

COMMISSION OF THE EUROPEAN COMMUNITIES

COM(79) 166 final

Brussels, 3 April 1979

PROPOSAL FOR A COUNCIL DECISION
ADOPTING A SECOND MULTIAANUAL RESEARCH AND
DEVELOPMENT PROGRAMME FOR THE EUROPEAN COMMUNITY
IN THE FIELD OF TEXTILE AND CLOTHING
(Indirect action)

(presented by the Commission to the Council)

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Annexes.

(Technical annex: the detailed description of the research topics making up the programme is at the disposal of whom it may concern).

1. Proposal for a Council decision on the adoption of a second multiannual Research and Development programme in the field of Textile and Clothing.

Summary.

The present proposal covers five research and development actions in the field of textile and clothing.

The research areas are the following:

- 1) Garment physiology and construction,
- 2) Quality of knitted fabrics and knitwear articles,
- 3) Application of new spinning technologies in the wool industry,
- 4) Upgrading of linen,
- 5) Pollution treatment and water recycling in textile finishing enterprises.

A budget estimated at 4.2. million European Units of account on Community budget and 4.05 million European units of account by the textile industry, and a staff of two agents are necessary for the implementation of this 3-year programme.

.../...

Presentation of programme

Following a series of consultations with the various branches of the textile and clothing industries, and following proposals made by the industry, the Commission is submitting a second multiannual joint research and development programme for a 3-year period, the expenditure of which is estimated at 8. 25 M. EUA (4.2. M. EUA to be shouldered by the Community) for the whole period.

This activity is taking place in the context of the general guidelines for a textiles and clothing industry policy which the Commission approved on 19 July 1978 at its 482nd meeting (COM(78) 362 final).

The research programme covers 5 actions dealing with several branches of activity (cf. technical annex).

It will be carried out in the form of a cost-sharing contact with Comitextil with the participation of national research bodies and of private industry.

The programme is justified in that :

- the sector of the textile and clothing industries is made up of a huge number of small and medium-size enterprises. Those enterprises encounter difficulties when it comes to deciding on the choice of investments, production levels and export opportunities, but they are not in a position to launch by themselves a wide-ranging technological research programme, the findings of which, when put into application, would mainly lead to new technologies, new products and new services for the benefit of the whole textile and clothing sector;
- the textile and clothing industries occupy an important position in the Community economy; they provide approximately 10% of wage-earning industrial jobs and it is estimated that, in terms of added value, they account for some 8 % of the Community's industrial activity;
- their main features are : numerous processing stages and a very large number of undertakings; a preponderance of small and medium-sized undertakings in some subsectors, particularly in the clothing industry; a range of production that is highly diversified as to products and outlets, very marked fluctuations in demand; a very high proportion of women in the labour force, heavy concentration in certain regions, where they represent a large proportion of economic activity;
- the European textile industry cannot rest on the laurels of its present technology and markets awareness. It will inevitably be caught up and permanently overtaken by rising costs. - It must therefore

make unflagging efforts to improve and renew its techniques and technology, of which joint research and development are the prime movers.

On the other hand, as this second programme is the continuation of the initial programme about to be completed, the national industries have now acquired the habit of working together in the research field at a time when research has become more indispensable than ever.

For it is now admits the economic difficulties caused by the oil and raw materials crisis and the difficulties arising in international trade, more particularly with developing countries and State-trading countries selling their products at abnormally low prices, - that the European industry must step up its efforts to improve its competitive position, both at home and in the world.

The European textile and clothing industries offer quality, imagination and taste; their survival will depend on their ability to adapt quickly to markets and especially to the changing market of fashion. They will succeed only by mobilizing all their resources; in such an effort research plays a crucial and essential part.

Content of the programme:

The topics or projects making up the programme were selected after lengthy debates and then finalized by the national and European professional bodies, with the cooperation of the joining research organizations. The financial commitment of the textile organizations in the participating countries (half the total budget of the new programme) bears witness to their conviction as to the usefulness of the programme.

This file is thus the results of many months of intensive preparatory work by representatives of the textile industries and laboratory experts. After the topics had been decided upon, Technical and Scientific Committees were appointed for each topic, with the following tasks:

- . to describe the successive phases of each project;
- . to make a time-table of the phases extending over three full years;
- . to share out the work between laboratories, phase by phase,
- . to set up liaison procedures for inter-laboratory work.

