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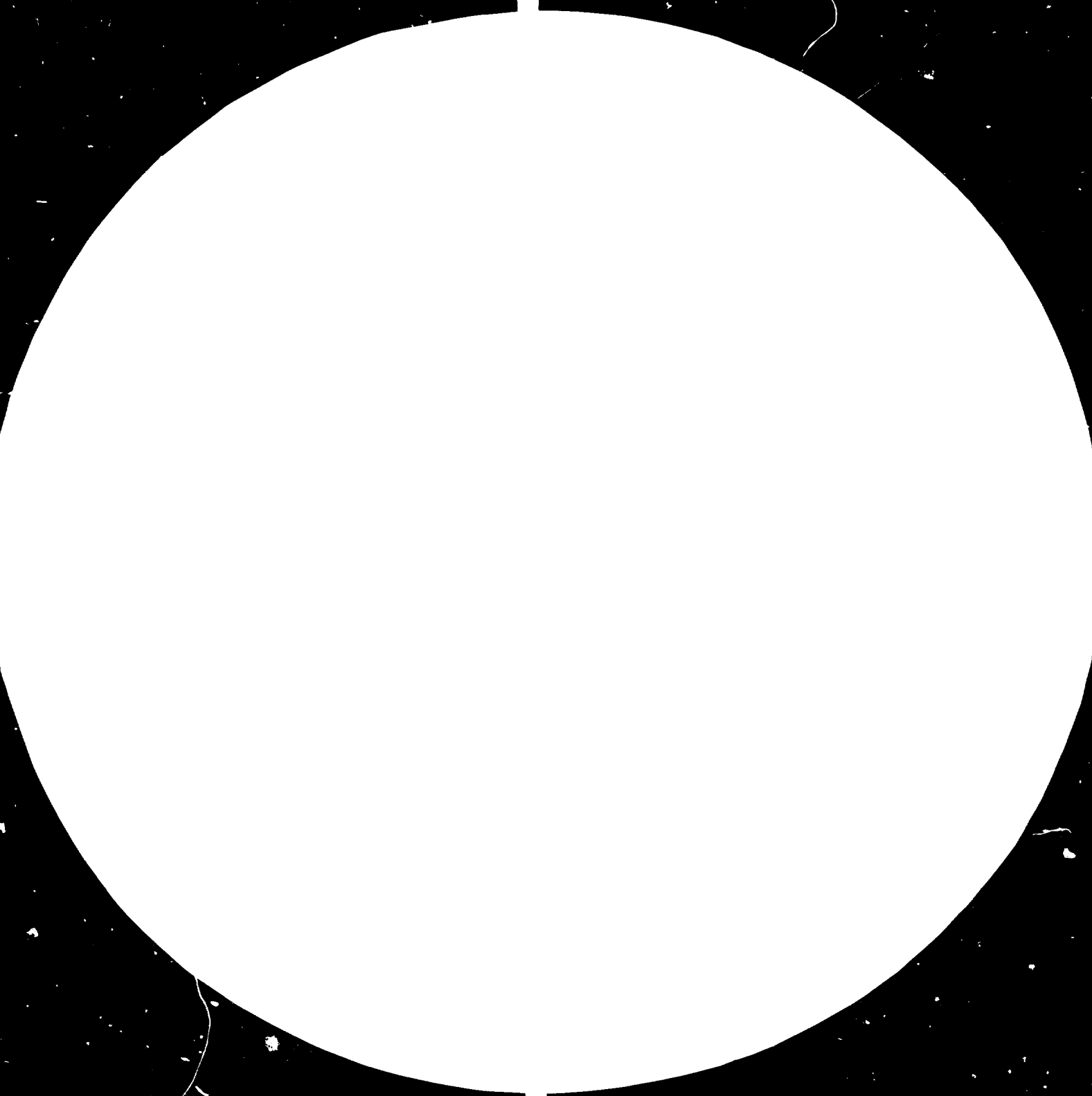
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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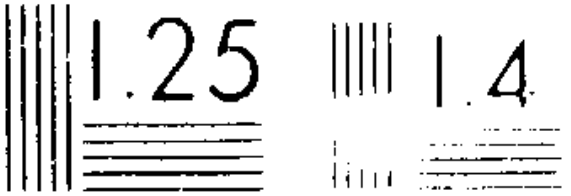
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23 April 1982

English

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Portugal

DIAGNOSTIC MISSION TO DETERMINE THE NATURE AND SCOPE OF UNIDO INVOLVEMENT IN THE RESTRUCTURING OF THE PORTUGUESE TEXTILE INDUSTRY

SI/POR/78/801

PORTUGAL

Technical report *

Prepared for the Government of Portugal

by the United Nations Industrial Development Organization,

acting as executing agency for the United Nations Development Programme

Based on the work of Bruno Pelanconi,

Consulting Engineer for Textiles

003984

United Nations Industrial Development Organization

Vienna

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C O N T E N T S

List of Key Words and Abbreviations

ANIVEC	Ass. Nac. das Ind. de Vestuario e Confeccao
APM	Associacao Portuguesa des Industrias de Malhas
CIFAG (IPE)	Centro de Informacao, Formacao e Aperfeicoamento em Gestao (Institute of State Partecipations)
DGITL	Direccao-Geral das Industrias Transformadoras Ligeiras (MIEE) (General Direction for Manufacturing and Light Industries)
DGQ	Direccao-Geral da Qualidade (MIEE)
EDP	Electronic Data Processing
EED	European Economic Community
GEP	Gabinete de Estudos e Planeamento (MIEE)
IAPMEI	Instituto de Apoio às Pequenas e Medias Empresas Industriais (MIEE)
IT (TI)	Instituto dos Texteis (Textile Institute) (MIEE)
IUBI	Instituto Universitario da Beira Interior (University Institute in Covilha)
HOK	Productivity in Kg per Operative/hour
LNETI	Laboratorio Nacional de Engenharia e Technologia Industrial (MIEE) (National Laboratory for Engineering and Industrial Technology)
m^2	Square metres
MIEE	Ministry of Industry, Energy and Export
MMF	Man made fibres
MT	Ministerio do Trabalho (Ministry of Labour)
OH	Operative/hour (worked)
Q.C.	Quality control
1 US $	66.66 Escudos (January 1982)

1. INTRODUCTION AND SCOPE

(Meaning of words is according to the OXFORD Dictionary)

The tasks and duties of the mission have been dealt with according to the TERMS OF REFERENCE CLT 82/002 as follows:

Taking into account Portugal's plans to restructure its textile industry

- Review existing facilities for vocational and middle management training and suggest programme outline covering supervisory management, production planning, quality control, fabric construction and maintenance;
- Review current textile training programme at Minho University and assess its adequacy for present and future needs of industry;
- Comment, in general terms, on need for R + D facilities and local technical consultancy group;
- Prepare final report outlining programme of technical assistance in above areas.

The Portuguese counterpart for the mission has been the DGITL, main branch of the Ministtry of Industry - Light Industry - responsible for the Textile Industry. The field research in Portugal has been carried out from 12th January to 6th February 1982.

DGITL has arranged a precise and comprehensive working, meeting and visiting programme including all major official bodies, agencies and institutions concerned with the textile industry, training, technical education (at all levels), quality control, management, associations of industrialists and 8 major industries in specific branches of activity.

As a result a total of 30 (thirty) working meetings have been carried out with the assistance of two official delegates of DGITL, in order to sort out the real consistance of the corresponding problems.

It has to be mentioned that the interpretation and the content of the terms of reference given by the General Director of

DGITL and his staff has been COMPREHENSIVE and in-depth.

