PRODUCTIVITY COMMISSION INQUIRY SUBMISSION

POST 2005 ASSISTANCE ARRANGEMENTS FOR THE TEXTILE, CLOTHING, FOOTWEAR AND LEATHER INDUSTRY

SUBMISSION FROM

CSIRO

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Contact: **Dr Brett Bateup**
Chief CSIRO Textile and Fibre Technology
PO Box 21
Belmont. Victoria. 3216

Ph: **03 5246 4777**
e-mail: **brett**.bateup@csiro.au

Executive Summary

This submission to the Productivity Commission has been submitted on behalf of CSIRO by CSIRO Textile and Fibre Technology (CTFT), Australia's largest multifibre Research and Development facility which incorporates the Centre of Excellence for Advanced Wool Products and the Centre of Excellence for Technical Textiles.

CTFT has been instrumental in assisting the Australian TCF & L industries to bring innovations to the market place on a global scale, primarily for the wool industry but more recently for the Australian cotton and technical textiles industries.

This submission highlights the continuing need for innovation and education in the Australian TCF & L industries in order for them to compete internationally by producing highly functional, high value niche products in the most cost effective, sustainable process rather than low value commodity products.

Our recommendations are:

- Continue the SIP or institute a replacement incentive scheme beyond 2005 with more rigorous definitions of what constitutes R & D and innovation.
- Structure the SIP or a replacement scheme so that it is available to clusters of companies to facilitate innovation among small companies and to utilise the SIP or its replacement as a tool to facilitate more industry collaboration.
- Enable the SIP or alternative scheme to be available to early stage processors in textile and leather.
- Provide funding through part of the extended SIP or alternative scheme in the form of scholarships to encourage the growth of education courses for the textile industry and provide incentives to industry to invest in training and education.

Submission from CSIRO to the Productivity Commission's Inquiry into Post 2005 Arrangements for the TCF & L Industries.

March 7th, 2003

Background

This submission is made to the Productivity Commission because of CSIRO's close association with the Australian TCF & L industries for over 50 years mainly through the Wool Research Divisions, the work of which is now consolidated in the Division of Textile and Fibre Technology (CTFT) in Geelong. CTFT is the major R & D facility for textile science and innovation in Australia and is therefore an important resource for the Australian TCF & L Industries. The traditional scope of CTFT's work has been in the development of technologies for the measurement of wool fibres, yarn and fabrics, the mechanical and chemical processing of Australian wool and the development of new technologies to meet consumer demands for wool textiles such as shrinkproofing and colouration.

Many of the outcomes of wool research have been exploited overseas, mainly in Europe and Asia, because the bulk of Australian wool has been exported unprocessed or in a part-processed state for final manufacture overseas. Funding was from appropriation and Australian wool producers through their research organisations like the Australian Wool Corporation The funding from the wool industry was substantial and accounted for up to 60% of external funding up to the early 90's. This led to the situation where the primary focus of the Division was on wool research.

Since the early 1990's the wool industry has been undergoing significant structural and administrative changes as it adjusts to the needs of consumers and the increased competition from cotton and synthetic fibres in its traditional product range. Though overall flock numbers have dropped significantly as a result of low wool prices in the mid-to-late 90's, due in large part to the stockpile generated as a result of the collapse of the reserve price scheme, there is an increasing percentage of fine wool (<19.5 μm) being produced. This change in the composition of the wool clip has arisen because of both reduced production of medium to strong wools (greater than 21.5μm) and a modest increase in the volume of fine and super-fine production. At the present time wool is experiencing the reverse problem of becoming very expensive due to shortages caused by reduced production generally, the drought and the increasing value of the Australian dollar. Wool has reached the price where increased substitution by other fibres is likely to occur.

This issue highlights big opportunities for wool textile R & D being pursued by CTFT which is the development of technologies that reduce costs and improve quality in the long wool processing pipeline and yield new products for modern consumers. Such technologies will help maintain wool in the market place and increase its competitiveness with other fibres.

Leather research is also carried out in the Division in a smaller portfolio that is focussed on the domestic Australian leather industry with a strong emphasis on R & D addressing early-stage processing and environmental issues as well as the development of new products such as an advanced Medical Sheepskin and a new Army Boot. From the point of view of leather production in Australia, the Australian

leather industry is having difficulty competing with China for access to hides and skins and in production costs. However those enterprises which are focussed on the production of niche, high quality products will continue to prosper.

