

RECOVERED PAPER DATA 1999-2000



RECOVERED PAPER DATA, 1999-2000

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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RECOVERED PAPER DATA, 1999-2000

INTRODUCTION

This FAO survey on “*Recovered Paper Data, 1999-2000*” follows the same format as last year. It was produced, as last year, in co-operation with the Confederation of European Paper Industry (CEPI) which supplied the necessary data relevant to its member countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, the United Kingdom) and its associate members (Czech Republic, Hungary, Norway, Slovakia, Switzerland). FAO collected data for the other countries.

As last year, with the concurrence of the FAO Advisory Committee on Paper and Wood Products, the two questions on the use of recovered paper for energy generation and on market de-inked pulp were eliminated, as well as the one concerning non-recoverable paper and paperboard.

The survey presents data on recovery, trade, and utilization of recovered paper. Historical data for the period 1999-2000 is presented and only a some (ten) countries provided projections of recovery and use of recovered paper for the years 2001, 2002, 2003 and 2004. The ratios used to analyse the data are the ones recommended by the Sub-group on Waste Paper Terminology, and are defined later in this document.

Appendix 1 contains a sample of the questionnaires, which FAO sent to 46 countries.

In addition to the 19 countries covered by CEPI, 15¹ others answered the questionnaires. All of these 34 countries represent over 80 percent of the world paper and paperboard production, and the data presented can be considered representative of the recovery, use and trade of recovered paper in the world.

DEFINITIONS OF TERMS USED

The FAO Advisory Committee on Pulp and Paper created a Sub-group on Waste Paper Terminology to define the terms to be used by FAO to describe waste paper recovery and utilization. The two changes made concern the terminology and apply to waste paper utilization rate and waste paper in fibre use rate, which have been renamed recovered paper utilization rate and recovered paper in fibre use rate, respectively. The following rates are used in this survey:

- a) Waste paper net recovery
- b) Adjusted waste paper net recovery
- c) Recovered paper utilization
- d) Recovered paper in fibre use

¹ Australia, Brazil, Canada, Chile, Colombia, Iraq, Israel, Japan, Mexico, Morocco, New Zealand, Romania, Slovenia, United States of America, Venezuela.

The definitions of the rates are given below:

a) Waste paper net recovery rate is the amount of waste paper collected for re-use as a percentage of the adjusted paper and paperboard consumption;

(Note: the adjusted paper and paperboard consumption is equal to the apparent consumption of paper and paperboard plus the net trade in converted paper and paperboard products, excluding printed materials.)

b) Adjusted waste paper net recovery rate is the amount of waste paper collected as a percentage of the adjusted paper and paperboard consumption from which the non-recoverable paper and paperboard is deducted;

c) Recovered paper utilization rate is the amount of recovered paper used for paper and paperboard as a percentage of paper and paperboard production;

d) Recovered paper in fibre use rate is the amount of recovered paper used for paper and paperboard as a percentage of the total fibre used for paper and paperboard.

NOTE

The figures reported in this survey are the ones supplied by countries. As is apparent from some figures in the tables (consumption of recovered paper without any relation to paper production, unrealistic percentages, etc.), there is some misunderstanding in the definitions, and readers are urged to use caution when interpreting data for some countries.

RECOVERED PAPER TRADE

Table 1a and 1b – *Recovered paper trade in relation to recovered paper collection and utilization of recovered paper*, and Appendices 5 and 6 present the results of the survey.

In 2000, the United States of America was the major exporter with over 9 million tonnes, followed by Germany with close to 4 million tonnes and by Belgium-Luxembourg and the Netherlands with 1.8 and 1.7 million tonnes, respectively.