In this connection, the portion concerning "Comment, in general terms, on need for local consultancy group" is to be considered as "OVERALL CONSULTANCY" including the following services:

- Technical (production management, equipement, methods, quality control and specific training)
- Accountancy (General, industrial, profitability rates)
- Managerial (Financial, Economics, EDP, Marketing and Auditing according to local legislation)

In spite of the excellent collaboration given by the team as a whole (DGITL), the time scheduled of 4 (four) weeks has been short if compared to the large amount of items involved.

In addition to the survey concerning Minho University, DGITL has included also IUBI in Covilhà, which is also dealing with textile engineering and has a joint assistance from U.S. AID and Clemson University.

The scope of the mission has been to identify deficiencies and needs within the framework of the broader objectives of the textile industry for its short-medium term development. In this connection it has been necessary to undertake an in-depth study of the existing situation - with facts and figures - focusing constraints that limit its development and suggest ways and means to overcome them. In particular it has been stated the lack of provisions for training of technologist level, as well as for the making-up sector as a whole. A major problem is also the insufficient availability of up to date equipment at all levels for quality control, vocational and technical training. Sizeable financial means are necessary un order to cope with the specific needs.

A General Meeting, attended by the top responsible staff met during the mission, has been held on 5th February 1982 in order to tackle - in an integrated and comprehensive way - all key problems concerning constraints, needs and priorities.

In general terms it can be stated that there is a striking lack of coordination and of proper basic information between the different counterparts involved. In other words there is no give and take. This statement is given looking at the overall set up of the branches - and without any intention of making useless criticism - particularly in view of the planned future entry of Portugal in the EEC.

To overcome these deficiencies a specific COORDINATION COMMITTEE should be established in order to integrate the activities, to produce tangible documentation on needs, and to speed up the required action. At this stage there is a need for a CORPORATED PLAN covering the overall set up of the Textile Industry and related support services, but apparently the two main counterparts seem missing. In other terms the proposing one and the deciding counterpart.

As a final conclusion, on the overall pattern, there is an urgent need for catalysts and targets, in the broader sense of the terms.

2. EXISTING SITUATION

In this chapter are collected all relevant available elements needed to synthetize the present situation in connection with the project and/or with the basic information required as working documents, for present or future needs. Unfortunately the majority of the statistics data available refer to 1977 (historical), hence - not strictly suitable for a reliable use - in executive sense.
Specific Key Indicators and productivity rates (paragraph 2.32) should give the verdicts on the situation in each sector. Many items are missing. The Textile Institute and related organisations (including University and Industry) must get familiar with these essential technical-management tools.
A routing survey (quarterly) of this kind is a standard procedure, since 1959, for the EEC countries and shou d be implemented in Portugal as soon as possible.

2.1 Facts and figures

In 1977 the total (average) labour force was of 179.521 units, of which 3062 ag executive level. The turnover of approx. 5460 units corresponds to 3.04%. Rates of absenteeism are not available.
The summary and breakdown of labour force is given under paragraph 2.11.
The available data do not make distinctions between administrative and technical staff, hence an assessment and check with paragraph 2.21 (for 1977) is unfortunately not possible.
The average wage per hour (workers, hourly wages) was 40.1 Escudos. The average income per year is as follows:

- Executive level	Esc. 203,780	(= 100)
- Administr. and technical staff	" 132,665	(= 65)
- Workers	" 74,734	(= 36.7)
- Overall average (on 179,521 units)	" 80,714	(= 39.6)

A breakdown of levels of incomes and age groups, according to paragraph 2.21 / (1), could be useful to sort out if the same are balanced with tasks and duties. The difficulties in hiring good staff and attracting clever people for textile training are (world wide) the comparatively low salaries paid in Textiles. This is particularly true for levels B -C1 and C2. The increasing sophistication and automation in the textile industry require, for the mentioned levels, skill and capacity equal to any other light industry (if not more), hence salaries must be balanced. Similar problems are common in almost any country but successful firms have solved the problem on the basis of "give and take". In this connection, the fact that at the Campos Melo-Covilha (paragraph 2.43-A) only 3% of the pupils has chosen Textiles is somehow symptomatic and partly self-explanatory.

Without a proper and balanced settlement of salary, at least for levels B and C1 any other sound move - like training programmes, equipment, instr and lecturers - would be of modest benefits if conditi in industry are not attractive enough for the future (and existing) staff.

An in-depth study on the matter is indispensable considering the key role of the levels B and C on the overall results and repercussions on the business. A tangible aspect of the present situation is the unusual number of subordinates per foreman calculated from paragraph 2.21, as ratio (for 1977) between (E2) : (C1) gives an average of 15 workers. The same ratio (forecast 1982) gives an average of 8.30 which represents approximately the rate in the EEC. In other terms in the existing situation the foremen are overcharged and as a consequence the supervising efficiency, working methods, machine settings etc. as a whole are neglected and overall results are modest as demonstrated by means of key indicators.

EMPREGO-REMUNERAÇÕES E DURAÇÃO DE TRABALHO

SUMMARY AND SPLIT OF LABOUR FORCE: 1977

(Resumo Geral Pessoal e Horas Trabalhadas: 1977)

SOURCE: INSTITUTO DOS TÊXTEIS, FOLHA TÊXTIL Nº24, Junho 1981 página 203

– Paragraph 2.11

	PESSOAL AO SERVIÇO NA ULTIMA SEMANA DO ANO				REMUNERAÇÕES ILIQUIDAS PAGAS DURANTE O ANO 1000 ESCUDOS	HORAS DE TRABALHO EFECTUADAS DURANTE O ANO	SUMMARY OF LABOUR FORCES 1977 PER SECTION (Average)	
	HOMENS		MULHERES					
	MEN		WOMEN		Wages pos. 1 to 20 in Esc.x1000	Operative/h worked and payed 1977	Pessoas Remuneradas	
							Nº médio	%
PESSOAL NÃO REMUNERADO (self-employed staff)								
Proprietários que trabalham (Owners in service)	473		154					
Trabalhadores familiares (Family workers)	66		107					
PESSOAL REMUNERADO (staff with salary)								
Administrativo, técnico de escritório e outros não operários: (Administrative and technical staff, payed monthly)								
Dirigente (Executive level)	2577	8	473	3	623976		3.062	1,70
Não dirigente (Non executive staff)	7735	84	3816	74	1553375		11.709	6,52
Pessoal operário: (Workers – hourly wage)								
Trabalhando no estabelecimento: (working in factories)					A	B		
Pos. 1 Na produção de fibras artificiais ou sintéticas e monofilamentos	1876	16	1028	22	285262	5567284	2.988	1,66
2 Na lavagem de lãs e tratamento de desperdícios (Wool washing)	136		103	6	18683	413405	222	0,12
3 Na penteação de lãs (wool combing)	282	1	335	5	49641	1022898	548	0,30
4 Na fiação de algodão e fibras artificiais ou sintéticas curtas (spinn)	5960	362	12016	569	1746583	42963621	23.058	12,84
5 Na fiação de lãs e fibras artificiais ou sintéticas compridas	2961	56	5299	115	740425	16870061	9.054	5,04
6 Na fiação de cânhamo, linho e juta (spinning hard fibres)	256		123		38612	716 ?	385	0,21
7 Na tecelagem de algodão e fibras artificiais ou sintéticas (weaving)	10650	564	13058	813	1854000	471934,7	25.328	14,11
8 Na tecelagem de lanifícios (weaving – wool sector)	3241	53	1995	42	439920	9709363	5.210	2,90
9 Na tecelagem de cânhamo, linho e juta (weaving hard fibres)	438	2	222	12	69750	1296476	696	0,40
10 Na fabricação de tecidos de malha (knitting sector)	1879	123	1379	138	262130	6673725	3.582	2,00
11 Na fabricação de tapetes e alcatifas (carpets sector)	580	23	1364	77	159586	3736979	2.005	1,12
12 Na fabricação de cordoaria (rope making)	1566	31	1065	39	231206	5189981	2.785	1,55
13 Na fabricação de redes (net making)	120		327	12	37522	871772	468	0,26
14 Na fabricação de passamanarias, rendas e bordados (Laces)	497	58	1501	152	145192	4127336	2.215	1,23
15 Na fabricação de linhas (sewing threads)	259	24	613	42	78128	1781336	956	0,53
16 Na confecção de vestuário (Making-up sector)	4252	252	45639	4628	3597888	101197560	54.314	30,26
17 Na confecção de artigos para o lar (Household textiles)	194	37	1336	327	121288	3576274	1.919	1,07
18 No acabamento de fios e tecidos (Finishing-yarn+fabric)	9179	341	4960	181	1219276	29787356	15.450	8,61
19 Na plastificação de tecidos e malhas (Fabrics plastifying)	860	17	347	76	128115	2475566	1.329	0,74
20 Noutros sectores e serviços de apoio (other support activities)	8990	143	2979	72	1090276	22803035	12.238	6,83
– Pessoal trabalhando fora do estabelecimento (Wage is 0,33% on hourly wage total)						Not included		
TOTAL posições 1 a 20 (operários)					12.312.491	306.973.566	179.521	100,00

