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ABSTRACT

This publication of the European Centre for the Development of Vocational Training (CEDEFOP) describes a project investigating employment and training in Greece, Spain, and Portugal. An introduction tells why CEDEFOP has given priority to those countries. The second section reports the project's examination of the textiles and ready-to-wear clothing sector. The third section reports on production and restructuring of that sector. The fourth section takes up the issues of restructuring and membership. Education is the subject of the fifth sector. The sixth section addresses basic and applied research. The seventh section is about needs that are common to all the countries studied. A four-item bibliography is included. (CML)

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CEDEFOP flash

EMPLOYMENT AND TRAINING BY SECTOR
IN GREECE, SPAIN AND PORTUGAL

This CEDEFOP programme relates to those EC countries whose accession constituted the "second extension" of the European Communities, i.e. Greece, Spain and Portugal.

We have given priority to these countries for a number of reasons:

- Their accession brought the Community face to face with the need for policy adjustments (which was not the case on the accession of UK, Denmark and Ireland, known as the "first extension", as these countries had similar structures to those of the original Six and offered products which did not compete with those already available).

  But with the second extension, the Community had to adjust its internal policies and review its trading policies vis-à-vis third countries, particularly those whose products compete with those of the new Member States operating on the Community markets.

- The extension of the Community in the Mediterranean region now requires the implementation of the targets laid down in the Treaties, that is to say, the reduction of structural, social and economic imbalances and the raising of living standards of the Member States through the harmonization of living and working conditions, with the aim of achieving greater progress.

- The accession of Spain, whose average income in its most developed region stood at 85% of that of the other nine Members, Greece with 53% and Portugal with 37%, worsened the problems of regional inequality between the economically and socially developed North of the Community and the underdeveloped South.

- Greece, Spain and Portugal, although not to be considered as having the same characteristics and therefore the same problems, do in fact have a number of common features.

9/89

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At a political level, a number of similar factors determined the accession of the three countries to the Community: on the one hand, the search for a national identity and the strengthening of the parliamentary system and on the other, the choice of a liberal model of economic development. All three countries, long before their actual accession, had strong economic ties with the Community of the Nine. Almost half of all exports went to Community countries, while a surplus proportion of the workforce emigrated to these countries.

- The structure of the economies of these three countries also have a number of common characteristics. In all of them, agriculture continues to play a determining role in the GDP while the agricultural balance of the three in relation to the nine, is positive. With similar products, some of which are particularly "sensitive", such as olive oil and wine, agricultural production in Greece, Spain and Portugal faces the same marketing, quality, technological research and market information difficulties. Since the extension, Greece still has the largest agricultural sector in Europe. In 1983, 28.4% of its workforce was employed in agriculture, versus 18% in Spain and 26.7% in Portugal.

As far as industrial production is concerned, during the 1970s, Greece, followed by Portugal, had the fastest growth rate. But after 1980, Greece's position had declined. In comparison, the countries of the Iberian peninsula have maintained growth levels above the Community average. Generally, industrial production is particularly competitive in the metal sector, transportation, machinery and certain domestic electrical products, and is "sensitive" in shipbuilding, textiles and clothing and in coal and ore mining, where it faces increased competition from less developed third-world countries. In 1983, 27.2% and 44.4% of the Greek workforce was employed in industrial production and services respectively, while in Spain, the corresponding figures were 33.5% and 48.5% and in Portugal 36.5% and 36.8%. Of the three countries, Spain has the best developed industrial sector.

With regard to production costs in the three countries, Spain is in much the best position. Thus, while in 1984 the annual growth of productivity per employee grew at a rate of 6.1% in Spain, in Greece it was only 2.1% and in Portugal -0.5%. Labour costs per product unit amounted to 4.2%, 18.7% and 19.3% respectively.

On the other hand, Spain had always had poorer employment figures, which have worsened in the last few years as a result of austerity measures, with the consequence that one in five Spaniards is unemployed.