TABLE 1a – RECOVERED PAPER TRADE IN RELATION TO RECOVERED PAPER COLLECTION AND UTILIZATION OF RECOVERED PAPER

Country	1999					
	Waste paper collected for re-use	Exports of recovered paper		Recovered paper used for paper and paperboard	Imports of recovered paper	
	1000 mt	1000 mt	%	1000 mt	1000 mt	%
Australia ¹	1762	276	16	1536	46	3
Austria						
Belgium-Luxembourg						
Brazil	2416	2	0	2416	34	1
Canada		503		4953	2292	46
Chile	230	12	5		0	
Colombia		2		340	37	11
Czech Republic						
Denmark						
Finland						
France						
Germany						
Greece						
Hungary						
Iraq	11		0			
Ireland						
Israel	211		0	233	10	4
Italy						
Japan	17196	288	2	17084	300	2
Mexico				3392	1222	36
Morocco	182		0	57	22	39
Netherlands						
New Zealand		90		109	0	0
Norway						
Portugal						
Romania	120	0	0	117	7	6
Slovakia						
Slovenia	90	13	14	246	169	69
Spain						
Sweden						
Switzerland						
United Kingdom						
United States of America	42473	7727	18	33319	386	1
Venezuela					123	

¹ Australia data covers July 1998 to June 1999 instead of 1999

As shown in Appendix 5, exports from the United States of America grew from 7.7 million tonnes in 1999 to 9.3 million tonnes in 2000.

Appendix 6 shows that the main importers of recovered paper in 2000 were Canada, France, Germany and the Netherlands, and accounting for a total of nearly 6.5 million tonnes. Those imports represent significant percentage of the total usage of recovered paper especially in the case of the Netherlands with over 80 percent in 2000.

TABLE 1b - RECOVERED PAPER TRADE IN RELATION TO RECOVERED PAPER COLLECTION AND UTILIZATION OF RECOVERED PAPER

Country	2000					
	Waste paper collected for re-use	Exports of recovered paper		Recovered paper used for paper and paperboard	Imports of recovered paper	
	1000 mt	1000 mt	%	1000 mt	1000 mt	%
Australia ¹	1821	302	17	1602	82	5
Austria		196		1943	818	42
Belgium-Luxembourg		1793		606	759	125
Brazil	2612	4	0	2612	24	1
Canada		651		5027	2282	45
Chile	295	7	2		12	
Colombia		1		426	72	17
Czech Republic		81		359	52	14
Denmark		416		416	134	32
Finland		112		685	83	12
France		886		5777	1363	24
Germany		3905		10921	1327	12
Greece		53		380	7	2
Hungary		38		317	81	26
Iraq	13		0			
Ireland		49		47	11	23
Israel	228		0	256	15	6
Italy		218		4620	741	16
Japan	18312	372	2	18089	278	2
Mexico				3522	1201	34
Morocco ²	180		0	57	22	39
Netherlands		1736		2414	1968	82
New Zealand		92		190	0	0
Norway		248		329	63	19
Portugal		145		393	30	8
Romania	131	1	0	128	15	12
Slovakia		28		278	158	57
Slovenia	94	26	28	250	182	73
Spain		103		3829	658	17
Sweden		197		1817	551	30
Switzerland		282		1121	291	26
United Kingdom		554		4884	136	3
United States of America	44839	9323	21	34070	552	2
Venezuela					142	

¹ Australia data covers July 1999 to June 2000 instead of 2000

² Morocco: figures have been estimated

RECOVERED PAPER UTILIZATION FOR PURPOSES OTHER THAN PAPER AND PAPERBOARD MAKING

Tables 2a and 2b – *Distribution of the total use of recovered paper between paper/paperboard making and other uses*, give the relevant information. The information collected indicates that in nearly all countries virtually all recovered paper is used for paper and paperboard production.