N.B. pos. 1 = Man Made fibres production

MOVIMENTO DE PESSOAL REMUNERADO

Admitidos durante o ano	5471
Saídos durante o ano	5447
Efectivos no fim do ano	179521

Average wage/$_h$ = $\frac{A \times 1000}{B}$ = 40,1 Escudos por hora trabalhada

2.12 Labour cost situation

Official data refer only to 1977 as in paragraph 2.11. During the mission actual data have been asked to a dozen managers but in only one case could we receive an average labour cost (including all social and additional charges) of 139 Escudos (for piece work) equivalent to US$ 2.085 at the present rate of exchange (January 1982). It has been very surprising the fact that the majority of firms, apparently well organized and equipped with computers for the last few years, have managers with insufficient cost consciousness on specific key factos like raw materials, labour, power and energy.

A real campaign - in positive sense of the term - must be made at all levels, including educational institutions dealing with economics, production engineering and technology, in order to make cost consciousness a standard rule. As a first move, and for orientation purposes, a photocopy from TEXTILE HORIZONS - Dec. 81 - is presented on the next page, giving a comparison of labour costs for 1980/81 of 41 major textile producing countries.

Portugal is indicated under position 24 (1981) with an average cost of US$ 1.88 per OH (operative/h). Comparisons between competitor countries are useful, Greece, which is the last country to have entered into the EEC, has an average of US$ 3.58, which means approx. 90% higher than Portugal. Surveys on production and productivity (per operative/h and per productive unit) are also carried out in the EEC and are extremely useful for orientation and/or reference.

2.13 International labour cost comparisons

Table 1. Labour Cost Comparisons (all figures in US$; dates, spring 1980, summer 1981)

1981 position	Country	1981 costs	1980 costs	1980 position
1	Sweden	9.55	10.43	4
2	Belgium	9.34	11.82	1
3	Norway	9.26	9.62	2
4	Netherlands	9.16	11.68	6
5	Denmark	8.80	9.12	8
6	Switzerland	8.18	9.65	5
7	Germany BRD (north)	8.17	10.65	3
8	Italy	7.23	9.12	7
9	USA	7.03	6.37	11
10	Canada	6.64	6.25	12
11	France (north)	6.40	8.57	9
12	Venezuela	5.63	—	—
13	UK	5.57	5.75	13
14	Finland	5.48	5.62	14
15	Austria	5.04	6.42	10
16	Japan	4.90	4.35	17
17	Spain	4.48	4.90	16
18	Eire	4.37	5.13	15
19	Greece (south)	3.58	4.03	18
20	Mexico	3.06	3.10	20
21	Chile	2.57	1.93	21
22	Brazil (Sao Paulo)	2.39	1.57	24
23	Argentina	2.03	3.33	19
24	Portugal	1.88	1.68	23
25	Colombia	1.76	—	—
26	Iraq	1.70	1.57	24
27	Syria	1.58	0.96	28
28	Tunisia	1.55	1.13	27
29	Hong Kong	1.42	1.91	22
30	South Korea	1.35	0.78	32
31	Taiwan	1.32	1.26	26
32	Singapore	1.12	0.94	30
33	Turkey	1.07	0.95	29
34	Morocco	0.75	0.85	31
35	India	0.69	0.60	33
36	Indonesia	0.63	—	—
37	Philippines	0.43	—	—
38	Egypt	0.43	0.39	34
39	Pakistan	0.42	0.34	35
40	Thailand	0.34	0.33	36
41	Sri Lanka	0.16	—	—

much as the total labour cost in Ireland. Italy, Germany BRD, France, Netherlands and Sweden are in a similar situation.

This year Werner has added a new feature: the 'normal' plant operating hours per year, economic conditions permitting. It shows that currently the North American and European countries with 5500 — 6000 plant hours per year are at a clear disadvantage against the Far Eastern countries 8200 — 8500. This has a significant effect on depreciation and fixed cost charges. Labour costs per unit of production are not significantly increased, overtime premium being paid only for work over 48h/wk.

In a final cautionary note Werner points out that hourly labour costs are only one element of the competitiveness and profitability of the primary textile industry, but for the standard basic articles, which represent the greater part of the primary textile trade, it is an important factor.

Sweden, Belgium lead labour cost league, Werner reports

Sweden and Belgium are vying for first place in the textile labour cost league, according to management consultant Werner International's latest report*. Of the 41 countries surveyed, Thailand and Sri Lanka have the lowest labour costs when measured in US$/hr (see Table 1).

Belgium stood in first place in spring 1980, the date of the last survey, but was replaced by Sweden in summer 1981. This was of short duration though, since the recent devaluation of the Swedish Krone by 5% meant that Belgium has quickly regained first place.

During the past year there have been very big variations in the exchange rates, particularly the US dollar. The overall effect, on the basis of summer '81, has been to considerably reduce the differences between European and US hourly labour costs, which should improve the competitiveness of the Common Market primary textile industry versus the US industry.

In Spring '80, hourly labour costs ranged from 5% to 186% of US costs but by summer '81, the range had reduced to 2 — 136% of US costs.

Last year, within the Common Market only the UK and Eire had lower total labour costs than the USA. This year France for the first time in three years has lower costs than the US in addition to the UK, Eire and Greece.

South Korea has had the largest percentage increase in US dollar terms, with labour costs that are now nearly as high as Hong Kong.

Turning to South America, there was an increase of labour costs of 143% in Argentina in local currency, but in US dollar terms it still meant a decrease of 40%. In Brazil, there were substantial increases in the Sao Paulo state and in southern states in US dollar terms, but very little in the north of Brazil, where labour costs are nearly half those around Sao Paulo. This shows, Werner says, the danger of relying on national average statistics to assess competitiveness.

Countries of the Far East, with the exception of Japan, have labour costs which are less than 25% of US labour costs.

The report notes that textile employers federations of several European countries have asked their respective governments to reduce the amount of social charges they have to pay, in order to improve their competitiveness. Table 2 shows, for the 20 countries with the highest total labour cost, the breakdown between wages and charges.

