



CONSULTATION ON NATURAL FIBRES

Salvador, Brazil 8-9 July 2003

PROJECTIONS TO 2010: HARD FIBRES

1. Introduction

In the period to 2010, the market for sisal and henequen is expected to continue to contract, largely under the influence of competition with synthetic fibres, especially in the United States, a major market for agricultural twine. The market for abaca is expected to remain relatively stable with increases in the trade of manufactures, and especially paper pulp, offsetting the expected decline in trade in fibre. Consumption of coir is expected to continue growing, albeit at a slower rate than that of the past decade, as demand for coir products in India may decelerate. Market conditions for non-traditional hard fibre products are expected to improve, given the assumption of favourable economic conditions, although their share in total consumption may continue to be small.

These projections for hard fibres have been generated by means of partial equilibrium models estimated utilising FAO data and assuming weather and economic conditions will be normal. The models consist of estimated behavioural equations for production, as well as demand, exports and imports of fibre and manufactured products. The models are dynamic, allowing for adjustment to changes to be gradual and not instantaneous, thus take into consideration biological, behavioural and other factors in the production and consumption of fibre and related products.

1. Sisal and henequen

Between 1998-2000 and 2010, global demand for sisal and henequen fibre and products is expected to contract by an annual rate of 0.84 percent as agricultural twine, the traditional outlet for fibres continues to be eroded by synthetic substitutes and by the adoption of harvesting technology that utilises less or no twine.

During the decade 1990 to 2000, consumption in North America, a traditional user of agricultural twine, declined by 7.1 per cent per annum to approximately 53 000 tonnes in 1998-

2000. In the medium term, it is likely that consumption in North America, primarily in the United States, will decline to approximately to 49 000 tonnes, mainly due to the continuing displacement of sisal twine by heavy polypropylene twine used in big square bales. In Europe, between 1988-90 and 1998-2000, consumption of sisal contracted by an annual rate of 7 percent to 39 000 tonnes. It is expected that in the period to the year 2010, the rate of decline in consumption in Europe will slow down, as possibilities for further substitution by synthetic fibres and for displacement by harvesting techniques may be exhausted. In China between 1988-1990 and 2000, consumption increased by an average of 6.3 percent per annum from 20 000 tonnes to 38 000 tonnes. Consumption of sisal agricultural twine in China is projected to contract, as increased capacity in the polypropylene industry continues to exert pressure on the competitiveness of sisal twine.

Between the 3-year periods of 1988-90 and 1998-2000, global production of sisal and henequen contracted at an annual rate of 4.0 percent to 301 000 tonnes. In the medium term to 2010, global production is expected to contract further, as producers in all major countries respond to market signals (see Table 1). Global production is projected to decrease by 2.0 percent per annum to 257 000 tonnes in 2010. Production in Brazil, the largest producing country, is expected to contract at a slower annual rate of 0.68 percent, whilst in Mexico and China production is expected to decline by 3.9 and 1.6 percent respectively.

In general, in the medium term, supply is expected to move in line with demand with producers being better able to plan production levels, due to an increase in the use of long term contracts between suppliers and importers. These contractual arrangements are the result of firmer demand by the manufacturers of non-traditional sisal products such as carpet yarn, paper pulp and composites, who require forward supply contracts to ensure regular and guaranteed deliveries, as opposed to the seasonal demand by the manufacturers of agricultural twine. The increase in the number of such long term contracts is expected to further improve the flow of information from consumers to producers and to reduce uncertainty. Such developments are expected also to support prices in the medium term and decrease their variability. Niche applications of sisal in the manufacturing of higher value added products such as paper pulp, carpet yarn and composites for the automobile industry are expected to generate additional demand, although the growth rates of these applications are expected to only partially offset the contraction of the traditional outlets of sisal.