In recent years CTFT has broadened its research portfolio into other fibres and established close links with both the local TCF industry and overseas textile machinery and chemical manufacturing industries. This situation has been placed into sharper focus with the recent reorientation of CSIRO's research into "Flagship" Programs and those areas of emerging science that have strategic importance for the Australian economy and society. The new priorities will mean reduced appropriation resources devoted to textile research and increased investment will be needed from industry to maintain the research portfolio.

Though this poses special challenges due to the varied and disparate nature of the industry, CTFT has been successful in broadening its customer base through the establishment of strong research portfolios in cotton textiles and industrial and technical textiles. There are optimistic indicators, as reflected by increasing and repeat business from some 200 companies, that the local TCF industries are becoming more R & D oriented and innovative and keen to establish links with CSIRO through increased consultancies and services.

CSIRO Textile and Fibre Technology (CTFT)

CTFT has around 200 staff mainly located at Belmont in Victoria with a Leather Research Centre located in the Melbourne suburb of Clayton. The Division's staff posses a wide range of skills and disciplines including chemistry, physics, biology, information technology, chemical, mechanical and textile engineering and textile technology. It has sophisticated pilot-plants for wool, cotton and leather processing and has recently acquired "state-of-the-art" Murata cotton spinning equipment. The Division is the home of the Centre of Excellence for Technical Textiles and the Centre of Excellence for Advanced Wool Products, both established with the assistance of the Commonwealth and Victorian State Governments through a cash injection of $2.6M plus equipment to the value of $5.5M. In addition CTFT has invested over $2M to purchase "state-of-the-art" Rieter hydro-entanglement and bi-component fibre extrusion equipment for these Centres.

Increased resources are now committed to servicing the needs of the local industry through individual research projects, consultancies and the provision of analytical and processing services. CTFT now has the infrastructure, linkages and facilities to deliver services to the global textile industry. It is already conducting projects in India, China and Vietnam in wool, cotton and leather and has a long history of commercialising IP in Europe, Asia and the Americas.

CTFT and Textile Education

In many of the recent reviews of the TCF & L Industries, education and training have been identified as critical issues. The available courses are dwindling. Deakin and RMIT Universities in Victoria have textile courses, with strong student demand for Fashion and Design at RMIT. Deakin University's Textile Engineering Department is establishing itself for post-graduate training and has PhD students co-supervised by CSIRO staff.

The National Framework for Excellence in Education (NFE) for the TCF Industries, which was established as an adjunct program to the SIP, provided a good mechanism for establishing cooperative education programs between CSIRO and Universities and TAFE institutions. Although CTFT developed cooperative proposals with a number of institutions the program was unfortunately discontinued by the Federal Government before any useful initiatives could be funded.

Despite the abandonment of the NFE initiative, CTFT continues to recognise that training and education programs are critical for the future of the industry. It has developed, in conjunction with bodies such as the International Fibre Centre and Australian and overseas institutions, the capacity to run specialised education courses for the TCF & L industries. These programs encompass technical training at the sub-degree level and training programs at the postgraduate level. The latter programs have been developed in collaboration with Deakin University, Monash University and Wollongong University. To overcome the current problem of attracting students to undertake studies in textile subjects, efforts are being made to entice students through the core sciences rather than through textiles.

The issue of advanced education in textiles is an important one if innovation is to be stimulated in the TCF& L industries. It may be that a downward spiral could set in with students not attracted to the industry because of continued adverse publicity about the industry. In turn the lack of highly trained and motivated people could make it more difficult for the industry to change its image to one of creativity and innovation.

Business Expenditure on Research and Development (BERD)*
Consistent with the majority of Australian companies the investment by Australia's TCF industries in R & D has been historically low and remains so despite the SIP and other incentive programs. However its low investment in R & D has to be seen in the context of the overall low investment levels in R & D by all Australian industry. Though BERD in 2000-01 is estimated at $4825M at present prices, the highest-level recorded in volume terms, Australia's BERD/GDP ratio is relatively low when compared to other OECD countries.

2000-01 saw the Manufacturing industry component of R & D expenditure increase by 8% to $2,170M (45% of total R & D expenditure) with the human resources devoted to R & D increasing by 2% over the previous year accounting for 51% of total R & D resources by Australian industry. For the same period the TCF&L industries' expenditure on R & D was only $26.7M, equivalent to 1.24% of that by all manufacturing with the human resources committed to R & D being equivalent to 1.72% of all manufacturing.