This data shows that without charges Belgium is in seventh position instead of second position, and that the total charges paid by the industrialists in that country are nearly as

2.2 Estimated evolution of employees

The Ministry of Labour in collaboration with the Finance Ministry (Departamento Central de Planeamento e Plano) have worked out a valuable study covering the levels distribution (Q.4.4 for 1977 and Q.4.5 for 1992) presented in paragraph 2.21.
The planned evolution looks perfectly balanced with the logical evolution of the textile industry, imposed by technology, automation and competitivenes. The main changes in the structure, in terms of numer of staff and levels of qualification are as follows:

Levels and/or Grades	Numbers of employees			Gap on 1977(employ.)	
	1977	1985	1992	1985	1992
A 2	539	987	1,436	+448	+897
A 3	1,077	2,064	3,052	+987	+1,975
B	449	2,010	3,590	+1,561	+3,141
C 1	10,053	12,656	15,260	+2,603	+5,207
C 2	3,056	4,667	6,283	+1,611	+3,227
E 2	150,926	138,718	126,652	-12,208	-24,274

The turnover of personnel during 1977 has been 3.04%, corresponding to approx. 5460 employees.

The key levels in terms of support to industry and of role, to materialize improvements, are Grades B and C1 for which the existing training capacity is largely insufficient (in quantity and as level of skill).
For grade C 2 (mechanics) the Ministry of Education has worked out a new excellent training programme, starting in the school year 1982/83, termed "GI" with a total of 36 hours/week (of which approx. the half are practical training of specific machines). For the electricians similar implementation is on the move. Grades A2 and A3 will be dealt with at university level.

It has been stated that there is no connection between the levels of table 0.4.4 (paragraph 2.21 col.(1) annexed) and the Law Decree No. 127/78 dated June 2nd 1978, in DIARIO DE LA REPUBLICA - 1a serie - No.126 page 995 concerning Ministry of Labour (Ministerio do Trabalho). The level B (paragraph 2.21) as a job profile and in up to date terms has little to do with level 2.2 (tecnico de produçao) of page 995 of Law Decree No. 127/78.

2.21 - ESTIMATED EVOLUTION OF EMPLOYEES 1977 - 1992.

Situation	Actual data 1977		Forecast 1985		Forecast 1992	
Levels/ Grades	Share %	Number of Employees	share %	Number of Employees	share %	Number of Employees
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A1	0,02	36	0,03	54	0,05	90
A2	0,30	539	0,55	987	0,80	1.436
A3	0,60	1.077	1,15	2.064	1,70	3.052
A4	0,00	-	0,00	-	0,00	-
A5	0,05	90	0,08	143	0,10	180
Tot.A	0,97	1.742	1,81	3.248	2,65	4.758
B	0,25	449	1,12	2.010	2,00	3.590
C1	5,60	10.053	7,05	12.656	8,50	15,260
C2	1,70	3,056	2,60	4,667	3,50	6.283
D1	0,10	180	0,55	987	1,00	1,795
D2	2,50	4.488	3,80	6.822	5,00	8.976
E1	2,00	3.590	3,00	5.386	4,00	7.180
E2	84,08	150.926	77,27	138.718	70,55	126.652
F	2,80	5.027	2,80	5.027	2,80	5.027
G(tot.)	100,0	179.521	100,00	179.521	100,00	179.521

(Breakdown of staff levels in Textiles - Labour force -)

Sources : - Positions (1) and (2),Ministery of Labour (M.T. Quadro de Pessoal - Quadro Q.4.4. Departamento Central de Planeamento de "MINIST.DAS FINANÇAS E PLANO" 1977). Position (6) ditto,Quadro Q.4.5. (1992).
- Positions (4) and (5),interpolation between 1977/1992.
- Position G (3),Instituto dos Têxteis Nº 24/June 1981.

Description of the levels and grades :

A1 = Top executives
A2 = Engineers or Architects
A3 = Directors of Administration
A4 = Professors or lecturers
A5 = Executives & plant managers
B = Technologists + Production planning + Q.C. + Supervisors + Training instructors
C1 = Foremen
C2 = High skilled mechanics
D1 = Medium skilled mechanics
D2 = Top skilled machine tenders
E1 = Qualified workers ordinary
E2 = Ordinary machine tenders
F = Cleanning personnel

Note : Levels of position (1) do not correspond to the ones specified on " DIARIO DE LA REPUBLICA, Nº 127/78 " page 995 .

2.3 Textile Institute (Istituto dos Texteis)

The TI is an official body, depending directly from the Ministry of Industry, with main office in Lisbon and branches in Porto and Covilha. Its main activities are devoted - for the whole textile industry - to the following areas:

- import and export documents, quality, quantity and price,
- quality control testing of any product as support for industry as well as for arbitration and/or homologation for export goods,
- elaboration of sectorial and overall statistics data concerning textile industry (raw material origin, prices, consumption, personnel, wages, outputs etc.) with regional breakdown of major items,
- organization of quality control courses with practical training using specific testing equipment,
- help and support to industry, giving guidance on the possible origin and causes of tested faults,
- publication of manuals and statistics of technological - productive nature.

It is clear that the TI has a key and vital role for the country and for industry and in view of the planned entry of Portugal in the EEC requires a massive enlargement of its activities in order to cope with EEC rules and regulations. A wider scope in the areas of technical assistance as well as implementing national surveys concerning production - productivity items must be considered indispensable as a service to industry. Similar sectorial surveys are carried out - by similar national bodies - in the EEC countries as a whole, since 1959.

For the individual industry it is essential to know its levels of efficiency and productivity - compared with national and international rates - in order to identify its weak points and to be stimulated to improve in specific departments.

2.31 Testing equipment and priorities

Porto

The branch of the TI in Porto deals mainly with short staple fibres products.
The testing equipment available at present is worn out, with an average age of the testing apparatus of the following order:

A)	Fibres testing	(9 units)	= 14 years
B)	Yarns	(7 units)	= 16 years
C)	Fabrics	(8 units)	= 14 years
D)	Chemical and finishing	(20 units)	= 8 years.

Some (few) tests are no longer reliable because of unsuitable and poor conditions of the devices. A [illegible] technical survey to sort out an up to date list of equipment to cope with a larger and effective testing service, is to be considered indispensable to support efficiently industry and to safeguard reputation as export country.
As pressing priorities the following items are needed:

A) Ultra violet lamp to identify mildews and/or alterations by microorganism on fibres,
B) New automatic electronic evenness tester with integrator and spectrograph for slivers and yarns,
C) Automatic yarn grader for faults analysis (Classimat or similar),
D) Automatic yarn tensile and elongation tester equipped with automatic CV evaluator,

E) Tapered boards winder with tapered black plus white boards for yarn appearance assessment.

Yarn testing is neglected at present and the above-mentioned equipment is essential to give guidance and support in the areas of knitting and weaving yarns for top quality goods, particularly for export.

Covilha

The TI branch in Covilha plays a major role in the wool and MMF long staple sectors. In 1980 they carried out a total of 12,881 analyses, out of which 3,078 concerned the controls of woven fabrics, knitted fabrics and garments. Surveys on manufacturing faults and/or claims accounted for 335 units, for which assessment and guidance on its causes and how to overcome them has been given to industry.
At present the TI is not able to respond completely to the needs of industry, in fact only approx. 70% of the demand is covered, some tests are transfered to the Porto branch during peak periods.
The TI works in strict collaboration with the IUBI (University) and as a result some 12 Q.C. units, given through the US AID to IUBI, will be installed in the TI building for mutual help and use. This is a very positive symptom of the co-operative attitude and of remarkable sense of team work, getting the maximum out of the moderate resources available.

In spite of this, the branch of Covilha is still understaffed and inadequately equipped to cope efficiently with the requirements of the sector.
A comprehensive technical assistance covering the specific needs as well as giving guidance on the implementation of the survey on key indicators and productivity rates is to be considered indispensable.