Between 1988-90 and 2000 global exports declined by 4 percent per annum. Exports of fibre and manufactures contracted by 5.2 percent and 3.2 percent per annum respectively. It is projected that aggregate exports are likely to contract further by 3.4 percent per annum from 192 000 tonnes in 1998-2000 to 142 000 tonnes in 2010 as demand for sisal contracts. Exports of fibre are projected to decline faster than those of manufactures, as the share of manufactures in total exports increases from 64 percent of total exports in 1998-2000 to 71 percent in 2010. The increasing share of exports in the form of manufactures reflects a gradual shift of the processing capacity from the importing to the exporting countries, due particularly to a tendency in the European processing sector to relocate some of its production to Brazil.

2. Abaca

In the decade to 2000, global consumption of abaca, expressed in fibre equivalent, exhibited a strong annual growth rate reaching approximately 81 000 tonnes. Most of the increase in consumption took place in the EU and Japan in the form of increasing imports of paper pulp. During the same period, demand for traditional products, such as cordage, has remained stable. In the medium term, consumption of abaca fibre and products is expected to grow at a slow rate. On average, between 1988-90 and 2000, global production of abaca has been increasing ahead of demand, with producers adjusting rapidly to price increases and slowly to price falls. High prices prevailing between 1992 and 1998 encouraged an expansion in production. However, subsequent price decreases led to at most only a partial contraction of production, resulting in even more depressed prices in 2000 and 2001.

It is projected that in the medium term, production of abaca will contract at a slow rate of 0.5 percent per annum to a level of 83 000 tonnes in 2006 before expanding to 86 000 tonnes in 2010 as prices strengthen from the low point of 2000-01. The Philippines is expected to remain the major supplier producing more than 85 percent of the global production, whilst production in Ecuador is projected to contract from a high point of 16 000 tonnes at the end of the 1990s to approximately 12 000 tonnes in 2010 (see Table 1).

During the last decade, aggregate exports of fibre and manufactures have been increasing by 1.7 percent per annum to an average of 76 400 tonnes in 1998-2000. However, the composition of exports has been changing with manufactures amounting to 52 percent of the total in 1998-2000, as compared to 46 percent in 1988-90, as demand for manufactures, especially pulp, has been strengthening relative to that for fibre. The EU and Japan emerged into major consumers of pulp during the 1990s, with Germany, UK and France importing an average of 19 365 tonnes (expressed in fibre equivalent) of pulp in 2000 and 2001. During the same period Japan's average imports amounted to 9 045 tonnes. In total, during the 2000-01 period, exports of pulp to the EU and Japanese markets amounted to 71 percent of the total exports of manufactures, reflecting the importance of these markets.

In the medium term to the year 2010, it is expected that total exports will remain stable amounting to approximately 78 000 tonnes (see Table 2). However, the share of manufactures in total exports is expected to increase to 58 percent amounting to 45 000 tonnes in 2010, compared to a 1998-2000 average of 40 000 tonnes. Exports of fibre are projected to contract by 1.8 percent per annum to 28 000 tonnes by the year 2010. Assuming normal economic conditions, strong market demand for specialty and non-woven paper will result in the share of pulp in total exports of manufactures increasing further and amounting to approximately 80 percent of total exports of manufactures by 2010. The fast growth in exports of pulp is also expected to be sustained by developments in the structure of the abaca processing industry in both the Philippines and the importing countries. Industry re-structuring in the UK in 2001 resulted in a decline in the imports of fibre and a corresponding increase in imports of pulp.

3. Coir

As a by-product of the production of other coconut products, coir production is, by and large, determined by demand. Abundant quantities of coconut husk imply that, given the availability of

labour and other inputs, coir producers can adjust relatively rapidly to market conditions and prices. It is estimated that approximately 10 percent of husks are utilised for fibre extraction, satisfying a growing demand for fibre and coir products. Between the 3-year periods of 1988-90 and 1998-2000, global consumption of coir expanded by 7.1 percent per annum with consumption expanding in both producing and importing countries. In India, the largest coir producing and consuming country, consumption increased by 8.4 percent per annum to 400 000 tonnes, representing some 75 percent of global production. The fast growth of consumption was fuelled mainly by increasing demand for traditional coir products such as rugs, carpets and mattresses, as well as for non-traditional products such as coir pith, rubberised coir and geotextiles. In the medium term, the rapid growth in global consumption is expected to slow down to an annual rate of around 1.4 percent per annum, as the pace at which the coir industry is able to supply innovative and diversified products may decelerate due to a number of constraints such as the small scale of the processing industry.