Of the three, the Greek economy is characterized by the greatest tendency to consume, both in the public and in the private sectors. In 1984, use of GNP for consumption was 88.4% in Greece, 80.9% in Spain and 83.8% in Portugal, whereas the Community average (of 10) was 79.9%.

- Upon their accession, these countries undertook to honour the Community's existing agreements, e.g. the system of preferential agreements with countries of the Lomé Convention or of the Mediterranean, bi-lateral agreements with third countries, the international GATT agreement, the Multi-fibre agreement, etc. As is known, these agreements relate to imports of goods into the EC from third countries, which are similar to those produced in Greece, Spain and Portugal and for which particularly favourable terms are granted. Therefore, these three countries must adapt their production to Community needs, but with the special support of the Community for the restructuring and differentiation of the production system.

  Restructuring must be carried out in accordance with Community policy, taking into acount the significance of the different sectors for the economy and employment of the country concerned, which, more than any other country, must bear a double burden: that of their integration and the creation of a Single Market by 1992.

- Up to their accession, these countries enjoyed a different level of protection for their local industry, with Spain first in line. After the Second World War, Spain underwent a long period of economic autonomy in which she created in effect a closed market regulated by a system of high import duties. It follows that the accession of the three countries also means an alignment to the customs regulations applicable to the other nine countries of the Community. It also means that duties imposed on products imported from other Member States must be abolished and the Community customs policy on imports from third countries must be adopted.

  Of the three, Portugal had the most "internationalized" market based on her colonies and participation from an early date in the EFTA group of countries, whilst Spain had the most protected market, Greece lying somewhere in the middle. Portugal's accession coincided with the loss of her colonies, a factor which has intensified the country's western European orientation and calls for extensive restructuring of her economy.

- With the completion of the Single Market, it follows that there will be full freedom of movement for capital, people and services, and freedom to bid for public sector contracts.

  Amongst the 12, it is intended to abolish natural, artificial and tax obstacles to competition and growth, so that the EC would be able to withstand technical and economic competition from the USA and Japan. If these measures are aimed at improving the EC's external position in the worldwide economy, it is not yet altogether clear how this will affect it internally. In other words, there is a risk that increased competitiveness will work in favour of those regions or countries which are already competitive and developed, thus widening the gap between the advanced North and the underdeveloped South. Only the economic development of the three countries will determine the extent to which accession facilitates or permits the growth of industrial activity in the region or whether these activities will become more concentrated in established industrial centres.

- Finally, in spite of close cooperation with the other nine EC countries, Greece and the two countries of the Iberian Peninsula do not maintain extensive trading relations. In 1983 Spanish imports of Greek products amounted to \$ 71,128,600, while Greek imports of Spanish products amounted to \$ 91,673,700, and in the period 1978 to 1983 the Greek-Spanish trade balance was, with the exception of 1982, negative.

  The limited trade relations between the easternmost and westernmost parts of the EC are due to the similarity of the products produced, but also, in part, to a common lack of information on the Greek, Spanish and Portuguese markets.

  The aim of this programme is to contribute to the improvement of cooperation between these three Member States, with a broader exchange of information on the various sectors, as well as in education and technological transfer, and to arrive together at a standard analysis of activities in the context of the Community programmes. The purpose is therefore to help them to proceed from purely competitive or parallel situations to develop mutually beneficial and more effective relations within the Community.

  This programme adopted a sector by sector approach in order to obtain a better insight into the problems. The sectors which are analyzed are significant both from a social and an economic point of view for each of the three countries and are classified as those "sensitive" sectors where there is a risk of overproduction for the Community as a whole and which are therefore being given special attention by the Commission.

Special attention is given to the restructuring of those sectors particularly affected by international economic development and internal Community trading, industrial and agricultural policies and their implications for employment and training of the workforce, so that integration and completion of the Single Market can be achieved under the best possible conditions for the three latest members of the Community.