The projects had to comply with the following criteria, to differing extents, but always so as to obtain the best possible classification score:

1. improve the competitiveness of the European textile industry in the world,
2. meet the requirement and expectations of consumers,
3. improve working conditions or production conditions,
4. introduce new methods, machines or products,
5. economize on energy, materials and working time,
6. protect the environment,
7. contribute towards the maintenance and improvement of the general economy of the E.E.C.

None of the subjects was selected without previous examination of the technical literature (journals, patents...), to obviate the risk of duplication and take advantage of all existing scientific and technical knowledge right from the start. In any case, the high competence of the laboratories in their respective fields reduced the risk of duplication to an unlikely coincidence.

The laboratories were selected on the basis of their internationally recognized competence in the textile and clothing sectors. Some countries have institutes dealing with several technologies; they are therefore participating in several projects (two subjects in five cases (WIRA, SHIRLEY, LIRA, TNO, DWFI, Stazione Sp. Cellulosa), sometimes 4 (Centexbel and ITF), but more usually one subject only, as in the case of the eleven specialist institutes (BEITEM, LBD, CETIH, ITL, Tecnotessile, O. Rivetti, BPI, Tech., Forsch, Texfo and LIRA)). Nothing is therefore overdone, but projects are apportioned in accordance with qualifications.

Research topics forming the programme.

The detailed programme per project is listed in the technical annex.

Project Nr 5 - Garment physiology and construction.

This project undoubtedly belongs to the textile sector since garments, which account for more than half the output of the textile industry, are basically the sum of their components parts, i.e. there is close interdependence in the design of an article between the type of fibre, the method of spinning and weaving, and even the making-up stage.

In seeking technical possibilities, this project aims at progressing towards a harmonization of the systems of sizes existing at Community level in order to facilitate trade. Moreover, it tries to make the wearer more comfortable, thus improving his working conditions and even his safety, and it aims at increasing the market value of the European products which will take this quality factor into account.

Project Nr 6 - Quality of knitted fabrics and knitwear articles.

Knitted fabrics represent 1/8 of textile production. The project aims at an improvement in quality: dimensional stability, improved properties of use and maintenance of appearance, over a vast range of products and fibres. The aim is to improve competitiveness by a better price quality ratio and a quicker reaction to market requirements. The large number of laboratories taking part in the project is due to the wide variety of articles studied and the very wide geographic distribution of this sector. However, the spread of improved techniques will be all the wider, the greater the number of laboratories providing results.

Project Nr 7 - Application of new spinning technologies in the wool industry.

The European wool industry alone employs 300,000 people and accounts for 52% of world production of combed yarns and 56% of carded yarns. The requisite experience is therefore available for a technological leap forward, backed by appropriate textile research, but the makers of process control machinery and equipment will only take an interest in this market, particularly the carded yarn market (not very important on the world scale, but important to the Community, and particularly to certain regions),

if the laboratories introduce innovations. Such technological progress (introduction of open-end spinning and product-characterization tests) is indispensable for better economic competitiveness and the improvement of products.

Project Nr 8 - Upgrading of linen.

This project took shape as a result of cooperation started between certain countries and laboratories by the International Linen and Hemp Commission (CILC). Closer cooperation would be obtained within the COMITEXTIL framework, with the support of the EEC, to speed up the technological changes envisaged, from the fibre to the finished product. The agricultural phase is already assisted by the EEC: the industrial phase must also make progress, to reduce costs, improve the regularity of products, increase productivity, confer new properties on the fabrics and conquer new markets.

Project Nr 9 - Pollution treatment and water recycling in textile finishing factories.

The European finishing industry uses 500 million m³ of water per annum (and supplies are limited), which it discharges as polluted effluent; this situation is unacceptable and heavily taxed. The purpose of the project, which concerns the most heavily polluting sectors, is to determine exactly the optimum conditions of waste water treatment, complete or partial recycling, and the elimination of solids. The institutes taking part (Holland, Belgium, Italy, France and Great Britain) have considerable laboratory and industrial experience.

Budget.

For the three year period, it is estimated that the expenditure incurred in the performance of the programme, including the expenditure for two officials, which shall be borne by the Community shall amount to 4.2 M. EUA out of a total of 7.95 M. EUA (see financial documents for additional information).

Those funds will serve to finance the cost-sharing research contracts to be concluded by the Contractor (Comitextil) with the laboratories of the member States and to cover the expenditure for the management and co-ordination of the programme.

Implementation and Management of the programme.

The Commission shall be responsible for managing the programme. The Services of the Commission, together with the Contractor (COMITEXTIL) and its management council, already appointed for the first programme, shall ensure the management of the programme.