The R & D resources were divided into $1.46M for basic research, $4.7M for applied research and $20.5M for experimental development. The 2000-01 allocation of resources across the R & D portfolio consisted of $2.7M for capital equipment, $12.7M for labour and $11.3M for other current expenditure.

***** *Australian Bureau of Statistics 8104.0 "2000-01 Research and Experimental Development*

R & D in CSIRO Textile and Fibre Technology (CTFT)
The Division's present total annual income is around $23.8M of which just over 40% comes from external customers. The major customers are the wool and cotton industries through respectively Australian Wool Innovation Pty. Ltd. (AWI) and the Cotton Research and Development Corporation (CRDC). In 2000-01, over 200 private sector customers purchased services and consultancies. The situation was similar in 2001-2002 with the Division acquiring a total of 44% in external earnings. Detailed customer value analysis by CSIRO has indicated a high level of customer satisfaction which has lead to repeat and expanded business.

CTFT has been involved in a number of projects with both the textile and leather industries using the R & D START Program, managed by the Department of Industry, Tourism and Resources and its forerunners. This program is a very effective vehicle for stimulating collaborative R & D projects with industry. Apart from producing many positive outcomes for industry it has encouraged the establishment of closer relationships between industry and CSIRO. The scheme is attractive to innovative small to medium sized companies that do not have large cash reserves and are unable to access venture capital.

CTFT and Non-Tariff Trade Barriers
Of concern to many sectors of the Australian TCF & L Industries is the issue of the "level playing field". There is anxiety that Australia's entry into present and potential overseas markets will be compromised by the use of non-tariff trade barriers imposed by importing countries to protect their own industries, despite Australia reducing its own tariffs. Importing countries are still able to restrict entry of goods through the imposition of regulations based on environmental and ecological credentials.

Europe is in the process of establishing an Integrated Product Policy (IPP) which is designed to increase uptake of "environmentally friendly" products. The IPP has three main components:

- The incorporation into product standards and product design a clear demonstration that they reflect the EU's contemporary views on ecological and environmental considerations.
- A reduced VAT for environmentally friendly goods.
- The introduction of an independently certified eco-label which summarises the environmental "footprint" of the product to consumers and public sector purchasing bodies.

The official European eco-label is a classical Type 1 eco-label (criteria set and validated by a third party and based on the product's life cycle impacts) as defined by the ISO 14024 Standard. This gives international credibility to the eco-label and there is WTO precedent that potentially could allow it to be used to exclude "like products" that have been manufactured using less rigorous environmental standards.

The European Parliament has already signalled its intention to promote the IPP through global supply chains. While such "green trade barriers" may be seen as a potential threat, Australia has the world's largest supply of raw wool that meets the eco-label criteria. It is in the light of these developments that CTFT is working closely with Australian exporters of wool and wool textile products to create new marketing opportunities arising from those trade barriers based on environmental or

ecological issues. The Division's capacity is underpinned by extensive technical and administrative knowledge of the issues, sophisticated testing facilities to monitor and measure environmental inputs and outputs and the registration of staff as ISO 14000 auditors who are able to certify establishments with respect to the ISO 14000 suite of standards.

The important issue here is that while non-tariff trade barriers can be a problem, organisations such as CSIRO can find advantages and opportunities for companies that enable them to compete against other exporting countries.

The Strategic Investment Program (SIP) and CSIRO.

The number of companies using SIP funds to conduct research with CTFT has been difficult to gauge due to confidentiality issues but it appears to be small. The major application of the scheme appear to have been in the acquisition of capital equipment. While CSIRO acknowledges that re-equipping and re-capitalisation are important, the key issues to be encouraged are the development of new processes, new products and the capacity to embrace new ideas and technologies to sustain long term competitiveness.

It is important that SMEs in the TCF & L industries be encouraged to invest in R&D through collaborative research projects with some type of external assistance package, such as those available through the SIP or the R & D START program. The influence of such programs to change attitudes and encourage innovation gives justification to the argument that an extension of support to facilitate continued structural and attitudinal changes is a worthwhile strategy. By way of example the proposal to establish a Cooperative Research Centre for Technical Textiles received considerable support from a wide range of companies. The fact that the proposal did not succeed was certainly not a reflection on the commitment of the industry partners.

The Commission may wish to recommend that future assistance post-SIP should be to place more emphasis on encouraging greater investment in R & D similar to the initiative proposed for the Australian automobile industry.