The programme has a regional dimension, not only between the North and South of the Community, but also within each country. This is because a sector by sector approach also has a regional character: the various sectors have different geographical structures. Subsequently, a crisis in the sector not only harms the economy and employment overall, but also has a serious effect on defined areas. Accordingly, the examination of the effects of restructuring and development measures designed to upgrade the economy of areas affected by a crisis in a certain sector can only be carried out on a regional and sectoral basis.

TEXTILES AND READY-TO-WEAR CLOTHING

The first sector to be examined within the framework of this programme is textiles and clothing (1).

This sector was selected following consultations with the social partners and government representatives in the three countries. The sector remains one of the most important in Greek, Spanish and Portuguese industry, both in terms of production, exports and employment.

In all three countries, the sector is characterized by a high degree of decentralization, thus contributing to the maintenance and growth of employment levels in areas which are often more developed. For example, 80% of cotton production is concentrated in the RIO AVE region in Portugal and 70% of wool production in BEIRA INTERIOR, while in Spain, in the autonomous regions of Catalonia and Valencia, textiles account for 82.7% and clothing 37.6% of overall employment in the sector throughout the country. However, the predominance of the sector in certain geographical regions in these countries, may aggravate problems of development and unemployment in periods of crisis in the sector.

With regard to raw materials, Greece and Spain are the only cotton producers in the EC. Greece exports 50% of its production in cotton yarn. The main export markets for Greek cotton are east European countries.

Of the three, Spain is the one which manufactures mechanical plant. In spite of the good performance of its two loom-making companies, however, Spain remains as dependent on foreign manufacturers as the other two countries.

Generally, and in all three countries, the clothing sector is modernizing more slowly than the textile sector and this has become marked in the current decade.

PRODUCTION AND RESTRUCTURING IN THE SECTOR

Under the programme, it was judged necessary in the initial stage to take a critical look at the training available at various grades in order to identify potential gaps in training and further education of workers in manufacturing and product-related areas both in textiles and clothing, in the three countries. Thus 4 surveys were commissioned, which refer briefly to the economic situation and analyse extensively the availability of training in the sector at regional and national level for the period 1970-86.

In the 1970s the sector accounted for 20% of total employment in manufacturing in Greece and 22.5% of manufactured products, while it covered around 25% of the industrial exports of the country. Other EC countries were the main importers.

In the 1980s the textile sector suffered from a drop in production in all sub-sectors except yarns, cotton fabrics and knitwear, which maintain their international competitiveness. Those sub-sectors most affected by the crisis are woollen yarns and fabrics. The clothing sector is in a better position, having achieved a significant increase in production, mainly in the sub-sectors for men's, women's and children's clothing. 1981 and 1983 were the worst years in recent periods for textiles and clothing, in which problems that had their origin in the previous decade came to the fore.

Statistics relating to employment of women are rare and have only an indicative value. In spite of this, it is established that in 1980-85 women accounted for 55% and 65% of employment in the textile and clothing sectors, respectively. According to existing statistics, from 1980 onwards, the textile sector has been hit by unemployment while the clothing sector showed a small increase in the number of jobs. (2).

In the same period there was a worsening of the financial position and performance of many businesses. Their limited flexibility and capacity to adapt also contributed to their becoming problem-ridden. Thus, in 1983 the State Organization for the Restructuring of Businesses (OAE) was founded with the aim of restoring to health those businesses which came under the public sector's supervision and were subsequently earmarked for sale. Out of the 44 businesses taken under the OAE's wing, 11 are textile companies and 1 is a clothing company. Of the 11, one is the largest Greek textile company with 10 factories and 17,200 workers. For the time being many of these businesses continue to operate heavily subsidized by the State. While it is certain that this policy cannot be continued indefinitely because of the burden it places on the tax-paying Greek citizen, closure of these companies would pose the problem of what to do with 22,000 unemployed, which remains a chronic problem despite occasional statements to the contrary.