The Scientific and Technical Research Committee (CREST) shall be regularly informed of the progress of work and of the results obtained by research .

Dissemination of information.

The dissemination of the information resulting from the execution of the programme shall be governed by Council Regulation (EEC) Nr 2380/74 of 17 September 1974.

FINANCIAL ASPECTS.

1.- Budget Chapter : 3720.

2.- Heading of the Budget title: second sectoral Programme for Research and Development in the field of textile and clothing.

3.- Juridical Basis.

- pursuant to article 235 establishing the E.E.C.
- Council decision.

4.- Description, objectives and justification of action.

4.1. Description

The action aims at:

- the improvement of the competitiveness of the European textile industry in the world,
- meeting the requirements and expectations of consumers,
- the improvement of working conditions or production conditions
- the introduction of new methods, machinery or products,
- economy on energy, materials and working time
- environment protection,
- contributing towards the maintenance and improvement of the general economy of the E.E.C.

4.2. Objectives.

To understand basic data (physico-chemical structure of natural and man-made fibres, identification of relationships between structures and properties, devising of ways and means of modifying structure in order to change properties either to remedy natural defects or to confer improved or completely novel properties such as de-creasability flame-proofing, easy-care properties).

To devise more efficient manufacturing processes (which involves studying both machines and processes); this work requires a knowledge of existing technologies and of recent research findings, so that steps can be taken to prepare for the transfer of knowledge acquired to the stage of industrial application.

4.3. Justification.

Research and development is an essential preliminary to the development of new and improved products and the maintenance of market shares despite increased competition throughout the world; it thus forms an essential component of Community strategy in the textiles sector. (1)

5. Financial incidence of action in M. EUA (in current prices)

5.0. Financial incidence on expenditure.

5.0.0. Total cost during the term envisaged.

- on Community budget :	4.2. M. EUA
- by the "Industry " sector:	4.05 M. EUA
	8.25 M. EUA
Total cost	8.25 M. EUA

5.0.1. Multiannual Schedule.

Multiannual actions to be entered in the budget as a single commitment appropriation for the whole term envisaged and as payment appropriations.

Table I.

	Commitment schedules	Schedules of foreseeable payments needs in terms of payment appropri.		
		1st year	2nd year	3rd year
(single) commitment appropriation depending on Council Decision	4.2	1.75	1.575	0.875
	TOTAL		4.2 MUCE	

Those actions continue until the end of the third year, Table II shows the schedule for possible payments.

(1) At its 482 nd meeting on 19th July 1978, the Commission approved a communication to the Council on general guidelines for a textiles and clothing industry policy (COM 78-362 final of July 20th 1978)

TABLE II.

	<u>Actions of the programme</u>	<u>Management of the programme.</u>	
1st year	1.650	0.100	1.750
2nd year	1.475	0.100	1.575
3rd year	0.775	0.100	0.875
TOTAL	3.900	0.300	4.200
			in M. EUA

5.0.2. Utilization rate of the payment appropriations in 1st exercise.

1st Semester of 1st year 30% i.e. 0.500 M. EUA
2nd semester of 1st year 70% i.e. 1.150 M. EUA

5.0.3. Method of calculation.

Since the expenditure in respect of contracts vary according to the nature of the subjects and the different legal systems of the participating laboratories, it is not possible to set up a uniform method of calculation for the participation rates per project.

In any case, the contractor and its management Council for the research programme have implemented the annual breakdown of the working expenditure of laboratories for each project, as set out in the summary table giving the amount of expenditure.

Laboratories expenditures broken down per year and per project.

in E.U.A.