The SIP initiative while excellent in its concept excluded early-stage processors in textiles and leather manufacture. For example the scheme is only applicable to the processing of wool beyond the top stage and in leather production processing to wet-blue leather is excluded. Given that a considerable component of Australian TCF&L production is in early stage processing, incentives for innovation in these areas is still needed and there remain significant opportunities for innovation, for example to increase the speed and quality of wool topmaking, wet-blue leather production and tanned woolskin production.

CTFT has world leading expertise in these areas but companies, particularly SMEs, still require assistance to reduce the financial risk of involvement and collaboration in such developments.

Extension of Assistance Programs beyond 2005

Should the SIP be discontinued after 2005 it is recommended that a future assistance package be developed with the focus on encouraging innovation and investment in R & D.

If the SIP is continued it is recommended that criteria for access to it should place emphasis on the allocation of resources to R & D and substantive innovative developments rather than the emphasis being placed on capital equipment acquisitions and minor product development projects.

A similar policy to that of the government's incorporation into the Automotive Competitiveness and Investment Scheme (ACIS) of an R & D fund to support key technologies for the period 2006-08 should be considered for the TCF& L industries. There needs to be a tighter definition on what constitutes R & D to encourage effective use of the system.

Though it is difficult to generalise about the TCF & L industries because of their diverse and disparate characteristics, there are positive signs of a sea change occurring in many parts of the sector as reflected by the increased level of exports. Given the gains made, it is important to continue to encourage this momentum of change by stimulating a culture of innovation and creativity.

Support for Small to Medium Sized Enterprises (SMEs)

SMEs are excluded from the SIP if they cannot meet the required $200,000 eligibility threshold. This has the effect of excluding many small innovative companies that have the potential to drive the development of new products, processes and markets. The SIP scheme or a subsequent support scheme should be modified to encourage groups or clusters of companies to engage in collaborative R & D.

The TCF & L Action Agenda program highlighted the fact that much of the industry is fragmented and made up of small companies without the capacity to capture market intelligence or technical advancements. It emphasised the need for the industry to form clusters or networks to share information and invest in joint marketing and technology programs.

The provision of the SIP or similar support schemes to clusters of small companies would facilitate their joint investment in collaborative projects and encourage smaller innovative companies to participate in SIP. If the $200,000 threshold is retained SIP could be used as a lever or incentive for companies to form clusters or networks to participate in R & D.

CTFT has been active in seeking to establish a CRC for Technical Textiles. During the planning phase for the CRC a fundamental difficulty became apparent for the companies involved. The companies are all highly innovative SMEs and have collaborated together to establish the Technical Textiles and Non-Wovens Association (TTNA) but they had difficulty collectively committing to a total of $2M per year for 7 years. It is such innovative groups and clusters that warrant consideration in any future assistance measures.

The Commission may wish to reflect on how alternative funding models to support R & D and innovation could be structured to benefit such groups. CTFT has also played a lead role in establishing the Geelong Textile Network. The Network has been formed to encourage the local Geelong textile industry to work together and interact with both education and R & D providers and provide a forum to represent the interests of the local industry to Government and unions. There has been success in

getting cooperation on initiatives such as energy conservation, the use of e-commerce and the development of a web page.

Conclusions

It has been written and stated many times that the future for the Australian TCF & L Industries lies in the development and marketing of innovative products. There is no doubt that many companies have become success stories, however for the majority of companies to become world leaders they must adopt a culture of constant improvement and innovation. It is very difficult for Australia to compete with low cost countries, such as China and India, in commodity textiles. The only future for the TCF & L industries in Australia lies in producing high quality specialist products which depend on a culture of continuous investment in R & D and new product development.

CSIRO recommends that consideration be given to continuing SIP-like assistance to the industry with a stronger emphasis on rigorous R & D and innovation.

Recommendations

- Continue the SIP or institute a replacement incentive scheme beyond 2005 with more rigorous definitions of what constitutes R & D and innovation.
- Structure the SIP or a replacement scheme so that it is available to clusters of companies to facilitate innovation among small companies and to utilise the SIP or its replacement as a tool to facilitate more industry collaboration.
- Enable the SIP or alternative scheme to be available to early stage processors in textile and leather.
- Provide funding through part of the extended SIP or alternative scheme in the form of scholarships to encourage the growth of education courses for the textile industry and provide incentives to industry to invest in training and education.