At the same time, there is the phenomenon also to be seen in other countries: an increase in the number of new, mainly small-sized textile companies.

In 1985 in Portugal the sector accounted for 28.5% of employment in manufacturing, 29% of total exports, while it contributed 20% to the Gross National Product.

The particularly important sub-sectors of wool and cotton have been suffering from a fall in productivity and higher unemployment in the last few years while the fabric and knitwear sub-sectors have increased their exports, mainly to EC countries.

The crisis undergone by the whole of the Portuguese economy in 1981 due to developments in the international market and inflationary trends, had a significant effect on the textile and clothing sector. Employment in the sector is characterized by contracts of limited duration. According to MTSS-Statistical Office figures, in June 1986 14.5% of those employed in textiles and 25.6% in clothing, worked on the basis of these contracts compared with the national average of 13.9%. Even though the changing fashions and seasonal requirements of clothing production and unemployment dictate the fragmented structure of part-time employment in the sector, this policy nevertheless weakens the bargaining position of workers and unions.

In Spain, the sector contributed to 8.3% of the Gross Domestic Industrial Product, while in 1985 it represented 4.4% of industrial exports and accounted for 1.7% of the total active working population of the country.

The sector underwent a recession in 1981 and 1982 but after 1985 it appears to be recovering. The sub-sectors of carpet-making, knitwear and synthetic fibres are showing a decrease while the following are increasing: wool, cotton and finished products. Generally the sector suffers from unemployment, as in most other European countries, where in 1985 alone, employment in the sector fell by 34.6%.

In Spain, unemployment in the textile sector in 1984 reached 35.1% and in clothing 35%, while in 1980 it was 22.8% and 19.9%, respectively. It is calculated that between 1979 and 1984 the number of jobs in Catalonia and Valencia fell by almost one quarter.

Employment of women is particularly high, as in the other two countries: in Catalonia it amounts to 53%, in Valencia 35%, while in the textile sector overall in 1986 it was 54% and in clothing 76%.

The hidden economy is particularly developed mainly in the knit-wear and clothing sector. Though it is not possible to collect official figures, it is estimated that in these two product categories 30-50% of production comes from the hidden economy.

Of the three countries, it is Spain which has made the most progress in modernization. Two big plans have been implemented on a national scale.

The 'Plan de Reconverción Textil' 1982-86, the objective of which is to change the sector from labour to capital intensive, was aimed mainly at very large export-oriented companies. In Catalonia, the plan concentrated on expanding and rejuvenating existing industries faced with problems, while in Valencia funds were channelled into creating new enterprises.

The results were generally viewed as positive and possibly reduced the shock of accession, which required the abolition of export subsidies and reduction of import duties, traditionally three times higher in this country. The plan was not considered, however, to be particularly well-adapted for Valencia, where there is a significant number of small businesses. Funds should have been made available for the long-term growth of the sector and for monitoring the viability of the activities which were financed.

The second Plan, 'Plan de Promoción de Diseño y Moda: Intangibles Textiles' relates to all the stages of clothing production, from fibre manufacturing to sewing and fashion show organization. The aim is to fortify the sector in the internal market and infiltrate the international market with better quality and creative developments.

In contrast to the previous plan, this requires vocational education, continuing training and collaboration between businesses and universities.

RESTRUCTURING AND MEMBERSHIP

It is not an oversimplification to state that this sector in the three countries is having to face similar problems. The crisis has mainly affected the larger enterprises who did not renew their plant in good time and who lack good management personnel.

The fall in both local and international demand for textile products and clothing in all three countries relates to increased competition from third countries in products of lower and medium quality as well as the gradual erosion of the relative advantage of lower wages. It is to be noted that in Portugal the hourly wage in fibre and yarn plants is the lowest in the EC and a little more than one-third of that in Ireland, which has the second cheapest labour force for this sector in the EC. In all three countries, the hourly wage in the sector is significantly lower than the average national equivalent even though it tends to be continually adjusted.