Topics (1)	1st year	2nd year	3rd year	TOTAL
1. Topic 5	<u>246.000</u>	<u>344.000</u>	<u>396.000</u>	<u>986.000</u>
1.1. Personal costs	186.000	261.000	299.000	746.000
1.2. Overheads	9.000	12.000	14.000	35.000
1.3. Laboratories costs	9.000	12.000	14.000	35.000
1.4. Cost for materials	7.000	9.000	10.000	26.000
1.5. Cost for instruments	35.000	50.000	59.000	144.000
2. Topic 6	<u>323.000</u>	<u>453.000</u>	<u>518.000</u>	<u>1.294.000</u>
2.1. Personal costs	265.000	371.000	423.000	1.059.000
2.2. Overheads	13.000	18.000	22.000	53.000
2.3. Laboratories costs	13.000	18.000	22.000	53.000
2.4. Cost for materials	16.000	22.000	26.000	64.000
2.5. Cost for instruments	16.000	24.000	25.000	65.000
3. Topic 7	<u>255.000</u>	<u>357.000</u>	<u>408.000</u>	<u>1.020.000</u>
3.1. Personal costs	175.000	245.000	280.000	700.000
3.2. Overheads	9.000	12.000	14.000	35.000
3.3. Laboratories costs	9.000	12.000	14.000	35.000
3.4. Cost for materials	12.000	17.000	19.000	48.000
3.5. Cost for instruments	50.000	71.000	81.000	202.000
4. Topic 8	<u>644.000</u>	<u>901.000</u>	<u>1.030.000</u>	<u>2.575.000</u>
4.1. Personal costs	451.000	631.000	720.000	1.802.000
4.2. Overheads	22.000	31.000	37.000	90.000
4.3. Laboratories costs	22.000	31.000	37.000	90.000
4.4. Cost for materials	52.000	72.000	32.000	206.000
4.5. Cost for instruments	97.000	136.000	154.000	387.000
5. Topic 9	<u>338.000</u>	<u>473.000</u>	<u>542.000</u>	<u>1.353.000</u>
5.1. Personal costs	250.000	350.000	400.000	1.000.000
5.2. Overheads	13.000	17.000	20.000	50.000
5.3. Laboratories costs	13.000	17.000	20.000	50.000
5.4. Cost for materials	14.000	19.000	21.000	54.000
5.5. Cost for instruments	48.000	70.000	81.000	199.000
TOTAL TOPICS	1.806.000	2.528.000	2.894.000	7.228.000
<u>CENTRAL MANAGEMENT EXPENDITURES</u>				
<u>Management costs:</u>				
administration costs	90.000	126.000	145.000	361.000
Overheads	14.000	20.000	24.000	58.000
<u>Transit expenditures:</u>				
Meetings costs	36.000	51.000	58.000	145.000
Technical and Material services	27.000	38.000	43.000	108.000
Unforeseeable	13.000	18.000	19.000	50.000
GENERAL EXPENDITURES TOTAL	180.000	253.000	289.000	722.000
GLOBAL AMOUNT	1.986.000	2.781.000	3.183.000	7.950.000

(1) Topics numbers follow number applied for the first collective research programme.

Estimated breakdown of E.E.C. contribution.

in E.U.A.

Budget Year	Annual breakdown (1)	Work of laboratories per year (1)	EEC theoretical contribution (+ 49%)	advance payment at 1.1.79 to be audited on 31.12.81 (cash fund referred to in Art. 5-6 of the general terms and conditions. Contract 195-75-12 IRAB-Annex 3, of 1st Program.)	estimated E.E.C. contribution
1st year	25%	1.986.000	974.000	+ 676.000 (2)	1.650.000
2nd year	35%	2.781.000	1.366.000	+ 112.000	1.478.000
3rd year	40%	3.181.000	1.560.000	0	772.000
3 year	100%	7.950.000	3.900.000		3.900.000

(1) cf. Annual breakdown of laboratory operating costs.

(2) i.e. 70% of the amount contributed for the 1st budget year (instead of the 50% effectively paid for programme Nr 1), taking into account the important advance investments for work to be made.

List of laboratories participating
to the programme.

Countries	Laboratories	Address
BELGIUM	Centre Scientifique et Technique de l'Industrie Textile Belge (CENTEXBEL)	Rue Montoyer 24 1040 BRUXELLES
	Onderzoek en voorlichtings- centrum voornijverheidsteelten (BEITEM)	8810 Rumbeke Provincie West-Vlaanderen
NETHERLANDS	Vezelinstituut TNO (TNO)	Schoenmakerstraat,97 Postbus,110 DELFT
	Instituut voor Landbouw- techniek en Rationalisatie (LBD)	Postbus 43 - Wageningen
FRANCE	Institut Textile de France (ITF)	35,rue des Abondances F 92100 BOULOGNE- SUR-SEINE
	Centre d'Etudes Techniques des Industries de l'Habillement (CETIH)	14, rue des Reculet- tes F 75013 PARIS
	Institut Textile du Lin (I.T.L.)	5, rue du Cardinal Mercier F 75009 PARIS
ITALY	Tecnotessile - Centro di Ricerche - S.p.A.	Via Valentini,14 I 50047 PRATO (Firenze)
	Centro Riccerche e Sperimen- tazione per l'Industria Laniera "Oreste Rivetti" (Rivetti)	5 Piassa Lamarnora I 13051 BIELLA
	Stazione Sperimentale per la Cellulosa, Carta e Fibre Tessili Vegetali ed Artificiali (Stazione Cell.)	Piazza Leonardo da Vici,26 I 20122 MILANO