TABLE 2a – DISTRIBUTION OF THE TOTAL USE OF RECOVERED PAPER BETWEEN PAPER/PAPERBOARD MAKING AND OTHER USES

Country	1999				
	Total use of recovered paper 1000 mt	Recovered paper used for paper and paperboard		Recovered paper used for other purposes	
		1000 mt	1000 mt	%	1000 mt
Australia ¹	1536	1536	100	0	0
Austria					
Belgium-Luxembourg					
Brazil	2416	2416	100	0	0
Canada	4953	4953	100		
Chile					
Colombia	340	340	100		
Czech Republic					
Denmark					
Finland					
France					
Germany					
Greece					
Hungary					
Iraq	3			3	100
Ireland					
Israel	243	233	96	10	4
Italy					
Japan	17208	17084	99	124	1
Mexico	3392	3392	100		
Morocco	57	57	100		
Netherlands					
New Zealand	109	109	100		
Norway					
Portugal					
Romania	123	117	95	6	5
Slovakia					
Slovenia	246	246	100		
Spain					
Sweden					
Switzerland					
United Kingdom					
United States of America	35133	33319	95	1814	5
Venezuela					

¹ Australia data covers July 1998 to June 1999 instead of 1999

TABLE 2b – DISTRIBUTION OF THE TOTAL USE OF RECOVERED PAPER BETWEEN PAPER/PAPERBOARD MAKING AND OTHER USES

Country	2000				
	Total use of recovered paper 1000 mt	Recovered paper used for paper and paperboard		Recovered paper used for other purposes	
		1000 mt	1000 mt	%	1000 mt
Australia ¹	1602	1602	100	0	0
Austria	1943	1943	100		
Belgium-Luxembourg	606	606	100		
Brazil	2612	2612	100	0	0
Canada	5027	5027	100		
Chile					
Colombia	426	426	100		
Czech Republic	359	359	100		
Denmark	416	416	100		
Finland	685	685	100		
France	5777	5777	100		
Germany	10921	10921	100		
Greece	380	380	100		
Hungary	317	317	100		
Iraq	4			4	100
Ireland	47	47	100		
Israel	266	256	96	10	4
Italy	4620	4620	100		
Japan	18218	18089	99	129	1
Mexico	3522	3522	100		
Morocco ²	57	57	100		
Netherlands	2414	2414	100		
New Zealand	190	190	100		
Norway	329	329	100		
Portugal	393	393	100		
Romania	143	128	90	15	10
Slovakia	278	278	100		
Slovenia	250	250	100		
Spain	3829	3829	100		
Sweden	1817	1817	100		
Switzerland	1121	1121	100		
United Kingdom	4884	4884	100		
United States of America	36066	34070	94	1996	6
Venezuela					

¹ Australia data covers July 1999 to June 2000 instead of 2000

² Morocco: figures have been estimated

RECOVERED PAPER UTILIZATION BY THE PAPER AND PAPERBOARD INDUSTRY

Tables 3a and 3b – *Recovered paper utilization rate, recovered paper in fibre use rate and total fibre used for paper and paperboard production*, indicate the amounts of recovered paper being used in the paper furnish.

The recovered paper utilization rate, representing how much recovered paper is used in the production of paper and paperboard, shows low values in fibre-rich countries, and high in fibre-poor regions.

Tables 4a and 4b – *Composition of recovered paper (in percent)* show what are the major grades of paper entering in the flow of recovered paper. On average worldwide, corrugated, solid containers and kraft sack waste account for nearly half of the total recovered paper, while newspaper and magazines grades account for a much lower share of the total.

Tables 5a and 5b – *Use of recovered paper by grades in percent* show what percentage of recovered paper is used in the production of various paper and paperboard grades. The data indicates that the percentage of recovered paper entering the production of paper is much higher for packaging grades than cultural grades.

TABLE 3a - RECOVERED PAPER UTILIZATION RATE, RECOVERED PAPER IN FIBRE USE RATE AND TOTAL FIBRE USED FOR PAPER AND PAPERBOARD PRODUCTION