In Greece, where there is a similar situation, sector pay appears to be on the increase, approaching that of the rest of the manufacturing sector which generally rose on the accession of the country to the EC. Thus, during the period 1980-85 the annual rise of wages in the textile sector fluctuated between 17-25%.

From a thirty-country comparison drawn up by Verner International it appears that in 1984 Greece had the highest cost per worker in textiles immediately after the UK, followed by Ireland and Spain, while Portugal ranked lowest but one in front of Turkey.

On the other hand, the progressive weakening of protection for local production led to the adoption of a policy of wage-freezing, erosion of the nation's currency value and state intervention to limit the social consequences of the restructuring of the sector.

With regard to restructuring policy, wherever this was implemented there was undoubtedly a shrinkage in the number of jobs in all specializations. But it was the older and less-skilled workers who were the most affected. For example, it is estimated that in the Barcelona area of Catalonia 2,258 were adversely affected by the 1986 restructuring measures, of whom 770 were made redundant, while in 1984 in Valencia the measures undertaken for the adaption of the workforce resulted in 750 redundancies out of 8,500 workers.

According to estimations in Portugal, the wool sub-sector in the 'wool' region of BEIRA INTERIOR, is expected to lose 9,000 jobs by 1993 if the planned restructuring does not take place (and 3,800 if it does). The corresponding figures for the cotton area BACIA DO AVE are 13,200 and 4,000 jobs, out of the current total of 30,577.

This raises the question therefore of how far restructuring measures can pre-empt this haemorrhage of jobs and not only in the sectors of clothing and textiles, but also in all sectors undergoing restructuring. Existing figures do not permit us to draw any conclusions with any certainty.

Whichever restructuring policy is enforced, whether accompanied by measures for early retirement or voluntary redundancy of the surplus workforce as in the case of the Spanish plan, market forces, wherever they are allowed to operate freely, will dictate the choice between companies and will favour small and medium-size operations with younger workers. This evaluation, which is common to all three countries, relates also to other textile regions in EC countries such as Italy.

It is, however, very difficult to form a complete picture of the real state of sector employment due to the significance of the hidden economy and the amount of work carried out at home.

Moreover, the loss of a job has different consequences on the workers and is for instance connected with the degree of their dependence on their textile wage: whether it is their only source of income. Thus in Valencia, where the textile households also have agricultural activities, and consequently differentiated income sources, the crisis and unemployment did not have such a drastic impact as for other workers whose sole living wage stemmed from their employment in the sector.

This strategy is frequently to be seen in the clothing and knit-wear sub-sectors on the part of workers who differentiate their economic activity, returning to work at home when they become unemployed.

In Spain there is surplus labour among textile machinery operators and tool workers as well as factory warehouse and office support staff.

In Portugal and more specifically BEIRA INTERIOR local surveys showed that out of a total sample of 10,038 workers, one quarter are surplus, mainly in weaving (42%), while in BACIA DO AVE, out of a sample of 30,577 workers there was 28% overemployment, mainly in spinning.

In Greece, existing statistics in employment structure are poor and refer mainly to the 1978 census. It is therefore not possible to make conclusive judgements. It is calculated, nevertheless, that significant overemployment exists in the following professions: spinners, weavers, knitters and dyers in textiles as well as cutters-sewers in clothing.

Generally in the three countries sector analyses estimate that the sector will continue to manifest the same geographical breakdown. The system of sub-contracting will continue to operate, as will the façon method of clothing production (contracting out), on behalf of other or foreign companies. In Greece's case, for instance, 15-20% of textile workers are employed in this way. In clothing, professional mobility in the sector is very limited while in the remainder of the manufacturing sector it is practically non-existent. This appears to be the reason for the strategy frequently followed by unemployed weavers in Spanish Alcoy who set up, along with fellow workers and family members their own loom and manufacture to order.

