

Overview on establishing flax industry

**BLUE CRANE DEVELOPMENT AGENCY
SOMERSET EAST**

MSM-Fibre & Textiles Competency Area

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MSM – Fibre & Textile Competency Area



Vision and Mission Statements

“A world-class Centre of Excellence for the establishment of globally competitive fibre industries”

“To develop cutting-edge technologies, expertise and innovative solutions for the fibre industry”

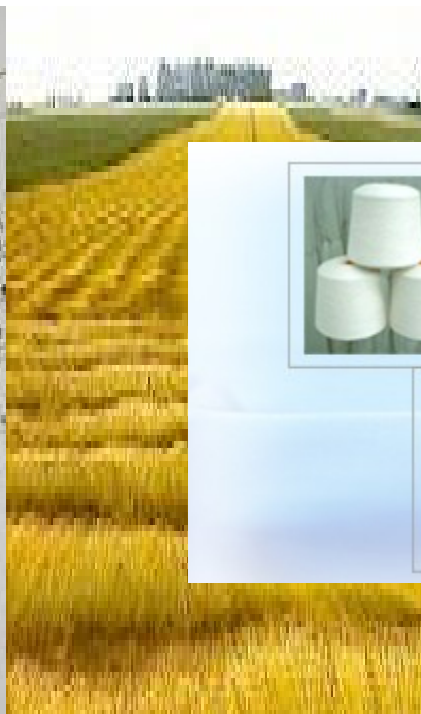
Agronomic overview



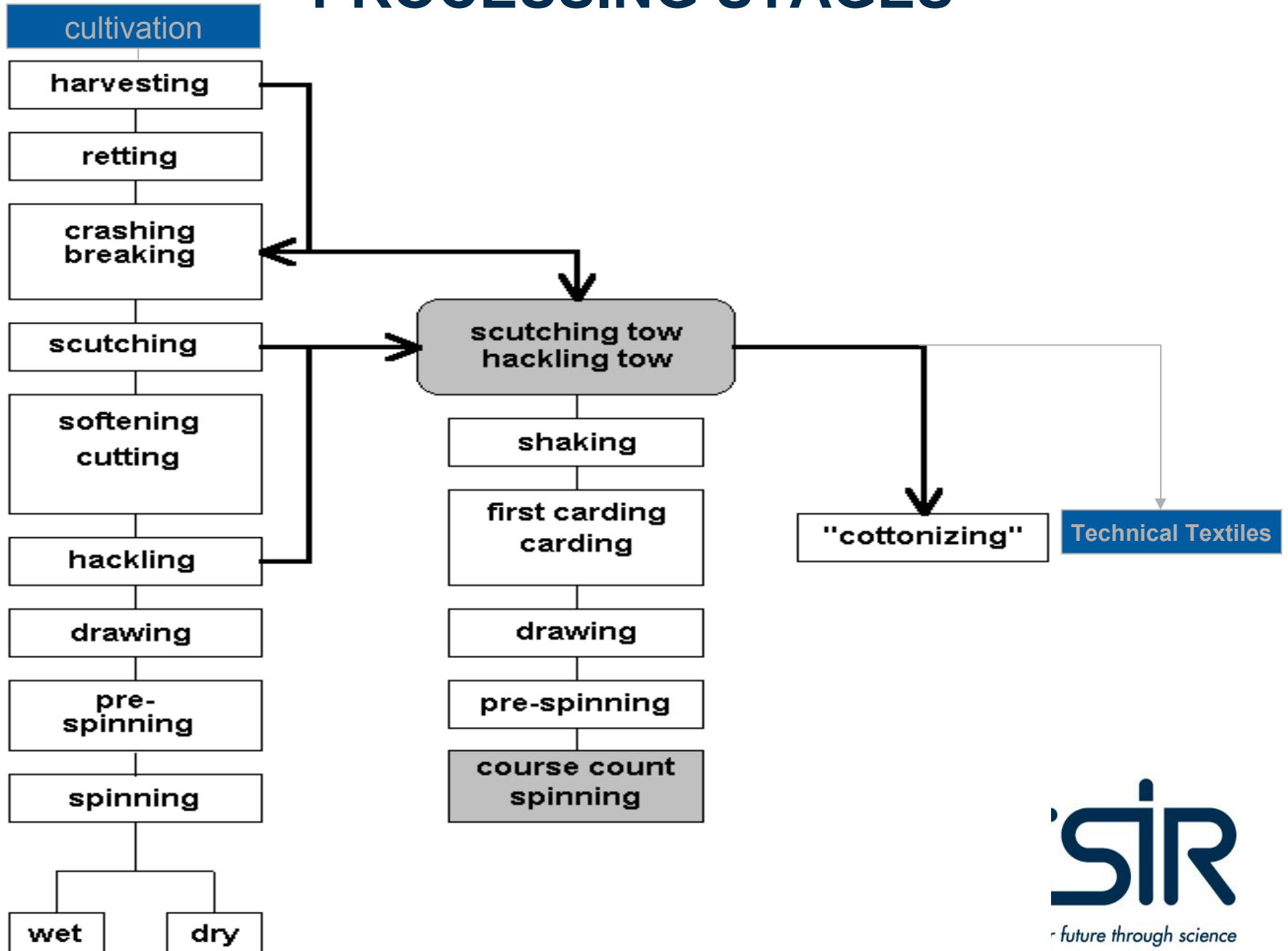
- Flax require moderate winter climate with temp. not less than 3°C
- Cultivated in wide range of soils
- Water requirements of between 250 – 300mm on ripening
- Fertiliser needed is lower than most cash crops
- 2006 flax seed price = **Euro 1.23/kg**
- The life cycle of the flax plant consists of a 45 to 60 day vegetative period, a 15 to 25 day flowering period and a maturation period of 30 to 40 days.