Country	1999					
	Paper and paperboard production	Total fibre used for paper and paperboard	Recovered paper used for paper and paperboard	Total fibre used / paper and paperboard production	Recovered paper in fibre use rate	Recovered paper utilization rate
	1000 mt	1000 mt	1000 mt	%	%	%
Australia ¹	2564	2540	1536	99	60	60
Austria						
Belgium-Luxembourg						
Brazil	6953	6188	2416	89	39	35
Canada	20198		4953	0		25
Chile						
Colombia	734	169	340	23	201	46
Czech Republic						
Denmark						
Finland						
France						
Germany						
Greece						
Hungary						
Iraq	8	13		154	0	0
Ireland						
Israel	280		233	0		83
Italy						
Japan	30631	30394	17084	99	56	56
Mexico	3796	4249	3392	112	80	89
Morocco	110	57	57	52	100	52
Netherlands						
New Zealand	809	935	109	116	12	13
Norway						
Portugal						
Romania	289	281	117	97	42	41
Slovakia						
Slovenia	508	460	246	91	53	48
Spain						
Sweden						
Switzerland						
United Kingdom						
United States of America	89712		33319	0		37
Venezuela						

¹ Australia data covers July 1998 to June 1999 instead of 1999

TABLE 3b - RECOVERED PAPER UTILIZATION RATE, RECOVERED PAPER IN FIBRE USE RATE AND TOTAL FIBRE USED FOR PAPER AND PAPERBOARD PRODUCTION

Country	2000					
	Paper and paperboard production	Total fibre used for paper and paperboard	Recovered paper used for paper and paperboard	Total fibre used / paper and paperboard production	Recovered paper in fibre use rate	Recovered paper utilization rate
	1000 mt	1000 mt	1000 mt	%	%	%
Australia ¹	2836	2816	1602	99	57	56
Austria	4385		1943	0		44
Belgium-Luxembourg	1727		606	0		35
Brazil	7188	6418	2612	89	41	36
Canada	20675		5027	0		24
Chile						
Colombia	771	895	426	116	48	55
Czech Republic	808		359	0		44
Denmark	400		416	0		104
Finland	13509		685	0		5
France	10005		5777	0		58
Germany	18184		10921	0		60
Greece	496		380	0		77
Hungary	507		317	0		63
Iraq	9	15		176	0	0
Ireland	43		47	0		109
Israel	300		256	0		85
Italy	9001		4620	0		51
Japan	31828	31648	18089	99	57	57
Mexico	3897	4390	3522	113	80	90
Morocco ²	100	60	57	60	95	57
Netherlands	3364		2414	0		72
New Zealand	875	906	190	104	21	22
Norway	2301		329	0		14
Portugal	1290		393	0		30
Romania	339	321	128	95	40	38
Slovakia	663		278	0		42
Slovenia	558	478	250	86	52	45
Spain	4764		3829	0		80
Sweden	10786		1817	0		17
Switzerland	1706		1121	0		66
United Kingdom	6604		4884	0		74
United States of America	87230		34070	0		39
Venezuela						

¹ Australia data covers July 1999 to June 2000 instead of 2000

² Morocco: figures have been estimated

TABLE 4a – COMPOSITION OF RECOVERED PAPER (IN PERCENT)

Country	1999					
	Total recovered paper	Old and over-issue newspapers and magazines, telephone directories, brochures, etc.	Corrugated, solid containers and kraft sack waste (old and new)	Wood-free printing and writing paper, punch cards and other high-grade qualities	Mixed grades	All other types of recovered papers
	%	%	%	%	%	%
Australia ¹	100	19	65	11	0	5
Austria						
Belgium-Luxembourg						
Brazil	100	7	68	15	6	4
Canada	100	43	35	12	3	7
Chile	100	22	61	13	0	4
Colombia	100	9	58	30	3	0
Czech Republic						
Denmark						
Finland						
France						
Germany						
Greece						
Hungary						
Iraq	100	0	0	11	51	39
Ireland						
Israel	100	19	52	24	5	0
Italy						
Japan	100	26	46	10	13	3
Mexico	100	22	58	17	0	2
Morocco						
Netherlands						
New Zealand	100	68	31	1	0	0
Norway						
Portugal						
Romania	100	0	13	0	87	0
Slovakia						
Slovenia	100	26	4	34	37	0
Spain						
Sweden						
Switzerland						
United Kingdom						
United States of America						
Venezuela	100	10	56	31	2	2

