

TEXTILES AND CLOTHING SECTOR

Prepared by:

The Textiles and Clothing Core Team

Mr A Tembo, Centre Manager CFTC, CSIR

Mr W. Simeoni: President of the Textile Federation, Vice-Chairman of the Zurich-based International Textile Manufacturers Federation (ITMF) and Managing Director, Frame Textile Corporation.

Mr B. Brink, Executive Director of the Textile Federation.

Mr S. Gershman, Vice-President, Textile Federation and Managing Director of Gregory Knitting Mills.

Mr P. Theron, Executive Director of Clofed/Clotrade.

Mr J. Stocks, Chief Executive Officer, Woolworths.

Mr M.J. Loubser, Managing Director, SANS Fibres (Pty) Ltd.

Dr B. Richards, Managing Director, Seardel Investment.

Mr A. Pitse, Chief Executive Officer, Prilla 2000.

Mr F.J. Coetzee: Managing Director, Gelvenor Textiles.

Dr H. Prader, Executive Chairman, BMD Textiles.

Mr G. Joffe. Chief Executive Officer, Polo Manufacturing.

Mr J. Kipling, Chairman of the Export Council for the Clothing Industry.

1. Definition and Scope

The scope covers the Textile and Clothing Industry and includes the retail sector, which represents the pre-consumer end-point of the textile pipeline that greatly influences the products, production systems, quality systems and even technologies employed earlier in the textile pipeline.

2. Methodology

The following processes were followed:

A series of discussions and interactions were held with key industry executives and stakeholders, and sector and technology workshops were held with industry champions and stakeholders (see Appendix A for list of attendees). TEIs, namely Peninsula Technikon, the Durban Institute of Technology and the University of Stellenbosch and the Textile, Clothing and Footwear SETA involved in textile training also participated in the discussion process. Global developments and trends in science and technology captured during foresight and other scanning activities, recent surveys, reports and technology and training audits dealing with the South African Textile and Clothing Industries, were reviewed within the framework of the NACI terms of reference together with the strategic objectives of the Textile and Clothing Summit. The impact of international trade agreements (e.g. AGOA and EU) was considered and a matrix was developed to link (align) technologies with the textile and clothing pipeline.

3. Synopsis of Industry Background

The Textile and Clothing Industry (TCI) employs some 200 000 people and has annual sales of over R20 bn. It accounts for about 15% of total formal employment but only represents less than 6% of the total output of the South African manufacturing sector. Government has identified it, together with the automotive and aerospace industries, as a key sector for future economic growth. Government, labour and industry have formed a joint task force to develop a long-term strategy for the textile industry and the stakeholders have agreed to a 10-year restructuring plan to achieve global competitiveness.

Factors favouring the local industry include good transport and telecommunications networks and relatively low electricity tariffs, but transport and associated logistics are creating serious problems. The size of the industry is relatively small when compared to that in other parts of the world and this lack of economy of scale erodes competitiveness. There is, however, a large and growing informal SMME sector which requires intervention in order to be sustainable and to become a major contributor and also bridge some of the gaps in the sector. Although recent favourable trade agreements, notably AGOA and EU, present a tremendous but short window of opportunity for this sector, it is in a Catch-22 situation because the industry lacks the capacity to fully realise the potential of the favourable trade agreements. Furthermore, relatively low productivity, together with labour and other cost structures, makes it difficult to compete globally in commodity textiles. Currently 80% of industry output consists of commodity products with only 5% constituting high-tech products. Therefore niche and high-value-added products need to be the future focus. Industry has also recognised the need for cost reduction in its manufacturing processes – particularly in the clothing industry. South Africa is rich in certain natural fibre resources, notably wool, mohair and cotton, but some 90% of South Africa's wool and mohair are exported in an unprocessed or semi-processed form. There is huge potential for beneficiation and employment creation opportunities.

The protective trade environment in the 1980s and 1990s inhibited the need for excellence and a culture of innovation, the TCI being virtually totally dependent on imported technologies, R&D, machinery and equipment, so R&D and technology expenditure by the TCI remained unacceptably low. The TCI tends to be conservative, a follower, when it comes to the adoption of new technologies.

Nevertheless, R&D in this sector is capital intensive so the industry cannot go it alone without appropriate government support and incentives.

