜR HOLZBEARBEITUNGS-  
MASCHINEN  
13./20. Mai 1978  
Mailänder Messengelände

6. FERIA  
INTERNACIONAL BIENAL  
DE MAQUINARIA  
PARA LA MADERA  
13/20 Mayo 1978  
Feria de Milan

REVISED BUDGET AT THE END OF THE  
COURSE

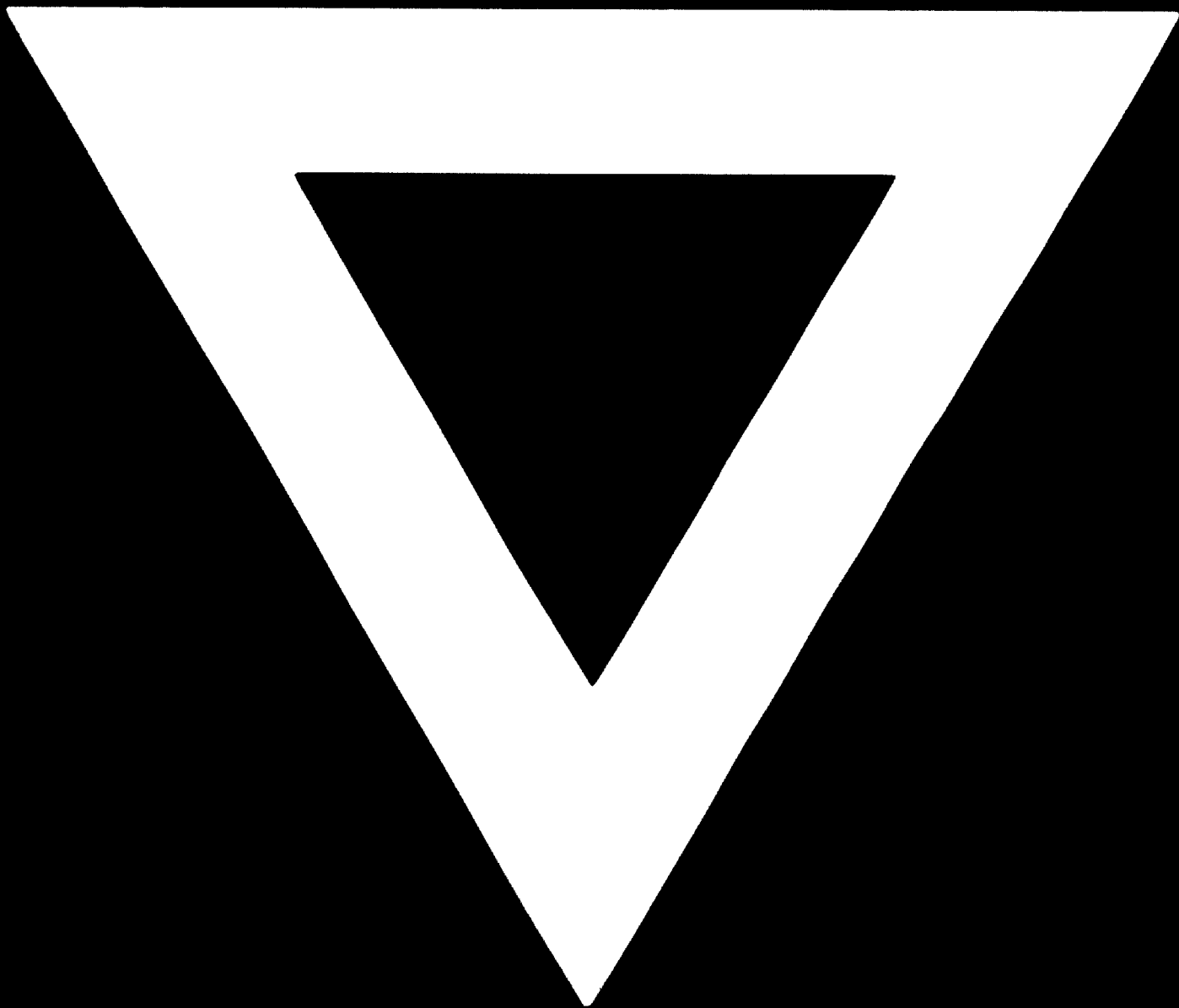
<b>A. <u>Travel</u></b>		US\$	
22 participants @ US\$ 1200		26.400	1)
Per diem 49 x 286 (number of days) (actual per diem see also Annex VII)		14.014	2)
	Subtotal:	<u>40.414</u>	
<b>B. <u>Cost of Training Course</u></b>			
Lecturers: allowances, expenses 17 x 250 (accommodation and lunch)		4.250	
Simultaneous interpretation		4.000	
Local travel		1.700	
Facilities:			
Rental of premises for two weeks			
Conference room for about 50 persons		4.300	
One small committee room		1.000	
One small office			
30 season tickets and fair catalogues		p.m.	
Sundry, stationary		1.000	
Hospitality: Reception by UNIDO		500	
	Subtotal:	<u>16.750</u>	
<b>C. <u>Administrative Costs</u></b>			
Salaries: Course Director 2 m/m		2.300	
Course Secretary 2 m/m		1.200	
2 Interpreters English-French		900	
Travel:			
1. UNIDO staff member to Milan for finalization of programme		250 (travel) 70 (per diem)	
2. ACIMALL Secretary to Vienna for selection of participants		250 (travel) 70 (per diem)	
3. Travel of one UNIDO staff member attend the course		572 (travel) 250 (per diem)	
	Subtotal:	<u>5.862</u>	

	US\$
D. <u>Miscellaneous</u>	1.300
E. <u>Administrative Support</u> <u>by UNIDO</u>	P.M.
F. <u>Overhead</u> (14 %)	9.074
	<hr/>
<u>Grand Total</u>	<u>73.400</u>

- 1) Travel costs will be corrected after final calculation from Alitalia
- 2) Per-diem has to be re-calculated to take into account delayed arrivals.



**C-670**



**78.11.08**