¹ Australia data covers July 1998 to June 1999 instead of 1999

TABLE 4b – COMPOSITION OF RECOVERED PAPER (IN PERCENT)

Country	2000					
	Total recovered paper	Old and over-issue newspapers and magazines, telephone directories, brochures, etc.	Corrugated, solid containers and kraft sack waste (old and new)	Wood-free printing and writing paper, punch cards and other high-grade qualities	Mixed grades	All other types of recovered papers
	%	%	%	%	%	%
Australia ¹	100	20	65	6	4	5
Austria	100	31	35	7	27	0
Belgium-Luxembourg	100	30	44	3	23	0
Brazil	100	7	69	14	6	4
Canada	100	43	35	12	4	6
Chile	100	7	56	31	0	5
Colombia	100	8	60	29	2	0
Czech Republic	100	25	50	5	20	0
Denmark	100	17	42	26	15	0
Finland	100	44	31	14	10	0
France	100	24	52	13	11	0
Germany	100	30	27	13	29	0
Greece	100	8	68	11	13	0
Hungary	100	9	56	4	31	0
Iraq	100	0	0	16	47	36
Ireland	100	0	89	0	11	0
Israel	100	19	55	21	6	0
Italy	100	17	48	14	22	0
Japan	100	27	46	10	13	3
Mexico	100	22	60	16	0	2
Morocco						
Netherlands	100	18	19	8	54	0
New Zealand	100	32	66	0	0	2
Norway	100	24	71	3	2	0
Portugal	100	20	58	7	15	0
Romania	100	0	16	0	84	0
Slovakia	100	42	35	10	14	0
Slovenia	100	25	4	35	36	0
Spain	100	12	51	17	19	0
Sweden	100	54	30	4	12	0
Switzerland	100	32	23	9	36	0
United Kingdom	100	28	45	18	8	0
United States of America						
Venezuela	100	8	57	32	2	1

¹ Australia data covers July 1999 to June 2000 instead of 2000

TABLE 5a - USE OF RECOVERED PAPER BY GRADES IN PERCENT

Country	1999										
	Recovered paper used for paper and paperboard	Newsprint	Other printing and writing papers	Household and sanitary paper	Kraftliner	Other linerboard and fluting medium	Other kraft wrapping and packaging paper	Folding boxboard	Other wrapping and packaging paper and paperboard	Other paper and paperboard n.e.s.	
	%	%	%	%	%	%	%	%	%	%	%
Australia ¹	100	10	2	2	0	0	0	0	0	0	86
Austria											
Belgium-Luxembourg											
Brazil	100	0	0	16	8	52	4	8	5	6	6
Czech Republic	100	0	0	0	0	0	100	0	0	0	0
Denmark											
Finland											
France											
Germany											
Greece											
Hungary											
Ireland											
Italy											
Mexico	100	22	17	0	0	0	58	0	0	0	2
Netherlands											
Norway											
Portugal											
Romania	100	0	0	30	13	43	0	5	9	0	0
Slovakia											
Slovenia	100	16	0	20	0	0	4	59	0	0	0
Spain											
Sweden											
Switzerland											
United Kingdom											
United States of America	100	10	7	11	11	0	1	1	0	60	60

