Study on Markets and Price Situation of Natural Fibres (Germany and EU)

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Summary
The objectives of this study on "Markets and Prices for Natural Fibres" were to analyse the current and future markets for flax and hemp fibres produced in the EU, to characterise the economic situation of producers and to develop a suitable framework that will guarantee an adequate development of the natural fibres markets. The latter is mostly dependent on the EU subsidy policies, which are proposed to be fundamentally reformed for the economic year 2000/2001.

The study focuses on technical markets for short fibres, which particularly in the new flax and hemp countries - especially in Germany, the U.K. and Scandinavian countries - are of central importance and are to date not well known. The main focus of the research thus was a comprehensive data survey of all relevant manufacturers and associations in the EU by means of questionnaires and expert interviews.

Short fibre production
In the economic year 1999/2000, about 60,000-70,000 tonnes of flax and 25,000-30,000 tonnes of hemp short fibres were produced in the EU. In the traditional flax countries France, Belgium and The Netherlands, flax short fibre production ("tow") is a by-product of flax long fibre processing, which is entirely directed towards the apparel and home textile market. In contrast, in the new flax and hemp countries, processing of the short fibres is almost entirely done by so-called "total fibre" lines, which do not separate long and short fibres.

Markets
The most important markets for flax short fibres are pulp (commodity and specialty pulps) with a 45% share and the apparel and home textile sector with a 20% share. Another 25% are exported by the EU. For hemp, the specialty pulp sector is even more prominent with a market share of 87%. The specialty pulp sector is a stable, high-priced niche market. The most important product lines are cigarette paper, bank notes, technical filters and hygiene products.

Market developments through 2005
Upon closer examination of the short fibre markets, however, several interesting developments became noticeable over the past few years. Motivated by comprehensively sponsored research and development (R&D) projects and innovative entrepreneurs, novel technical product lines have been developed. The two most important product lines are composites in the automotive industry and thermal insulation materials in the building sector. Thus far, market shares for all new technical product lines are somewhat below 10% for flax and slightly above 10% for hemp. European fibre processors forecast a market share for these product lines of about 30-40% of the still growing market as soon as 2005.

Subsidies and investments
From 1982-2002 in the EU (DG VI, DG XII, DG XIV), more than DM 100 million in subsidies were directed towards the development of new flax and hemp applications and towards harvesting and fibre

processing technologies. In addition, national projects contributed funding. In Germany alone, more than DM 175 million were invested in R&D of new harvesting, fibre processing and refining technologies (thereof more than DM 88 million from federal and state public funds, the remainder from private sources). For the next years, Germany's primary processors plan further investments of about DM 150 million.

Automotive industry
The use of natural fibres in the automotive industry is particularly interesting. While in 1996, the European automotive industry used only 4,000-5,000 tonnes, in 1999 this had already increased to more than 21,000 tonnes. About 30% of these fibres were produced in the EU and about 70% were imported from Eastern Europe and Asia. In this context, it became evident that the currently used quantity of hemp fibres in the European automotive industry is entirely produced in the EU.

Natural fibres are predominantly used for reinforcement of door panels, passenger rear decks, pillar cover panels and boot linings. The present state of technology allows the use of about 5-10 kg natural fibres per automobile.

The automotive industry made the decision for the use of natural fibres for several technical, environmental, and economic reasons. The demand in the EU is expected to further increase to 40,000 to 70,000 tonnes in the foreseeable future. In the long term, the use of novel technologies - thus far not fully developed for serial production - can double this demand. This presents a big chance for "total fibre" lines in the EU.

Use of natural fibres in the European automotive industry (in tons)
Survey of suppliers of automotive industry and fibre producers

Fibre	Germany 1996 according to suppliers	EU without Germany 1996 according to suppliers	Germany 1999 according to suppliers	EU without Germany 1999 according to suppliers	EU total 2000 prognosis according to suppliers	EU total 1999 according to fibre processors
Flax	Yes	Yes	**11,000**	**4,900**	+2 to +10%	**2,118**
Hemp	No	No	**1,100**	**600**	+3 to +20%	**1,770**
Jute	Yes	Yes	700		+2 to +5%	-
Sisal	Yes	Yes	500		0 to +3%	-
Kenaf	No	No	1,100		0 to +3%	-
Total	4,000	300	**14,400**	**6,900**	23,000 - 25,000	**3,888**

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Ecological thermal insulation materials
The second-most important market for flax and hemp short fibres is their use in ecological thermal insulation materials. In many countries, this market is growing faster than the total market for insulation materials. Especially the flax fibre processors have high hopes in the thermal insulation market. By the year 2005, several 10,000 tonnes per year are expected to be sold. This development assumes that processing costs can be lowered and comprehensive marketing schemes will be implemented.

Specialty pulps
Experts in the pulp sector judge the market for specialty pulps, thus far the most important product line for flax and hemp short fibres, as stagnant to slightly decreasing. Nevertheless, the fibre processors expect to expand the market by 10% by the year 2000. Such expansion will only be possible by developing new markets or by substitution of other fibre plants. This requires specific and regional marketing activities and novel, e.g., ecological characteristics of the pulp.

Economic situation of the fibre market
The economic situation of the new EU "total fibre" processors is characterised by small profit margins despite the relatively high subsidy level. The reasons are mostly found in start-up problems of the new processing lines. Technical problems have to be solved, throughput and productivity need to be increased and new markets have to be developed. At the same time, fibre prices, pressured by competition from imports from Eastern Europe and Asia, have little financial flexibility. For the technical sector, industry purchases fibres at prices of DM 0.90 to 1.20 per kg. The main competing fibres for EU-produced hemp and flax fibres are flax fibres from Eastern Europe, jute and kenaf fibres from India and Bangladesh and sisal from South Africa, South America and Asia.

A sudden decrease of EU subsidies will jeopardise the existence of the processing facilities. The current proposals of the EU commission for a reform of the flax and hemp subsidy schedule do not represent a suitable framework for further development of the new natural fibre markets. A sudden and drastic decrease of the subsidies and added conditions will take away the financial basis for the new "total fibre" lines in their start-up phase. Even with drastic productivity increases, most of the new enterprises will not be able to achieve a profit. There is a real risk that the entire "total fibre" economy that developed in the past years in many of the new flax and hemp countries and that had been subsidised by considerable public funds will collapse and private and public investments will be lost. The goal to establish a novel, technically oriented natural fibre industry in the EU would then have failed.

Political decision
This imperilment of the young "total fibre" industry occurs at a time when the industrial demand for flax and hemp fibres is higher than ever. Especially in the automotive industry, the decision for an increased use of natural fibres has been made. The decision by the EU to what extent this demand will in the future be met by EU-produced flax and hemp fibres or by imports will be an agri-economic political choice. Within a suitable framework, there is a real chance to guarantee an ecological and sustainable supply of technical natural fibres for the industry from the EU. This chance should not be imperilled by the wish for short-term subsidy savings. Besides the subsidies, a comprehensive evaluation should take into account the substituting imports of natural fibres, any workplace and environmental effects, as well as the imperilment of already granted financial assistance and investments.

The most important objective for the future development of technical markets for EU-produced natural fibres is thus a modification of the current reform proposals by the EU commission. This study discusses several different alternatives to that respect.

The authors of this study are associated with the German nova Institute for Ecology and Innovation, which was founded in 1994. Its largest department focuses on renewable resources, particularly on markets and economics of biodegradable materials such as natural fibres and bio-plastics.

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