The Flax Plant

- The stem of the flax plant contains
 - Fibrous outer layer (bast fibre)
 - Woody inner part (the shive)
 - Seeds
- The international norm of flax straw yields is around **6-7 tonnes** per hectare.
- Fibre content ranges from 8% to 30% depending on the variety sown, growing and retting conditions
- Fibre extraction process is mainly mechanical



PROCESSING STAGES



Technology required during cultivation – harvesting (choice btwn labour intensive & mechanization)

PLANTER



Picking machine



Flax turner



Baler

- swathing machine

BEST FARMING MANAGEMENT PRACTICES

CSIR

our future through science

Primary Fibre Processing Technologies



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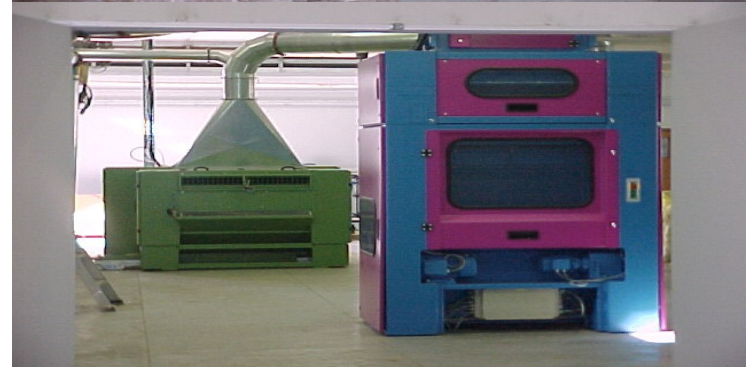
- Fibre separation by decortication process
 - Long fibres
 - Short
 - Shives / woody core

Flax fibre refining processes

Hackling Unit



Flax opening & cottonization



Prices of main products and by-products of flax

Long fibre	Water-retted	Dew-retted
<i>Quality</i>	<i>Price Euro/ tonne</i>	<i>Price Euro/tonne</i>
Lower	2 231.00	1 983.15
Medium	2 602.88	2 231.04
Very good	2 726.83	2 850.78

Short fibre

Lower	247.89
Higher	371.84

by-products

wasted parts of the straw-dew retted	30.99
wasted paer of the straw price	37.18
by-products from deseeding	24.79
short scutched fibre waste	99.16
shives used for particleboard prodn	26

Source: Vlas Berichten, the newspaper of the Algemeen Belgisch Vlasverbond, issue No:14; July 12, 2002 (Belgium).