In connection with testing equipment, as pressing priorities the following items are needed:

A) Automatic yarn grader for faults analysis (CLassimat or similar),
B) Automatic yarn tensile and elongation tester equipped with automatic CV evaluator,
C) Auto-Analyser for blend analysis,
D) Nep meter with lit screen,
E) Hoffman kind of steam generator press,
F) Fabric air-permeability tester,
G) Programmable washing machine for testing.

Key indicators and productivity

This kind of information is essential for industry because it gives a direct and tangible assessment in measurable units on its technical, productive and organizational terms.

At present these surveys are not carried out, hence it is impossible to quantify, in specific terms, the various key aspects of the industry.

This survey is strictly pertinent to the tasks of the Textile Institute and needs the collaboration of the industry. During the mission it has been ascertained that specific basic information concerning statistics data are difficult tc be obtained, partly because they come from the Institute of Statistics, as a mother source, and therefore there are long delays and sometimes remarkable lack of reliability.

Up to date data and specific statistics are essential working tools for the industry and for the country as a whole, hence they must be worked out as first steps by bodies with specific sectorial professional knowledge like the Textile Institute. In other terms TI staff are in a position to

identify from the very beginning the basic reliability of the data and prevent any further elaboration that would make the final figures useless, for any practical and/or executive work.

Considering the diagnostic tasks of the mission, an attempt to sort out the key factors has been made, utilizing the latest available data of 1977. A reduced and incomplete set of key indicators are given in the following paragraphs.

A technical assistance to cope with all sectorial information as well as its implementation must be considered indispensable, as a support to industry, as soon as possible.

The primary purpose is to give to each industry an up to date orientation and targets for improvements. Once established and implemented, these new procedures must be disseminated and introduced as sub-subjects in textile training at technologist and university levels.

2.32 - A

KEY INDICATORS AND PRODUCTIVITY
COTTON SECTOR - SPINNING

Note: The only statistic data complete, refer to 1977

Pos.	Item	Formula or souce or unit	Specific data basis 1977
		A	B
1	Spinning (Cotton and short staple MMF)		
1.10	Installed spindles	- Continous	1.561.502
1.11	" "	- Mules	1.048
1.12	" Turbines	- Open-end	9.412
1.20	Production tot. in Kg	Inst. do Text.	154.000.000
1.21	Average count produced	Ne (ECC)	24
1.22	Spindles-hours per year	I.T./pag. 179	8.043.000
1.3	Personnel and worked hours (hourly wages)		
1.31	Labour force in force	Workers	23.058
1.32	Total of operative/hours	I.T. page 203	42.963.621
1.33	Average wage cost per hour	Escudos	40,58
1.4	Productivity (Average)		
1.41	Production per operative/h	posit. (1.20):(1.32)	KOH = 3,58
1.42	Production per spindle/h	$\frac{(1.20) \times 1000}{1.22}$	grammes 19.14
1.5	Labour cost per unit (1 Kg yarn at average Ne 24)	(1.33):(1.41)	Escudos 11,33

Remarks: The analysis shows without any question that the statistics available are not reliable, and its accuracy is definitely insufficient. This is particularly evident for position 1,4 2/B (gr SH 19,14) equivalent to an average actual delivery speed of 12,97 m/minute. This figure is absolutely not possible.

KEY INDICATORS AND PRODUCTIVITY
COTTON SECTOR - WEAVING

Note: The only statistics data, complete, refer to 1977

Pos.	Item	Formula or source or unit	Specific data basis 1977
		A	B
1	Installed weaving looms (indicative)		
1.1	Mechanical, non automatic	Looms	8.818
1.2	Automatic, shuttles	"	17.969
1.3	Autom. Suttleless	"	2.531
1.4	Total posit. (1.1)+(1.2)+(1.3)	"	29.318
2	Production	I.T.	
2.1	Production en m^2x1000	Square m	250.000
2.2	Average picks per meter	Picks/m	2.200
2.3	Average width of fabric	Meters	1,20
2.4	Average weight per m^2	Gram./m2	120
2.5	Production in linear m	m/ix1000 (2.1):(2.3)	208.333
2.6	Production in Km x 1000 weft	(2.2)X(2.5)X(2.3)	550.000
2.7	Production in Kg (grey yarn)	(2.1)x(2.4)	30.000.000
2.8	Looms - hours productive	I.T. Nº 24 page 179	
2.81	- Mechanical (non automatic)	Loom/h	24.723.000
2.82	- Automatic looms	Loom/h	90.546.000
2.83	- Total posit. (2.81)+(2.82)	"	115.269.000
3.	Personnel and workes/hours (hourly wage)		
3.1	Labour force in force	Workers	25.328
3.2	Total of workers/hours	I.T. page 203	47.193.477
3.3	Average wage cost per hour	Escudos	39,28
4	Productivity (Average)		
4.1	Looms per worker/hour	Loom/OH	2,44
4.2	Production in linear/m/loom	$\frac{(2,5)x1000}{(2,83)}$	1,807
4.3	Averge picks per loom/hour	(2.2)x(4.2)	3.976
4.4	Picks per operative/hour (OH)	(4.1)x(4.3)	9.700
4.5	Weft/Km per oper./h (OH)	Km of weft $\frac{(4.4)x(2.3)}{1000}$	11,64

2.32 - C

KEY INDICATORS AND PRODUCTIVITY

KNITTING SECTORS (All kind of fibres and yarns)

Note : The only statistics data,complete,refer to 1977.

Posit.	Items	Formula or Source or Unit	Specific data basis 1977
1	Production per specific units		
1.11	- Warp-knitted fabrics	Kg x 1'000	22'426
1.12	" " "	m^2 x 1'000	Not available
1.2	- Weft-knitted:fabrics or items		
1.211	- Weft-knitted fabrics	Kg x 1'000	" "
1.212	- " "	m^2 x 1'000	" "
1.221	- Weft Underwear	Kg x 1'000	" "
1.222	- " " items	Dozens x 1'000	" "
1.231	- Weft Outerwear	Kg x 1'000	" "
1.232	- " " items	Dozens x 1'000	" "
1.241	- Legwears (Socks + Stocks etc.)	Kg x 1'000	" "
1.242	- " (Men - Women - Children)	Dozen pairs x 1000	" "
2	Yarn Consumption	Kg x 1'000	27'888
2.1	Warp knitted fabrics	Filaments only	Not available
2.2	Weft knitted (total)	(Pos.2.21 to 2.25)	" "
2.21	- Continous filaments	Flat filament	" "
2.22	- Continous filaments	Textured	" "
2.23	- Wholly or mainly cotton	(Short staples)	" "
2.24	- Wool or wool blends	(Long staples)	" "
2.25	- Spun MMF and others	Discontin. yarns	" "
3	Personnel and Workers/hours (hourly wages)		
3.1	Labour force	Workers	
3.11	- Warp-knitted fabrics	"	3'519
3.12	- Weft-knitted goods	"	Not available
3.2	Total of operatives/hours	Abbrev. OH	
3.21	- Warp-knitted fabrics	OH payed	6'673'725
3.22	-Weft-knitted goods	OH payed	Not available
3.3	Average Wage cost per OH	Escudos (b. 3.21)	39.28/OH
4	Productivity and average yarn consumption		
4.1	Productivity in warp knitting	Kg per Operat./h	KOH = 3.36
4.2	Yarn consumption per OH in Kg	Warp knitting	KCH = N.A.

2.4 Vocational and textile training

To cope with textile needs, training in Portugal is split and carried out mainly by a number of institutions such as:

- Ministry of Education (up to university)
- Ministry of Labour (Centros Protocolares)
- Ministry of Industry (LNETI, IT, DGQ etc.)
- Institute of State Partecipations (CIFAG)
- Business associations in related areas.