¹ Australia data covers July 1998 to June 1999 instead of 1999

TABLE 5b - USE OF RECOVERED PAPER BY GRADES IN PERCENT

Country	2000										
	Recovered paper used for paper and paperboard	Newsprint	Other printing and writing papers	Household and sanitary paper	Kraftliner	Other linerboard and fluting medium	Other kraft wrapping and packaging paper	Folding boxboard	Other wrapping and packaging paper and paperboard	Other paper and paperboard n.e.s.	
	%	%	%	%	%	%	%	%	%	%	%
Australia ¹	100	9	2	6	0	0	0	0	0	0	83
Austria	100	14	14	8	39	0	2	21	0	0	1
Belgium-Luxembourg	100	22	11	1	45	0	17	0	0	0	4
Brazil	100	0	1	16	8	54	4	6	5	0	6
Czech Republic	100	16	2	7	70	0	0	5	0	0	0
Denmark	100	0	28	0	54	0	12	5	0	0	2
Finland	100	35	1	21	2	0	37	1	0	0	4
France	100	17	6	5	56	0	8	7	0	0	2
Germany	100	19	12	7	38	0	9	9	0	0	6
Greece	100	0	5	26	11	0	8	50	0	0	0
Hungary	100	0	6	12	66	0	16	0	0	0	1
Ireland	100	0	0	0	100	0	0	0	0	0	0
Italy	100	2	3	6	60	0	10	15	0	0	3
Mexico	100	22	16	0	0	0	60	0	0	0	2
Netherlands	100	16	0	6	35	0	33	9	0	0	0
Norway	100	11	0	11	67	0	10	0	0	0	1
Portugal	100	0	1	15	65	0	8	8	0	0	2
Romania	100	0	0	32	16	46	0	0	0	0	0
Slovakia	100	0	0	44	45	0	9	1	0	0	0
Slovenia	100	16	0	20	0	0	4	60	0	0	0
Spain	100	8	2	9	55	0	2	12	0	0	11
Sweden	100	45	0	11	30	0	6	8	0	0	0
Switzerland	100	28	6	8	39	0	0	17	0	0	2
United Kingdom	100	25	4	13	41	0	8	1	0	0	8
United States of America	100	11	6	11	10	0	1	1	0	0	60

¹ Australia data covers July 1999 to June 2000 instead of 2000

LOSSES IN REPULPING OF WASTE PAPER

Waste paper has higher losses during pulping than virgin material, due to the amount of fines and filler in the waste paper. As the content of waste paper increases in the raw material, the amount of losses will go up.

Table 6 – *Losses in repulping and processing into paper and paperboard*, presents the percentage figures for pulping losses. Though data is scarce, in most of the countries reporting the information, pulping losses are between 10 and 17 percent, with some exceptions probably due to antiquated equipment or poor processing control.

TABLE 6 - LOSSES IN REPULPING AND PROCESSING INTO PAPER AND PAPERBOARD

Country	1999			2000		
	Total recovered paper used	Losses in pulping		Total recovered paper used	Losses in pulping	
	1000 mt	1000 mt	%	1000 mt	1000 mt	%
Australia ¹	1536	185	12	1602	163	10
Austria				1943		
Belgium-Luxembourg				606		
Brazil	2416	362	15	2612	392	15
Canada	4953			5027		
Chile						
Colombia	340	61	18	426	71	17
Czech Republic				359		
Denmark				416		
Finland				685		
France				5777		
Germany				10921		
Greece				380		
Hungary				317		
Iraq	3	2	48	4	2	51
Ireland				47		
Israel	243			266		
Italy				4620		
Japan	17208			18218		
Mexico	3392	453	13	3522	493	14
Morocco ²	57	6	11	57	6	11
Netherlands				2414		
New Zealand	109	126	116	190	31	16
Norway				329		
Portugal				393		
Romania	123	38	31	143	49	34
Slovakia				278		
Slovenia	246	36	15	250	37	15
Spain				3829		
Sweden				1817		
Switzerland				1121		
United Kingdom				4884		
United States of America	35133			36066		
Venezuela						

¹ Australia data covers July 1998 to June 1999 and July 1999 to June 2000 instead of 1999 and 2000

² Morocco: figures from 2000 have been estimated

PROJECTED FUTURE RECOVERY OF WASTE PAPER

Table 7 – *Projected future recovery of waste paper and use of recovered paper for paper and paperboard making*, shows projections for the next four years in both waste paper collected for re-use and for recovered paper used for paper and paperboard. They are expressed as a percentage of the 2000 level taken as a base line (100 percent).