Production of coir fibre takes place in small or medium sized units mainly in India, Sri Lanka and Thailand. During the 1990s, production in India expanded by 8.2 percent annually in order to meet domestic demand, whilst in Sri Lanka, a major exporter of coir fibre, production contracted due to weakening export and domestic demand. In the medium term it is projected that global production will increase from an average of 534 000 tonnes in 1998-2000 to 640 000 tonnes in 2010. Most of the expansion in production is likely to take place in India, with some modest growth in Sri Lanka.

International trade accounted for 25 percent of global production in 1998-2000, compared to 40 percent in 1988-1990, since most of the expansion during the past decade in global production and consumption took place in India. Total exports increased by 2.6 percent to 149 000 tonnes in 1998-2000 while exports of manufactures increased by an annual rate of 6.3 percent, offsetting the decline in fibre exports. Strong demand for coir products in importing countries was met by India which in 1998-2000 accounted for 74 percent of global exports of value added products. Total exports from Sri Lanka, a traditional exporter of fibre and pith, declined by 1.5 percent per annum due to ongoing competition by synthetic foams and fibres. In the medium term, total exports are expected to continue increasing at an annual rate of 0.9 percent in line with global demand and consumption trends in the established market destinations such as the United States and the EU. Exports of manufactures are projected to grow by 1.53 percent per annum to 86 000 tonnes in 2010, whilst exports of fibre are expected to remain approximately stable (see Table 2).

Table 1: Hard Fibres: Production, Actual and Projected ('000 tonnes)

	Actual		Projected	Annual growth rates	
	1988-1990	1998-2000	2010	1988-1990 / 1998-2000	1998-2000/2010
Sisal and henequen					
World	441	301	257	-4.09	-2.09
Kenya	38	40	34	-7.23	-3.80
Madagascar	13	12	10	-1.10	-1.31
Tanzania	33	36	24	-5.08	-1.91
Brazil	211	234	204	-6.58	-0.68
Mexico	51	45	38	-2.09	-3.92
China	22	29	36	4.87	-1.64
Abaca					
World	74	87	86	2.00	-0.49
Ecuador	10	13	12	2.82	-0.62
Philippines	61	72	71	1.90	-0.46
Coir					
World	299	534	640	6.41	1.60
India	201	457	552	8.23	1.63
Sri Lanka	95	62	71	-1.61	1.35
Total Fibre (World)	172	301	374	7.09	1.94
Total Yarn (World)	126	233	265	5.66	1.13

Table 2 – Hard Fibres: Global Exports, Actual and Projected (000 tonnes)

	Actual		Projected	Annual growth rates	
	1988-1990	1998-2000	2010	1988-1990 / 1998-2000	1998-2000/2010
Sisal and henequen					
<i>Exports of raw fibre</i>					
World	140	71	41	-5.22	-5.39
Kenya	31	17	9	-6.86	-5.68
Madagascar	11	7	5	-6.32	-3.87
Tanzania	8	12	7	7.61	-5.77
Brazil	83	31	17	-7.16	-5.53
Mexico	0	0	0	-45.00	-9.91
China	2	0	0	-16.26	-6.63
<i>Exports of manufactures</i>					
World	172	122	96	-3.24	-2.43
United States	0	4	3	17.71	-2.37
European Union	40	27	19	-3.30	-3.01
Kenya	3	2	1	0.37	-3.99
Madagascar	1	1	0	-8.95	-2.28
Tanzania	15	3	3	-20.31	-2.05
Brazil	80	63	51	-1.89	-2.30
Mexico	19	7	6	-7.31	-2.41
China	0	3	3	13.67	-1.31
Abaca					
<i>Exports of raw fibre</i>					
World	34	32	28	0.93	-1.80
Ecuador	10	13	10	2.90	-2.04
Philippines	23	19	16	-0.68	-1.85
<i>Exports of manufactures</i>					
World	31	40	45	2.40	0.55
Ecuador	0.105	0.105	0.112	0.00	0.24
Philippines	31	39	45	2.45	0.56
Coir					
<i>Exports of raw fibre</i>					
World	70	71	72	-0.17	0.12
Sri Lanka	66	48	47	-3.18	0.12
India	0.10	2	2	23.48	1.51
Philippines	0.23	2	2	24.33	-0.04
<i>Exports of manufactures</i>					
World	40	71	86	6.35	1.53
India	26	53	63	7.28	1.49
Sri Lanka	5	9	14	11.67	2.33
Philippines	0.1	3.7	3.9	37.56	0.91