Uses of the long fibre, tow and shive

- Long fibre
 - Linen
- Tow (short fibres)
 - Composite materials
 - Geotextiles
 - Insulation
 - Specialty papers
- Shive (woody byproduct)
 - Bedding
 - Filler

Local market

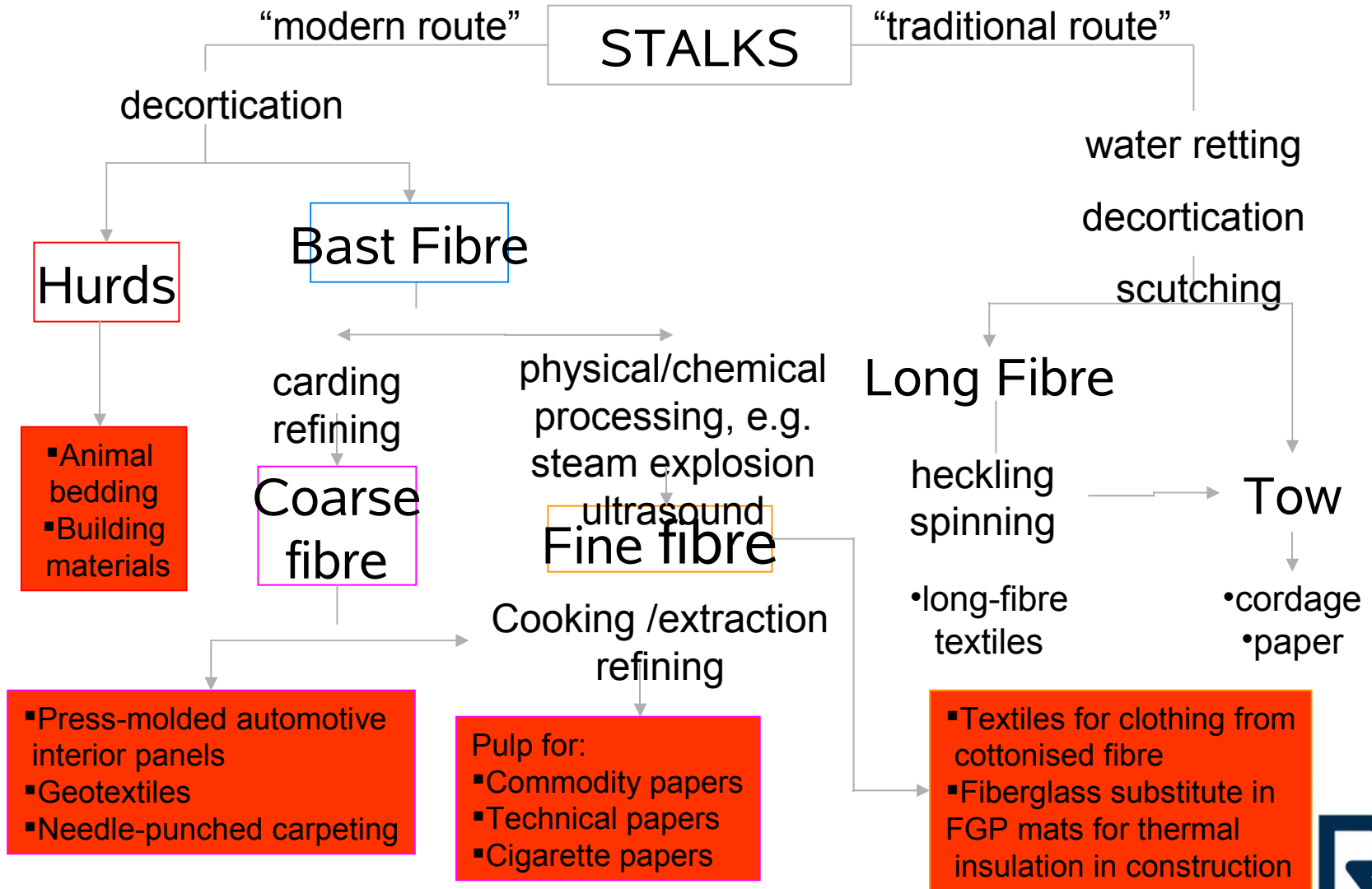
SA IMPORTS FOR FLAX

		JAN-DEC 2000		JAN-DEC 2001		JAN-DEC 2002		JAN-NOV 2003	
		KG	R(FOB)	KG	R(FOB)	KG	R(FOB)	KG	R(FOB)
FIBRE:									
530110	raw or retted	0	0	15220	133196	13	392	0	0
530129	other (not broken or scutched)	6372	332322	4214	129311	130880	5002309	854974	26497170
530130	tow & waste	1045	38211	0	1007	0	0	0	0
		7417		19434		130893		854974	
YARN:									
530610	Single	3115	155202	10382	590336	22977	1749198	62641	3234188
530620	Multiple (folded) or cabled	64729	2558920	61368	2925399	92603	5480660	87579	3583121
		67844		71750		115580		150220	
FABRIC:									
530911	>85% flax, unbleach/bleached	2488	410173	12454	1907558	28824	1872632	13839	1806426
530919	>85% flax, other	91676	4812328	41395	3279175	55867	8480110	75888	9725312
530921	<85% flax, unbleach/bleached	4719	343068	7409	859424	6411	795555	3567	374558
530929	<85% flax, other	269111	8544611	157012	7979711	299696	24558520	323988	19211650
		367994		218270		390798		417282	
TOTAL		17194835			17805117		47939376		64432425