Countries	Laboratories	Address
F.R.G.	<p>Bekleidungsphysiologisches Institut e.v. (B.P.I)</p> <p>Deutsches Wollforschungsinstitut (D.W.F.I)</p> <p>Institut für Textiltechnik (TECH)</p> <p>Forschungsinstitut für Bastfasern e.v. (T.F.)</p>	<p>Schlosse Hohenstein D 7124 BOENNIGHEIM</p> <p>Veltmanplatz, 8 D 5100 AACHEN</p> <p>Burgstrasse, 29 D 7410 Reutlingen Bahnhoh Am Bahnhof 6, Leinenmeisterhaus D 4800 BIELEFELD</p>
UNITED KINGDOM	<p>- Wool Industries Research Association (WIRA)</p> <p>- Lambeg Industrial Research Association (LIRA)</p> <p>- Cotton, Silk & Man-Made Fibers Research Assoc. Shirley Institute (SHIRLEY)</p> <p>- Hosiery and Allied Trades Research Association (HATRA)</p>	<p>Headingley Lane Leeds LS 6 1 BW</p> <p>Lisburn Bt 27 4 RJ Northern Ireland</p> <p>Didsbury Manchester Mro 8 RX</p> <p>7 Gregory Boulevard Nottingham NG 7 6 LD</p>

Laboratories participation broken down per project.

Countries	Laboratories	Topics n°	5	6	7	8	9	Programme leader (P) Topics leaders (p)	
B	CENTEXBEL			x	x	x	x	p.6 J.STRYCKMAN (B)	
	BEITEM					x			
NL	TNO			x		x	x		
	LBD					x			
F	ITF			x	x	x	x	P. M. CORDELIER(F)	
	CETIH	x						p.9. B.KOUSSENS(F)	
	ITL					x			
I	TECNOTESSILE				x			p.7. M. BONA(I)	
	RIVETTI						x		
	STAZIONE CELL.			x		x			
FRG	B P I	x						p.5. J.MECHEELS (FRG)	
	D W F I			x	x				
	TECH.			x					
	T.F.					x			
U.K.	WIRA				x		x		
	LIRA					x			
	SHIRLEY	x					x	p.8. HAC TODD(RU)	
	HATRA			x			x		
			3	7	5	9	7		
6	Number of Institutes 18		Total participations 31						

6. Types of control to be applied.

6.1. The services of the Commission and the Management Council of the programme shall control the implementation of the research contract.

Budget implementation : D.G. on Financial Control

Regularity of expenditure: D.G. III.

7. Financial implication of the action during the entire period

(in M. EUA)

7.0.1. Expenditure (costs) shouldered by the Community budget

- 3.9)

- 0.3

4.200

7.0.2. Expenditure (costs) shouldered by the industry

4.05

TOTAL

8.25 M.EUA

8. Information on necessary personnel and operating expenses implementing the action.

8.0 Necessary personnel

1.A

1.C) i.e. 0.300 M.EUA

} *

9. Funding action.

Funds to be included in future budgets.

* Temporary agents for the duration of the programme

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ANNEX 1.

DECISION OF THE COUNCIL ADOPTING
A SECOND MULTIANNUAL RESEARCH AND DEVELOPMENT PROGRAMME
IN THE FIELD OF TEXTILE AND CLOTHING FOR THE EUROPEAN
ECONOMIC COMMUNITY.

(Indirect action)

COUNCIL DECISION

ADOPTING A SECOND MULTIANNUAL RESEARCH AND
DEVELOPMENT PROGRAMME FOR THE EUROPEAN
COMMUNITY IN THE FIELD OF TEXTILE AND CLOTHING.

(Indirect action).

The Council of the European Communities:

- Having regard to the Treaty establishing the European Economic Community, and in particular Article 235 thereof,
- Having regard to the proposal from the Commission,
- Having regard to the opinion of the European Parliament,
- Having regard to the opinion of the Economic and Social Committee,

Whereas, on 14th January 1974, the Council has adopted a resolution on the coordination of the national policies and on the definition of measures of Community interest in the science and technology sector; (1)

Whereas, pursuant to Article 2 of the Treaty, the Community has the task of promoting throughout the Community a harmonious development of economic activities and a continuous and balanced expansion;

Whereas, on 14 th April 1975, the Council adopted a programme of technological research in the textile sector (2).