In connection with specific textile industry and textile management requirements, it can be stated that in these circumstances, in spite of the remarkable resources devoted for the purpose, it is giving modest benefits to the industry, which is the needing counterpart involved.

In other terms often training activities are carried out as emergency and/or isolated trouble-shooting moves and not as integrated portion of a corporate textile framework (CORPORATED PLAN).

At this stage the size and economical importance of textiles - for the country - are such that a corporated, coherently tailored overall plan is essential. A committee to define targets is necessary. Qualified representatives of textile branches as well as top professional managers - at different levels - must be key members of the committees in charge of setting up the wants and needs in specific sectors of the plan. Professional means working basically full time in or for the textile industry.

This mission and the general meeting of 5th February 1982, held in DGTIL, can be considered the first moves towards the corporated plan.

2.41 Basic needs for industry

In order to materialize its activities any industry needs a large variety of specific machines, which are a set of common components like frames, shafts, gears, cams, bearings etc.

Any technical training for tasks which imply dealing with machines, must have a sound basic knowledge of practical aspects of mechanical workshop.

The first approach to any machine is the anatomy of its components and their functions, followed by assembling, setting, lubrication and maintenance. The next step is to know and identify improper functioning, causes of faults and how to mend them.

The evolution in technology is towards more sophisticated and automated machines, hence technical training must cope with an increasing level of basic knowledge and skill.

Any country needs for its industrial development a sizeable basis of vocational training in mechanics, electricity, electronics and chemistry as a preliminary step for efficient technical training at specific technology level. Technologists and foremen are the frame and the main pillars of the industry.

Portugal has properly tackled the problem of basic training for mechanics with a new set up, termed G1, beginning in 1982/83, with 36 hours per week of which approx. the half is practical training on machines.

A similar concept should be implemented as soon as possible for textiles.

A major constraint for successful achievements is due to the lack of adequate machines (in quantity and kind) and facilities, which are essential.

Financial means and contribution from industry are urgently required to speed up the implementation and the efficiency.

2.42 Deficiencies of the existing training in textiles

The main weaknesses of the vocational and technical training are as follows:

A) A very large set of generic subjects with comparatively small portion of skill-related matters.

B) Theoretical subjects are not counterbalanced with corresponding practical application and exercise to prove their ability.

C) The majority of technical books and manuals do not deal with the subjects with a simple, clear and direct approach to the essential function and to practical implication of the same. Key items are often left without support of examples of its practical application in facts and figures. Many manuals deal with obsolete techniques and machines completely out of date.

D) Lack of proper variety of up to date machines and facilities to perform adequate specific anatomy and practical exercise.

E) Existing equipment is reduced in kind and obsolete (age is well over 20 years) hence of limited training scope.

F) Technology, performances, running conditions, production planning and control are not adequate to the present levels of knowledge required by industry.

G) Instructors for practical training are partly missing.

H) Training at textile technologist level, in upto date terms, is not existant.

I) The number of pupils at foreman level is insufficient to cope with the needs for industry.

2.43 Vocational and middle management training

At present there are 3 schools (ensino secundario) located in the following areas:

1 - Porto (Infante D. Henrique) for short fibres,
2 - Guimeraes (F. Holanda) ditto,
3 - Covilha (Campos Melo) for wool and long fibres.

The age of entry is approx. 15/16 years and the courses of 2 years (spinning, weaving, finishing) are only at foreman level, with a wide programme but with no depth in any specific skill.

The young age, the extended variety of subjects and the lack of adequate practical training contribute to modest final results as a whole.

The consultant has visited Porto and Covilha and has stated that - with the present set up - the judgments of inadequacy on basic skills, expressed by competent professional managers, are completely justified.

The average age of the equipment in Covilha is well over 25 years and in this circumstance it is not surprising that very few are interested in textile training.

In the following table the distribution of pupils in Campos Melo is presented, where only 3% are following textiles. A "numerus clausus" in positions 1,5,6 according to planned needs could be helpful to increase the frequency in pos.4. A new set up of the textile training is essential and this should cover the following skills:

- Spinning
- Weaving
- Finishing
- Knitting
- Making-up

The pupils should make a specific in-depth training with only 2 skills. Practical training should account for approx. 50% of the total time.

2.43 - A SUMMARY OF TRAINING COURSES - CAMPOS MELO (COVILHÃ) TOTAL OF PUPILS 381

(Sûmula dos cursos de ensino profissionalizante: Escola Secundária) Total de alunos 381

N.B.: Age of entry approx. 15/16 years - Training for skill termed 10º and 11º ano) Situation: Jannuary 1982

Pos.	Kind of training (skill) Tipo de especialização	10th year (Xº ano)			11th year (XIº ano)			TOTAL		Rem.
		Daily pupils No	Evening pupils No	Total pupils A+B	Daily pupils No	Evening Pupils No	Total Pupils D+E	Pupils C+F	Share %	
		A	B	C	D	E	F	G	H	
1	Accountancy + administrat. (Contabilidade e administr.)	32	50	82	47	37	84	166	43,5	Share % is calculated basis pos. 7 G = = 100%
2	Mechanics (Mecânica)	8	-	8	28	-	28	36	9,5	
3	Electricians (Electricidade)	27	7	34	35	15	50	84	22	
4	Textiles - Spinn. Weav. Fin. (Têxteis - Fiação, Tecel. Acab.)	5	-	5	7	-	7	12	3	
5	ARTS and design "styling" (Arte e design "estilistas")	15	-	15	26	-	26	41	11	
6	Secretary and short typist (Secretariado e esteno-dactilografia)	16	-	16	19	7	26	42	11	
7	Total pos. 1 to 6	103	57	160	162	59	221	381	100	
8	Share in %	27	15	42	42,5	15,5	58	100	%	

2.44 Technologists and supervisory staff

This kind of training, in up to date terms and to cope with the number of staff planned in table 2.21 level B is non-existant. The gaps, according to paragraph 2.2 are - taking as starting point 1977 - the following:

Forecast for 1985	=	1561 units
Forecast for 1992	=	3141 units

It is evident that for size and importance this is the major problem to solve with urgency.

The major activities of the technologists (Engenheros tecnologos) are supervisory management, production planning and control, quality control (at top level), fabric construction, maintenance, training instructors and methods, as a whole.

In view of the important and pressing needs for industry and the practical aspects for its implementation, the pragmatism imposes as "conditio sine qua non" to convert and adapt the 3 mentioned schools (Porto - Guimeraes - Covilha) according to technologist standards and requirements.

The reasons for this solution are that a large portion of facilities like buildings, laboratory and a few machines for practical training exist already, as well as a few teachers.

New syllabuses, technical literature, equipment for practical training and instructors are to be considered indispensable for this scope.

The studies should cover the following sectors:

- Spinning
- Weaving
- Finishing (yarns, fabrics, knitted goods)
- Knitting
- Making-up.

In-depth training concerns only 2 sectors, chosen by the pupil.

It is advisable that in the day time the facilities will be used for technologists, in the evening and at the weekend they must be available for training and/or retraining at foremen level.

A similar solution of getting the maximum out of the modest resources (financial and human) available for training is largely practised in the EEC.

The implementation of the proposed solution is the best as a whole, feasible in relatively short time and would give to Portugal - as a country - a portion of key staff to cope with vital needs of the textile industry.

The PRESSING URGENCY for technologists and also for the training of foremen must be transmitted at the highest levels (Ministries involved and/or Government) as soon as possible.

It is worth mentioning that this could be one portion of the mentioned "CORPORATED PLAN" dealt with in paragraph 2.4.