There is also a dearth of high-level HRD and skills levels, particularly technical skills, and industry now recognises the pressing need for well-qualified and trained personnel owing to global competition. There is, in particular, a chronic shortage of highly trained technologists and R&D personnel and the appropriate educational and training facilities. In this respect, it is important to note that the image of the TCI is not very good, particularly as a potential career for bright and talented students.

4. Current Trends

From the above it is clear that there must be a strong drive to capitalise on export opportunities provided by favourable trade agreements, notably AGOA and EU.

Furthermore, since it is unlikely that the industry can effectively compete in the global market in the area of commodity goods, it is necessary to develop value-added niche products, also unique “indigenous” designs, with an emphasis on the beneficiation of natural fibres, notably wool, mohair (e.g. the Wool and Mohair Cluster initiative), wild silk and hemp. The TCI also needs to move towards innovative technical textiles and high-tech products and establish new fibres and associated enterprises. The development of an arts and crafts sector focusing on tourist and other high-value-added products should also receive priority. Re-equipment programmes, global networks and alliances, high-level technical and research training, cleaner production and international certification and accreditation are all facets receiving, and requiring, attention to ensure sustainable global competitiveness.

5. Relevance of Change - its Implications and Recommendations

Because South Africa is unlikely to build a vibrant and globally competitive industry based on commodity goods, it needs to diversify into value-added niche and high-performance products or continue to shrink until it is no longer viable. For example, at present more than 90% of wool and mohair are exported in unprocessed or semi-processed form and it is estimated that a further 40 000 jobs can be generated, and export increased by some R10 bn, if all locally produced wool and mohair were processed into the final product. This would have a beneficial impact on both the textile and clothing sectors.

The lack of an adequate R&D and innovation culture and infrastructure in South Africa, together with the low, by world standards, expenditure on R&D by both the public and private sectors, means that we will remain followers of world development trends and South Africa will not be able to take a leadership position. Within this context, there is a need for a centre of excellence and innovation to act as a catalyst and assist industry to develop a stronger technology and innovation base and culture. Without this, the industry is unlikely to thrive over the medium to long term.

We have now entered the Knowledge Age, and without ready access to up-to-date technical, technological and research data, information and knowledge, the industry will find it increasingly difficult to gain or maintain a competitive edge. It is therefore recommended that an electronic knowledge database be established, accessible only to South African manufacturers on a membership/subscription basis.

Lack of skilled manpower, particularly at the higher technical, technological and research levels, is without any doubt, one of the most serious constraints in the sector. This relates both to the general lack of the required world-class training and educational infrastructures, courses and lecturers as well as to the poor image of the textile and clothing sector as a potential career for bright and talented students. These issues need to be addressed as a matter of urgency.

To achieve the desired cost-effectiveness and efficiency, it is essential that there are linkages, alliances and networks, as well as a sharing of knowledge and resources between “centres and pockets of excellence”, TEIs and R&D institutions

locally and abroad. Cleaner production, agile production, on-line monitoring and control and quick response are all essential ingredients for a vibrant 21st Century South African textile and clothing sector.

The focus must be on the following initiatives:

- Multifunctional and high-performance textiles.
- Electronic knowledge databases (technical and technological).
- Value addition for natural fibres.
- Human resource development.

6. Implementation Plan

6.1. Specific Initiatives

It is recommended that the following specific initiatives be undertaken to address the needs of the industry.

6.1.1. Establish a National Textile and Clothing Centre of Excellence and Innovation

Most countries with a prosperous and competitive textile and clothing industry have at their disposal a centre of excellence dedicated to these industries for their R&D and related needs. In South Africa, pockets of excellence do exist in a fragmented manner in various locations, namely industry, the CSIR, some Universities and Technikons (e.g. the Technology Station at Peninsula Technikon). What is needed in South Africa is therefore a national centre that can coordinate and project manage all research activities, link pockets of excellence and carry out the required R&D for the South African textile and clothing industry in collaboration with industry and TEIs (see below). This centre can also serve the needs of the SADC countries and therefore fits in with the NEPAD initiative of the government. Furthermore, improvement initiatives in the SMME arena will be another focus area of the recommended centre regarding appropriate technologies, technical services, R&D and other support.