Table 3 – Hard Fibres: Global Imports, Actual and Projected (000 tonnes)

	Actual		Projected	Annual growth rates	
	1988-1990	1998-2000	2010	1988-1990 / 1998-2000	1998-2000/2010
Sisal and henequen					
<i>Imports of raw fibre</i>					
World	114	64	44	-4.81	-4.11
Canada	0.27	0.44	0.25	3.38	-4.99
United States	0.4	0.13	0.15	-16.05	-1.74
European Union	71	41	23	-4.34	-4.97
Former USSR	13	1	1	-16.98	-4.01
Oceania	2	1	1	-10.48	-3.54
Australia	1	0	0	-6.45	-4.01
New Zealand	1	0	0	-14.78	-3.17
Japan	4	2	1	-7.03	-4.12
<i>Imports of manufactures</i>					
World	167	93	90	-5.52	-1.51
Canada	12	7	6	-3.92	-2.30
United States	84	44	41	-6.44	-1.57
European Union	51	25	21	-7.51	-2.03
Former USSR	0	2	2	n/a	-1.94
Abaca					
<i>Imports of raw fibre</i>					
World	31	34	28	1.13	-1.63
Canada	0	0	0	-13.89	1.10
United States	11	7	5	-4.12	-2.73
European Union	12	19	17	4.16	-1.33
Japan	6	7	6	2.62	-1.44
<i>Imports of manufactures (cordage)</i>					
World	n/a	43	47	n/a	0.34
United States	n/a	6	6	n/a	0.14
European Union	n/a	10	10	n/a	-0.09
Far East	n/a	25	28	n/a	0.44
Coir					
<i>Imports of raw fibre</i>					
World	75	106	98	4.94	0.13
Canada	0	1	1	4.24	-0.44
United States	7	13	13	6.48	0.16
European Union	38	48	42	3.29	-0.44
Other Europe	10	5	5	-1.74	-0.01
Japan	7	7	6	1.05	-0.53
China	5	18	15	13.09	-0.50
<i>Imports of manufactures</i>					
World					
Canada	38	58	69	5.24	1.59
United States	3	4	6	3.89	2.55
European Union	1	10	14	18.31	2.41
Other Europe:	26	35	40	3.51	1.41
Japan	2	2	2	-0.89	1.56

Table 4 – Hard Fibres: Global Apparent Consumption, Actual and Projected (000 tonnes)

	Actual		Projected	Annual growth rates	
	1988-1990	1998-2000	2010	1988-1990 / 1998-2000	1998-2000/2010
Sisal and henequen					
World	336	224	215	-4.84	-0.84
Canada	14	9	7	-3.64	-2.42
United States	93	44	42	-7.63	-1.50
European Union	83	39	26	-7.31	-4.04
Oceania	2	1	1	-7.23	-2.95
Australia	13	7	6	-7.14	-2.00
New Zealand	11	11	16	3.88	0.32
Japan	4	2	1	-7.03	-4.12
China	20	38	29	6.29	-2.34
Abaca/1					
World	31	81	80	12.77	-0.40
Canada	0	0	0	-13.89	1.10
United States	11	14	12	4.72	-1.13
European Union	12	30	27	10.75	-0.87
Japan	6	35	37	23.02	0.09
Coir					
World	298	551	638	7.07	1.42
Canada	3	6	8	7.08	1.98
United States	8	23	27	10.15	1.28
European Union	67	85	84	3.38	0.44
Other Europe	12	8	8	-1.76	0.48
Japan	7	7	7	1.60	-0.28
China	5	18	15	13.09	-0.50
India	172	401	480	8.40	1.62