Markets

- Long fibre
 - Spinners and weavers mainly located in Asia (other Atlantis)
- Short fibre
 - Automotive suppliers
 - Ecological insulation manufacturers
 - Pulp and paper mills
 - Cottonized fibre
- Market value depends on:
 - Length, strength, fineness, colour, freedom from shives and consistency

FLAX PRODUCT DEVELOPMENT ROUTE



FLAX R&D @ CSIR



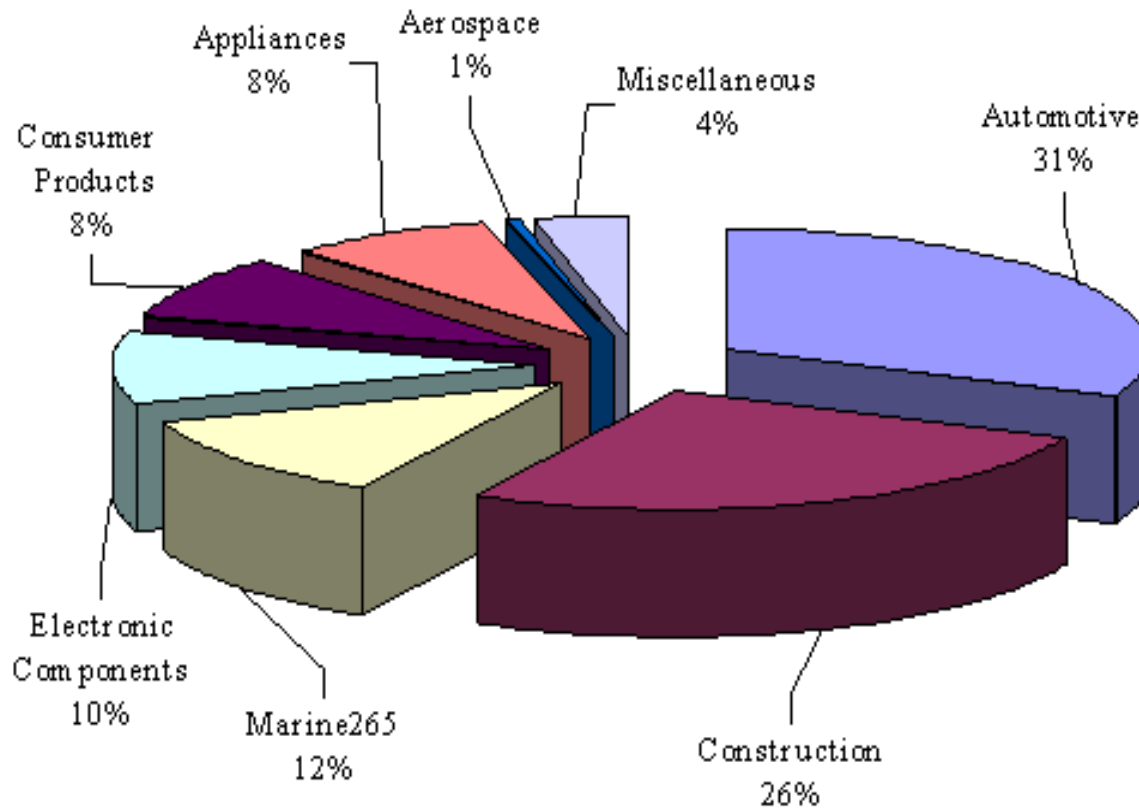
Product Development - Apparel



Product Development - Automotive



Natural fibre re-inforced composite



According to a soon-to-be-released study from **Business Communications Company, Inc.** (www.bccresearch.com) *RP-178 Composites: Resins, Fillers, Reinforcements, Natural Fibers and Nanocomposites*, the fiber-reinforced plastic market is estimated at almost 2.3 billion pounds in 2002. It is expected to increase to slightly over 2.6 billion by 2007, as the market grows at an AAGR (average annual growth rate) of 3.0% through 2007.

Challenges

- Development of economic viable models
- Human capacity development
- Local and overseas markets

Thank you

Questions / Clarification !!!!!