Actions needed to establish such a centre include the following:

- Benchmarking against international centres of excellence in the USA, Europe and the Far East. At the same time existing networks can be strengthened and new ones formed.
- The centre must be staffed with a core of about 10 highly skilled researchers, engineers and technologists capable of carrying out and coordinating R&D, technology development and innovation.
- Equip the centre with state-of-the-art technology equipment for R&D, product development, pilot scale trials, technology incubation and practical training of TEI students.
- Establish an Industry Advisory Board that will advise and direct on the types of R&D, etc. to be carried out. Apart from industry, the government, SETA, and TEIs will also be represented on this Board.
- Coordinate all local R&D activities and network and align all pockets of excellence. Part of this responsibility will cover issues such as extending global networks and alliances, establishing readily accessible and up-to-date electronic and knowledge-based data bases, carry out a survey to establish the weaknesses of all fibres in preparation for generic R&D to improve them.
- The centre of excellence will also be geared to carry out company-specific research, i.e. the outcome will be the intellectual property of the specific company and not for the public domain.
- The centre of excellence will also support the Advanced Materials Initiative in their endeavour to develop smart textiles regarding the practical testing and incubation of new products. The centre will also give support to the ICT Technology Group (Appendix D). Finally, the centre of excellence will be instrumental in textile and clothing environmental issues, e.g. cleaner production, process optimisation, etc. as directed by the UNIDO-funded Cleaner Production Centre located at the CSIR in Pretoria.

It is recommended that for cost saving and other reasons, the National Textile and Clothing Centre of Excellence and Innovation be located at the CSIR's Centre of Fibres, Textiles and Clothing (CFTC) in Port Elizabeth. Infrastructure, albeit it not state-of-the-art, already exists at this location and the **dti**-funded National Fibre Centre is also located on the same premises. Furthermore, the CFTC is well networked nationally and internationally.

6.1.2. Capacity Building / Training

Another major shortcoming in the SA Textile and Clothing industry is the capacity available for R&D. Highly trained, world-class textile and clothing scientists and technologists are rare.

A major effort is therefore required to train technicians and especially technologists (the Hong Kong Polytechnic University has a Textile and Clothing Department with 2 000 students, including 100 PhD and 100 MSc students). Currently in South Africa only about 20 students graduate with a technical diploma at the Durban Institute of Technology and Peninsula Technikon per annum. Furthermore, industry has indicated that the quality of the students is generally not up to standard. The University of Stellenbosch (US) will inaugurate a BSc textile degree in polymers and textiles in January 2003. In all three cases, funding is required to appoint (in most cases from overseas) highly trained lecturers in textile and clothing science. The US has estimated the cost of setting up this course, including infrastructure and lecturing staff, to be around R10 m. Infrastructure and lecturing needs also exist at the Peninsula Technikon and the Durban Institute of Technology. There has been a post-graduate department in textile science, under the auspices of the CSIR, at the University of Port Elizabeth since 1970 that can be used for post-graduate studies, utilising the staff and facilities of the CSIR and the proposed centre of excellence.

Apart from training, it is also envisaged that once properly established, the TEIs must be tasked with carrying out more basic research while the centre of excellence will carry out applied research, incubation and pilot trials. Ultimately the graduate and post-graduate students at the TEIs will be involved in applied research. The centre will also be responsible for the practical training of TEI students.

It is recommended that the Industry Advisory Board task the centre of excellence to coordinate all R&D activities at centre, industry and at TEI level. Post-graduate programmes in particular must be closely aligned with industry needs.

6.1.3. Research and Development Activities

It has been stated by industry that some 80% of products produced in South Africa are commodity products while only 5% of output can be considered as high-tech products. It is a fact that, due to competition from the Far East, the industry will not survive if the focus continues to be on commodity products. The competitiveness and sustainability of the industry will only be secured if another 20% or more of the commodity product output is moved towards high-tech products.

South Africa is rich in natural textile resources (in many cases indigenous). Therefore, there is a high potential to produce niche products with no competition from elsewhere. Value addition is therefore critically important to prevent the current export of unprocessed or semi-processed commodities, such as wool and mohair. Another important factor to consider is that the local industry has little or no resources to spend on R&D due to production pressures. The AGOA and EU export agreements are putting tremendous pressure on production output in this regard.