The limited mobility of surplus labour out of these sectors to others in the manufacturing area are an inherent weakness of economic restructuring programmes in textile regions suffering a crisis.

The employment situation is further exacerbated if one takes into account that the import of new technologies is followed by the recruitment of new personnel rather than retraining the existing human resources. This gives rise to the phenomenon in all three countries of unemployment existing simultaneously with the lack of specialized staff with particular professional qualifications.

EDUCATION

Both Greece and the two countries of the Iberian Peninsula allocate only miniscule amounts of their GNP to education. In all three countries there is a lack of educational tradition in the sector. Generally, the majority of workers have little education. In Portugal, it is estimated that 92% of workers in clothing, knitted fabrics, manufacturing, weaving, knitting and finishing of synthetic, cotton, wool and mixed fibres has had only elementary 6-year schooling, while in Spain the corresponding figure is half the relative workforce. In Greece, where we do not have corresponding figures available, the situation is similar if one takes into acount that the majority of even the specialized technical staff obtained their qualifications from on-the-job experience, learning their profession while apprenticed to other experienced technicians, who often themselves have no theoretical training. Generally the public sector in all three countries makes training available as does, to a lesser extent the private education sector. (3).

The ministries of education and labour force employment organizations attached to the labour ministries are the main providers of training schools for the sector.

Moreover in Spain, training colleges (centros docentes) of private or ecclesiastical origin operate under the supervision of the Ministry of Education, providing middle-grade vocational training as well as upper and post-graduate studies.

With regard to lower-grade vocational training, in Greece this is provided by the OAED, in Spain by the INEM and in Portugal by the IEFP, either directly or in cooperation with local sector authorities, and it is theoretically available throughout each country.

More specifically the Greek OAED provides three types of training for the sector: a 2-year apprenticeship specializing in cutting and sewing of clothing, accelerated training in weaving, cutting and sewing and for the occupations of knitting and sewing machinery mechanics with a duration of 4 and 9 months respectively. In addition, intensive retraining of the current workforce (in the space of a few weeks) in the abovementioned skills is also carried out.

In Portugal, the IEFP has cooperated with industrial organizations and certain unions to provide more effective training in various economic sectors by establishing training centres (centros protocolares) where the capital and 95% of operating expenses are put up by this state organization. During 1983 and 1984, two such centres were put into operation for the textile sector: one in the capital city and the other in the second largest town, Oporto. They provide similar basic training and retraining of 5 1/2 - 12/13 months, while in 1987 a 3-year course for foremen/supervisors was inaugurated.

Finally, in Spain such training is provided by the INEM in cooperation with subsidized public and private centres. It covers a large range of skills as well as higher-grade training. The training usually lasts 200-800 hours.

Middle-grade vocational training in all three countries is supervised by their respective ministries of education. In Greece, there are 2 technical Lykeion with 3-year courses in textile skills and one technical school with a 2-year course for textile assistants. Those students having completed their basic compulsory 9-year scholastic education are accepted.

In Portugal, graduates of 9-year schooling (ensino secundario unificado) can follow three-year courses for production, chemical and design technicians in textiles. These skills are provided in 5 of the country's educational institutions. Orientation of students to the sector is facilitated by following certain voluntary lessons during the final three years of their compulsory education.

In Spain, in contrast to the other two countries, training under the supervision of the Education and Science Ministry (systema educativo formal) is partly decentralized administratively into some specialized textile regions such as the autonomous regions of Catalonia, Valencia, Andalucia and Galicia who are themselves responsible for managing and controlling education in their area. The country's constitution also makes provision for transferring authority in the educational sector to each autonomous region, while only monitoring and coordination activities remain the responsibility of the central authorities.