Whereas the research programme which is the subject matter of this decision constitutes the continuation of the above mentioned programme and is working towards many objectives, such as : improved competitiveness of the European textile and clothing industry on the world scene; the improvement of working conditions and of production conditions ; needs and expectations of consumers; introduction of new methods, machinery or products; economy on energy; environment protection; representing a decisive stage in the development of the textile industry which is a sector of economic importance to the Community.

1. Official Journal Nr C 7/6 of 29.1.1974 p.1
 2. Official Journal Nr L 111/34 of 30.4.1975 p.43

Whereas this programme comes within the framework of a cooperation which has already been going on for several years within the textile industry, and this provides guarantees as to its rational and fruitful performance;

Whereas from that moment the research action projects which are the subject matter of this decision appear to be necessary for the carrying out of objectives stated in the Treaty within the working of the Common Market;

Whereas the Commission in its communication to the Council of 20 July 1978 on General Guidelines for a textiles and clothing industry policy recommends technological development (COM/78 362 final)

Whereas the Treaty does not provide the specific powers necessary for this purpose;

Whereas the Scientific and Technical Research Committee (CREST) has given its opinion concerning the proposal from the Commission;

HAS DECIDED :

Article 1.

To adopt a Community programme for research and development in the textile and clothing sector, as described in the annex hereto, for a period of 3 years.

Article 2.

The global requirements for the total period of the programme are estimated at 4.2. million EUA and a staff comprising two agents, the EUA being defined by article 10 of the financial regulations of 21st December 1977. These numerical estimates are only intended to be indicative.

Article 3.

The Commission shall carry out the programme by means of contracts. In order to assist it in this task, there shall be set up an advisory committee on management of the programme of research and development in the field of textile and clothing, whose terms of reference and composition shall be defined in accordance with the Council Resolution of 18 July 1977 on advisory committees on research programme management (O.J. N° C 192 of 11 August 1977, p. 1).

Article 4.

The information resulting from the execution of the programme shall be disseminated in accordance with Council Regulation (EEC) n° 2380/74 of 17 September 1974 (1) adopting provisions for the dissemination of information relating to research programmes for the European Economic Community.

For the Council,

Done at Brussels, ...

the President.

(1) O.J. N° 1 255 of 20.9.1974, p. 1

ANNEX.

The programme covers the 5 actions described hereunder:

1) Garment physiology and construction.

The project is subdivided into two sub-projects:

- transposition of garment physiology principles into practice in the textile and clothing industry;
- garment construction - harmonization of size systems.

There are five main objectives:

- improvement of the trade balance of the concerned industries;
- possibility to scientifically prepare the garment characteristics corresponding to qualification so as to ensure consumer protection;
- optimum duration of articles and comfort in wear, promoting the economy of materials, revalorisation of the professions of the clothing sector, and seeking technical possibilities of progressing towards a harmonization of the systems of sizes existing at Community level.

2) Quality of knitted fabrics and knitted articles.

It aims at revealing the parameters which influence the quality of the products and the incidence of variations in those parameters upon quality.

3) Application of new spinning technologies in the wool industry.

The aim of this project consists in developing new spinning technologies for wool and its blends and, especially, in carrying out pilot tests on "open-end" machinery. This enables to attain production speeds much superior to those attained with conventional processes (5 to 10 times superior); to this day those systems have aroused the interest of the cotton industry and of sectors dealing with certain man-made fibres. Their adoption in the wool sector first calls for the solving of numerous specific problems linked to the chemical nature of the fibre and of its natural impurities.

4) Upgrading of linen.

The objectives are the following:

- to increase the quality of the products. (nowadays the flax fibre is fashionable)
- to improve the technological aspect of the equipment in order to obtain new products.
- attractiveness of research for industry: increased productivity, conferring new properties on the fabrics, improving the regularity of products.
- improvement of production in cooperation with the European agricultural sector.

5) Pollution treatment and water recycling in textile finishing enterprises.

The reclamation of polluting products calls for a preliminary investigation which will be effected through the creation of a data-bank enabling to set up a mathematical model of pollution. Moreover, a method will be devised for measuring the colouring of effluents. One of the basic objectives of this action is the purification of water, the saving of water and the alleviation of the already heavy charges resulting from those costs which are far higher than the ones supported by third competitors.