Crucial R&D initiatives include the following:

- Electronic Technical Knowledge Databases
 - It has rightly been said that we are in the 'Knowledge Age' and ready access to up-to-date technical, technological and scientific data, information and knowledge will be a key element in global competitiveness.
- Multifunctional and Intelligent Textiles
 - Customers are increasingly demanding multifunctional and enhanced performance textiles. It is therefore imperative for South Africa to develop multi-functional and intelligent textiles with improved comfort, absorbency, repellence and easy-care properties, i.e. performance characteristics must be added to textile fibres including natural fibres. Improved finishing routines will play an important part in this endeavour while the environmental aspects of improved processes will have to be carefully considered. Nanotechnology will play a significant role in these endeavours, as will the use of less water and chemicals during finishing and after care.
- Value Addition
 - Value addition to local fibres, mainly wool, mohair, kenaf (making it more user friendly to spin on a cotton system), etc. is a important in this regard.

In this way the current export of >90% of e.g. wool and mohair in an unprocessed and semi-processed form can be reduced substantially, resulting in extra foreign exchange earnings of R10 bn/annum.

- For short to medium-term development and linkages to various technologies, see Appendix C.

It is important to note that if the above three initiatives are not implemented, the South African textile and clothing industry will become increasingly uncompetitive. The result will be an ongoing loss of jobs (also in the related industries) and also at least 1% of GDP will be shaved off. The textile industry has already shed over 20 000 jobs since 1997. If, however, the above initiatives can be implemented successfully, the job loss trend in industry can be reversed, foreign exchange earnings from textile and clothing exports will increase by about 10% and a modern 21st century industry can be established.

APPENDIX A. Attendees at Sector and Technology Workshops

Dr Rajesh Anandjiwala, CSIR

Dr Francois Barkhuysen, CSIR

Ms Melinda Bekker, Basotho Cultural Village

Mr David Bowen, SETA

Mr Brian Brink, Textile Federation

Ms Moipone Buda-Ramatlo, National Productivity Institute

Mr Mike Cawood, SANS

Ms Helena Claassens, Textfed

Mr F.J. Coetzee, Gelvenor Textiles

Mr Riaan Coetzee, CSIR

Mr Stuart D. Gottschalk, Wool Mohair Cluster

Dr Lawrence Hunter, CSIR

Dr Hans Ittman, CSIR

Mr Jack Kipling, Clothing Export Council

Ms Karen Lundbo, DARUDEC Cleaner Textile Production

Mr Werner Merbold, CSIR

Ms Tembeka Mlauli, **dti**

Mr Raymond Ngcobo, Trade and Investment KZN

Dr Bernard Richards, Seardel/CLO-Trade

Mr Fillipe Pereira, CSIR

Mr Alfred Pitse, Prilla 2000

Ms Connie September, Member of Parliament, Board Member (NACI), Trade and Industry.

Mr Walter Simeoni, Frame Textile Corporation

Mr Abisha Peter Tembo, CSIR

Dr Neil Trollip, CSIR

Dr Patricia Truter, CSIR

APPENDIX B. ICT AND LOGISTICS LINKAGE WITH TEXTILE AND CLOTHING

Sector	Description	Time Period
Textiles and Clothing	ICT diffusion, including incentive schemes and infrastructure solutions regarding connectivity for companies in industry	Short term - Medium term
	ICT Skills Development and Internship programme	Short term - Medium term
	Portal or knowledge repository for the textile and clothing industry hosting the following type of information: expertise register, industry-specific data, econometrics, policy and regulatory, etc.	Short term - Medium term
	Advanced computing in the following areas: expert systems, decision-support systems, advanced intelligent databases and AI	Medium term - Long term
	Tele-manufacturing technologies for advanced product design	Long term
	Joint Initiative with Indian Department of Science and Technology to develop a grid-manufacturing approach for both countries	Long term (3 years)
	Advanced e-commerce technologies for customised/personalised manufacturing	Long term
	Development of intelligent systems and robotics	Long term
	Advanced manufacturing systems to increase responsiveness	Long term

APPENDIX C – Textile and Clothing Linkages with Technology Groups

SHORT TO MEDIUM TERM