Middle-grade vocational training in the textiles sector within the framework of the education system of the Education Ministry is divided into two cycles. The first or lower (formación profesional primer grado) requires the student to have completed the compulsory 8-year basic education but does not insist on a certificate of graduation - a particular characteristic of the Spanish education system - and leads to technical assistant skills in textiles or clothing. It is a two-year cycle and from there one can enter the labour market directly or proceed to the three-year upper cycle of secondary education (BUP) or to the second vocational training cycle of two or three years (formación profesional de segundo grado). This cycle leads to a qualification as specialized technician in textile skills, fashion design and clothing manufacture. This second cycle is also divided into two categories. The first, 2-year course, is more general in character while the second, 3-year course, leads to specializations according to the requirements of industry in fashion, clothing and textiles.

It should be noted, however, that very few students take these courses: in the academic year 1983-4, 597 graduated from the first cycle and 55 from the second out of a total student population of 108,173 and 42,481 respectively.

In all three countries there are many privately-owned schools which provide middle-grade training in fashion.

In Spain, however, almost all provinces have schools of applied arts (escuelas de artes aplicadas y oficios artisticos) under the responsibility of the Education Ministry and provide 5-year training for design of textile products and fashion for 12-year-olds onwards. It should be noted that in contrast to the other two countries, tertiary level university education in the Greek textile and clothing sector is completely non-existent, if one excludes the chemical engineers of the Polytechnic whose skills touch on those of the sector.

In the textile sector there is only one department operating in the Piraeus Technological Training Institute (TEI), and that with serious gaps. It is of 3-year duration aimed at Lykeion graduates and has 4 streams: spinning, weaving, knitting and dyeing-finishing. The TEI degree is not equivalent to that of a university degree.

Tertiary-level education in clothing is completely non-existent within the framework of the Ministry of Education.

In Portugal university-level training needs are covered by the University of Minho in the Rio Ave region and the University of the Beira Interior in the Corvilha region. The former provides full training for production and textile engineers and organizes training seminars for technicians in collaboration with businesses. It has its own workshops and awards scholarships abroad to its teaching personnel. This university has become sensitized to the need for trained teaching personnel in the sector, although certain activities have to be curbed due to lack of funds.

In Spain, there is a relatively large number of schools which provide university training under the aegis of their Ministry of Education. This is divided into 3 cycles of 3, 2 and 3 years' duration. This leads to post graduate studies and the award of a teaching certificate. Specialization as industrial engineer, a 6-year course, includes a qualification exclusively devoted to the textile industry. The qualification of industrial engineer-technician, a 3-year course, also includes textiles and is provided in five of the forty five university colleges of industrial and technical engineers (escuelas universitarias de ingeneria tecnica industrial) and one offers specialization in knitwear.

In post-graduate studies there are 13 higher technical colleges for industrial engineers (escuelas tecnicas superior de ingenieros industriales) which award doctorates, of which, however, only that of Terassa has a textile specialization.

BASIC AND APPLIED RESEARCH

With regard to cooperation between industry and universities, it should be noted that industrial research in Greece and Portugal is almost at the same non-existent level, centred on chemicals-pharmaceuticals and the electric-electronic sectors respectively. In Spain, industrial research is somewhat more significant.

In Greece, no research is being carried out on the application of imported technology or on the upgrading or development of new products. The sector depends exclusively on foreign research on technology and the international market.

In Portugal the Centre of Textile Technology (Centro de Tecnologia Textil) operates within the framework of the University of Minho and provides a wide range of services to industry from quality control, personnel training, technical assistance through to original research and business restructuring on the basis of co-financing by state and industry.

In Catalonia there are old-established institutes for basic and applied research in textiles: the Instituto de Investigación Textil of Terassa and the Instituto Tecnologia Quimica y Textil of Barcelona. They have mixed financing, while in Alcoy in the Valencia region, the Instituto de Investigación Textil has opened and there are plans for the regional industrial associations to take it over.