2.45 University Textile Training

At present 2 bodies are involved at this level:

A) Minho University, in Guimeraes, with 2 undergraduate levels:
   i) Textile technology
   ii) Production Engineering with Textiles

   and at graduate level:
   i) Master's degree in Textile Technology (proposed).

   In Minho basic technology is for short staple fibres.

B) IUBI (Inst. Universitario da Beira Interior) in Covilhà, with textile engineering and as optionals, industrial business management. In IUBI, basic technology is for wool and long staples MMF.

Both units are at an initial stage of development, building and facilities are being completed, machines and equipment for specific textile training are basically missing. As it has been mentioned in paragraph 2.42 position D/E, without an adequate set of equipment, consisting of at least one example of the latest succesful models used in up to date industries - and for each specific main process - the results of the final training would be of LIMITED SIGNIFICANCE, if compared with the present and future requirements of industry. Considering the fact that the textile engineers are supposed to be the authority number one, in industry, concerning the means and tools required such as machines, facilities, testing and control units etc., it is obvious that at university they must do at least the anatomy and in addition should become familiar in depth with what is currently available for the textile industry to cope with its specific needs.

Machine analysis and comparisons from the point of view of suitability, performances, consumption and estimated running costs are essential aspects and key tasks for future professional staff.

The prerequisite to solve the problem of machines and equipment is the availability of financial resources. In this connection, as mentioned in the Werner report, Vol. III - page 63, secondhand modern machines, available in Europe, could reduce the budget cost to less than half. Industry, being the main counterpart involved, could give a contribution for this purpose.

Present curricula at University

Both, Minho and IUBI, have a total of 10 semesters for Textile Engineering.

Breakdown of the specific textile related subjects :

Posit.	Basic subject and/or sector	Specific data	
		MINHO	IUBI
1	Average training hours per week (total)	24.5	17.0
2	Share % for specific subject (non optional) on the total:		
2.1	- Spinning	6.6	7.0
2.2	- Weaving and weaving preparation	7.6	6.6
2.3	- Fabric construction and design (weaves etc.)	4.0	7.7
2.4	- Chemistry + Dyeing and finishing	13.0	28.0
2.5	- Knitting	3.5	1.5
2.6	- Quality control and testings	6.0	6.6
2.7	- Non wovens	1.0	- 0 -
2.8	- Making-up	- 0 -	Optional
2.9	Total share % from posit.2.1 to 2.8	41.7	57.4
3	Actual training/h/Week on specific subjects	10.2	0.8
4	% of practical training on the total (specific).	Not Avail.	20.-

It is remarkable the gap -Position 1 - in training hours per week and it should be sorted out if for IUBI there is a budget reason.
It appears evident from Posit. 2.4 the preponderant role of finishing and dyeing given at IUBI. Production planning and control are virtually non existent as basic subjects.
Looking at the overall pattern of the textile industry and reviewing the training from top to bottom, as it is now, and - on the other hand - what are the essential operational needs in the industry, it is tangibly evident the urgent need for the mentioned "CORPORATED PLAN" of para. 2.4 as a whole. At University level there should be a deeper involvement in getting familiar with methods, means and tools for industrial operation and its management. In other terms, also a deeper concern with general facilities like power, water, air conditioning, compressed air, steam and heat production - for specific production processes - material handling and maintenance.

The present set-up does not seem to cope with the above mentioned key points - for the needs of industry - in an adequate manner.

In addition it has been stated that, for the making-up, with more than 54'000 workers employed, there is no competent and steadily organized specific training at middle-high level. Once again this demonstrate by facts the urgent need for the already mentioned " CORPORATED PLAN " to tackle the problems.

2.5 Quality Control

According to top local staff, quality control in Portugal started being a greater concern after a set of claims for sub-standard in export, and, since then, a major campaign is on the move. Q.C. in itself requires a specific mission, in view of the several aspects involved and its urgent needs. Nevertheless, visiting 8 factories and the Textile Institute branches has been enough to allow one to state that the major cause of the easily visible faults depends on the improper working methods and lack of direct product inspection at operative and foreman level. Evident weaknesses at various management levels, and the lack of systematical inspection - with corresponding corrective action - at specific step-processes; are the other main complementary causes.

The last aspects are apparent at grey fabric stage where, as a standard rule, the products should be inspected, trimmed - mended if it is necessary - and graded according to standards. In some cases it is worthless to go further to costly finishing processes if the grey products are already clearly sub-standard. Q.C. has been adequately implemented at university but the major efforts must be in industry at technologist, foreman and skilled worker levels, by means of proper working and control methods. This means to organize retraining, perhaps in conjunction with reorganization plans. To be effective, the message should arrive at operative level because they are the larger counterpart dealing directly with the products. In successful firms, incentives, related to quality results, have produced tangible improvements.

2.6 Need for R + D

In the definition of R + D a distinction in terminology is essential. For the Portuguese situation, the same must be considered as - APPLIED RESEARCH AND DEVELOPMENT - and in this sense its role and tasks are to be considered vital as a technical-technological support to industry.

This support is particularly important in the areas of MMF, blends, dyeing, finishing and related processes, involving complex phenomena and causes, which cannot usually be mastered by ordinary industries.

Some of the mentioned R + D are already being carried out at IUBI in Covilha and at Minho University, mainly for the local industries. Some others are worked out in conjunction with the Textile Institute.

In connection with the mentioned support to industry, a remarkable increase in kind and variety of equipment is essential, particularly in order to be able to identify peculiar faults which have their origin in MMF production steps.

At present specific research equipment is basically inadequate and manufacturing industries have quite a few troubles of this nature, with little local help to tackle the problems.

2.7 Need for local technical consultancy groups

The results of the surveys as well as the facts and figures by means of KEY INDICATORS AND PRODUCTIVITY (paragraph 2.32) indicate and demonstrate a general low level of efficiency and of competitiveness in the respective sectors. In crude and concise terms, it has been stated that, as a whole, there is a tangible lack of capability for getting out what is expectable from the remarkable resources already involved. The main missing items are targets, proper know-how, specific management techniques, modern working methods and integrated control systems.

To cope efficiently and quickly with the mentioned problems, the support of qualified consultancy is to be considered indispensable, in the strict sense. In other terms by means of specifically competent consultancy - in an integrated way - the major deficiencies can be tackled and solved for the large majority of the still viable industries. An urgent move in this sense could represent the survival and rescue of several industries - and of many thousands of jobs - otherwise lost in the near future.

Looking at the problem as a country, the financial needs - in terms of ratios - between creating new jobs, and rescuing existing ones, is well over 10 (ten) times higher. The socio-economic aspects involved should be carefully taken into account, in-depth, at top responsible levels, including competent Ministries and the Government itself.

2.71 Alternatives for local consultancy

According to the general opinion of the top executives met during the mission, a qualified tec nical-operational consultancy, at high level and in up to date terms, seems non existant in Portugal. Technical assistance, as a whole; has been virtually dealt with by foreigners.

On the contrary, even according to IAPME staff, it seems that a certain number of qualified financial analysts and auditors (revisores officiais de contas) are available in the country.

In this connection a pragmatical solution could consist in creating a reduced number of MIXED GROUPS, composed of the best Portuguese staff

- in Financial, Economics, EDP, Accountancy and Auditing areas, integrated with:
- top qualified foreign consultants for specific textile engineering, production-management and marketing areas.

It must be kept in mind that the knowledge of the language, proper terminology and the local legislation, for auditing, are of relevant importance at this level.

Even in the WERNER report, Volume III, page 21/e, under "company committments" it states:

- Agree the monitoring of the progress made, every month, by a consulting organization acting in collaboration with the bank/Ministry of Industry,

and it is implicit that to prove the progress implies a set of indicators of financial, technical-productive and cost nature of the company, before starting the technical assistance and in the following steps of its implementation up to its completion.

A reliable assessment on the progress made should be proven by financial statements (like profit and loss - marginal profit by line etc.) carried out by official auditors, according to specific legislation (decree 49381/

Dec.1969 and Diario da Rep. 7th February 1977 - No. 31).

As a final conclusion it seems that for Portugal the optimal alternative is a kind of joint venture in which there could be a corporated consultancy with benefits for the industry and a remarkable improvement of the specific skill for the Portuguese partners.

The proposed alternative would give an essential contribution to the textile branches and save considerable foreign currencies for the share carried out by local staff. In 1978 the foreign currencies for transfer of technology - for textiles and shoe industry - accounted for over 150 Million Escudos and estimates are approx. the double for 1981.

3. GENERAL MEETING HELD IN LISBON

A general meeting, attended by 21 persons - mainly top people responsible for the key bodies and related institutions involved - has been held in Lisbon on 5th February 1982 in the DGITL office.

It has to be mentioned that all participants had been previously contacted, one by one, on specific subjects, during the working meetings of the mission and asked to produce specific facts and needs on each sector.

The purpose of the meeting has been to deal with the problems in a corporated and integrated way, focusing all specific needs according to priorities and practical aspects for the industry. The general opinion is that - up to now - there has been a remarkable lack of coordination and of communication between the several counterparts involved and as a result decisions and moves have been taken on an emergency basis and not as a portion of a corporated plan involving the textile industry and its environment as a whole. At this stage, and particularly in view of the future entry of Portugal into the EEC, a sizeable CORPORATED PLAN for the Textile Industry - according to the opinion of the participants - seems to be extremely urgent and essential, in the broader sense of the terms.

The lack of proper provisions for technologists, for foremen and for the maing-up sector as a whole, seem to demonstrate by evidence the inadequace of the existing set up.

The outcome of the meeting can be summarized in the following essential points:

A) - The present training institutions have inadequate equipment and insufficient portion of practical training in textile related subjects. A substantial remodelling is considered INDISPENSABLE.

B) - On a national basis there is an urgent need to define the JOB PROFILES AND STAFF FUNCTIONS in textile branches, with corresponding remodelling of the specific training, according to modern and proven industrial working methods. This reorganization should be carried out with the assistance of competent consultants in textile operational-management.

C) - The role and involvement of the Textile Institute should be enlarged and strengthened in view of giving better assistance and support to the textile industry as a whole. This is also intended in the area of guidance in overall set up, with systematical production and productivity surveys as mentioned in paragraph 2.32. Specific technical assistance for its implementation is essential.

D) - The need for a CORPORATED PLAN covering all aspects and all sectors of the textile industry and its training, is considered essential. This is particularly important to cope also with the requirement of the making-up sector which, up to now, has been neglected and for which no provision has been foreseen in the middle -to-high level training. Apparently the needs for making-up have been underestimated.

E) - Industry needs urgently technologists and foremen with higher basic knowledge of textile machines, production-management techniques, quality control and sound, practical training on machine settings, maintenance procedures and running servicing. These topics have been dealt with in details in paragraph 2.4 as a whole. To cope with these problems, the conversion of the 3 secondary schools of paragraph 2.44 seems the most adequate solution.

F) - The industry, the Textile Institute and the textile training institutions consider as indispensable the availability of new specific manuals for basic approach to job related subjects. The existing situation of this matter has been mentioned in paragraph 2.42/C. The availability of proper and tailored manuals is essential for foreman level (well over 10,000 persons involved) and for technologists (3590

foreseen in 1992). Manuals should deal with working methods, department organization, quality and machine controls and specific operational techniques. The said manuals have been considered a basic tool for retraining of existing staff, even in the remote part of the country, and as a key guide for internal requalification of staff in the industry, on a modern and standard basis. Manuals should be prepared by qualified professional staff in the corresponding sectors.

G) - Competent technical-operational assistance has been considered essential for the set up of the CORPORATED PLAN and its implementation.

4. RECOMMENDATIONS

Considering the large amount and the key importance of the items involved in the mission, the report has been carried out as a WORKING GUIDE with keen attention to specific practical aspects, and suggestions for its implementation, in the corresponding paragraphs. In addition to that, the General Meeting has summarized the main points on which Portugal - as a country - must concentrate its concerns for the corresponding action.

In fact the General Meeting has been the first step to deal with all topics of major relevance - in an integrated form - for the required action for the support of the textile industry. Looking at the overall pattern, it is evident that the priority moves are so far identified and the top professional staff involved have given a valuable contribution and approval to the general set up worked out for the purpose. In other terms, the summary of the General Meeting represent a valuable basis for future action and is a set of complementary recommendations to this paragraph.

The main recommendations are as follows:

A) This report must be considered a basic working document for briefing of the related bodies and/or institutions, on specific needs.

B) A special committee, in charge of the coordination and follow-up of the restructuring of textiles should be implemented.

C) The PRESSING URGENCY for action must be transmitted, as soon as possible, at the highest levels (Ministries involved and/or Government) in order to speed up the necessary decisions and moves. Committee of pos. B should promote the proposals.

D) To overcome the existing deficiencies, there is a need of a CORPORATED PLAN covering the overall set up of the Textile Industry and related

support services. Further technical assistance is essential to work out in depth the CORPORATED PLAN.

E) Technical-operational assistance is required, to enlarge and strengthen the activities of the Textile Institute as a main support body for the textile industry as a whole. Review, quality control, testing equipment and testing methods, improving the links between identification of faults and practical action to overcome them are essential.

F) Study and implementation of operational and technical - productivity surveys to give specific assessment and targets to industry.

G) Remodelling of the technical-vocational structures to cope with the industry's needs (Technologists - foremen - making-up) with definition of equipment, facilities, quality and technical-operational controls, in up to date terms.

H) Technical-operational consultancy is indispensable in order to speed up the improvements for the whole industry.

ANNEXE

List of participants at the General Meeting of 5th February 1982

Dr. Augusto MARQUES - President - Centro de Formacao Professional (MT) - Vocational Training Centre (Ministry of Labour) Lisbon

Sr. Joao PEREIRA GUIMARÃES - Director - (APIM) - Porto

Dr. José GONÇALVES - (ANIVEC) - Porto

D. ESTER GONÇALVES - Director - (Vocational Training Centre) MT - Lisbon

Eng. FIADEIRO - (IUBI) - Professor, Textile Technology

Eng. LEITAO - Associacao Nacional dos Industrais de Lanifícios

Eng. MELO E CASTRO - Professor of Textile Subjects

Eng. Mario ALVES DOMINGUES - Somelos (Textile Firm)

Eng. CASTRO DIAS - (MIEE/Porto)

D^{a} M^{a} de ASCENSAO SIMÕES - (Principal of Textile Secondary School) - Covilha

D^{a} M^{a} ORVIDE POMBO - Textile Institute (IT) - Covilha

D^{a} M^{a} Teresa LOUREIRO - Q.C.Manager - Penteadora (Covilha)

D^{a} Marina MOTTA FERREIRA DOS SANTOS - LNETI

Dr. COSTA FIGUEIRA - Textile Institute (IT) - Lisbon

Dr. Mario ALVES RENATO FELIBERTO PINHO MARQUES - GEP (MIEE)

Eng. BOLEO TOMÉ - Direccao Geral de Qualidade (DGQ)

Eng. GUERRA CARDEAL - IAPMEI (MIEE)

Eng. Angela AMORIM - DGITL (MIEE)

Eng. GRACA HERDADE - idem

D^{a} Regina BISCAYA - idem

BRUNO PELANCONI - UNIDO/Vienna