Research is also carried out at university centres which offer specialization in textile mechanics, e.g. the Higher Technical College Centre for Industrial Engineers (Escuela Tecnica Superior de Ingenieros Industriales) at Terassa, which has developed a CAD system.

Since 1987, research is also being carried out in AITEX (Asociación de Investigación de las Industrias de Textiles) which was created by the Union of Textiles Business and the Valencia Institute of Small and Medium-sized Industry, in order to improve the quality of textile products.

The AITEX has a documentation centre and organizes, amongst others, personnel training seminars and lectures by experts.

In all three countries the link between industry and research is tenuous. Generally any research carried out relates to the solution of immediate needs of businesses which do not have their own quality control and testing laboratories. In all three countries both university and industry have developed in parallel and to a large extent in isolation.

<u>NEW SKILLS: COMMON NEEDS</u>

From meetings organized in the sector at national level as well as with the social partners in the sector at Community level and interested parties of the EC Communities in Luxembourg (4), certain common needs were identified for each country.

First priority for all three countries is to improve competitiveness and productivity in the sector and increase the added value of the products.

At the level of professional qualifications, this translates into the need for a properly trained labour force in all the stages of the textile chain from the processing of raw materials to sewing of clothing, and throughout the hierarchy: from the level of skilled technician up to the upper management echelons of production and administration.

More specifically, in the textile sector and new technologies, the introduction of automation dictates the need for proper training of maintenance personnel, production supervisors and foremen for labour and machines, who know about production planning and maintenance of the machinery. In the production process there is a need for upgrading of the dyeing, weaving, spinning, finishing and printing processes, while there are not enough skilled sock machine mechanics, knitters of synthetic fibres and spinners of wool and cotton yarns. On the commercial side more skilled personnel is required in exports, marketing, warehousing and quality control.

In the clothing sector, changes introducted by the CAD system have directly influenced design and production. In product development, more stylists, pattern-makers and modelists are needed, in production, more skilled cutters and sewers, and in commerce more export personnel are necessary. The absence of suitably trained management personnel is also felt in this sector as well as sewing-machine and maintenance mechanics for new technology machinery. It is generally accepted that most of the existing training programmes do not cover immediate requirements in skilled personnel in the sector.

Generally, new technology is introduced in practice in the sector without innovation on the part of business. Thus while technological changes frequently affect working procedures they do not have an immediate effect on the professional qualification of workers because the new technological demands are covered mainly through reorganization of work procedures rather than with the specialization and general improvement in the level of knowledge of the personnel.

The most significant changes in production are related to the introduction of electronic machinery which upgrades the role of foremen and supervisors in the factory. For this reason, CEDEFOP is now researching the need for training supervisors in the sector and is willing to promote suitable training programmes in each of the three countries.

Moreoever, international competition and the general use of new technologies in production and commerce, broadens the dependence of the sector on foreign companies and other centres and gives rise to the problem of technology transfer in the three countries. But this matter, along with the results of our research into training of supervisors, will be the object of a new document.

NOTES

1. This point concerns both textiles and clothing. Our reference to textiles is only for reasons of abbreviation and includes clothing, except where each section is separately mentioned by name. This does not apply to the point on training, which clearly differentiates between the two sectors.

2. In the textile and clothing sector, it is difficult to collect statistics, because firstly these sectors tend to be grouped with shoes and leatherware, and secondly because of the large number of small businesses and the proportion of work carried out at home and in the hidden economy, particularly in the clothing sector.

3. Attempts to present current training availability in the sector for the three countries within the framework of this document is of necessity brief and refers only to the more significant educational bodies. The reader may refer to the attached bibliography for more information.

4. Meetings:

a) Luxembourg	2, 3 April 1987
b) Barcelona	6, 7 June 1987
c) Athens	5, 6 November 1987
d) Lisbon	10 December 1987

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