TABLE 7 - PROJECTED FUTURE RECOVERY OF WASTE PAPER AND USE OF RECOVERED PAPER FOR PAPER AND PAPERBOARD MAKING

Country	Waste paper collected for re-use					Recovered paper used for paper and paperboard				
	%					%				
	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
Australia	100	102	103	103	104	100	103	104	104	105
Brazil	100	104	110	117	126	100	104	110	117	126
Iraq	100	108	195	203	207	100	106	110	115	101
Japan	100	102	104	106	108	100	100	102	103	105
Mexico						100	120	121	122	126
Morocco	100	100	100	100	100	100	100	100	100	100
New Zealand						100	100	100	100	100
Romania	100	170	179	191	199	100	182	207	218	234
Slovenia	100	106	112	122	128	100	112	116	86	90
United States of America	100	0	0	0	0	100	103	106	107	0

APPENDIX 1 – QUESTIONNAIRES

FAO RECOVERED PAPER SURVEY (2000)
Part 1: Main Questionnaire

Country:

(All figures in 1000 mt)		1999	2000
1.	Apparent consumption of paper and paperboard		
2.	Net trade in converted paper and paperboard products		
3.	Waste paper collected for re-use		
4.	Recovered paper collected for paper and paperboard production		
5.	Exports of recovered paper*		
6.	Imports of recovered paper*		
7a.	Recovered paper* used domestically for purposes other than paper and paperboard making		
7b.	Recovered paper* used domestically for paper and paperboard making		
(i)	Old and over-issue newspapers and magazines, telephone directories, brochures, etc.		
(ii)	Corrugated, solid containers and kraft sack waste (old and new)		
(iii)	Wood-free printing and writing paper, punch cards and other high-grade qualities		
(iv)	Mixed grades		
(v)	All other types of recovered papers		
8.	Losses in repulping and processing into paper and paperboard		
9.	Total fibre used for paper and paperboard		
10.	Paper and paperboard production		

* Including recovered paper market pulp measured in terms of recovered paper.

FAO RECOVERED PAPER SURVEY (2000)
Part 2: Use of the main types of recovered paper in the manufacture of major grades of paper and paperboard

Country:

		Types of recovered paper (all figures in 1000 mt)					
		Recovered paper* used domestically for paper and paperboard making. Total recovered paper	Old and over-issue newspapers, magazines, telephone directories, etc.	Corrugated, solid container and kraft sack waste (old and new)	Wood-free printing and writing papers, punch cards and other high-grade qualities	Mixed grades	All other types of recovered paper
	years	[7b.]**	[7b.(i)]**	[7b.(ii)]**	[7b.(iii)]**	[7b.(iv)]**	[7b.(v)]**
Major grades of paper and paperboard	1999						
	2000						
Paper and paperboard total	1999						
	2000						
Newsprint	1999						
	2000						
Other printing and writing papers	1999						
	2000						
Household and sanitary paper	1999						
	2000						
Kraftliner	1999						
	2000						
Other linerboard and fluting medium	1999						
	2000						
Other kraft wrapping and packaging paper	1999						
	2000						
Folding boxboard	1999						
	2000						
Other wrapping and packaging paper and paperboard	1999						
	2000						
Other paper and paperboard, n.e.s.	1999						
	2000						

* Including recovered paper market pulp measured in terms of recovered paper.

** Same headings as in Part 1: Main Questionnaire.

FAO RECOVERED PAPER SURVEY (2000)
Part 3: Projected future consumption and supply of recovered paper

Country:

(All figures in 1000 mt)	2000	2001	2002	2003	2004
Waste paper collected for re-use [3] **					
Exports of recovered paper* [5] **					
Imports of recovered paper* [6] **					
Recovered paper* used domestically for purposes other than paper and paperboard making [7a.] **					
Recovered paper* used domestically for paper and paperboard making [7b.] **					

* Including recovered paper market pulp measured in terms of recovered paper.

** Same headings as in Part 1: Main Questionnaire.

**APPENDIX 2 – DEFINITIONS OF THE TERMS USED IN
THE FAO RECOVERED PAPER SURVEY QUESTIONNAIRE**

**APPENDIX 2 – DEFINITIONS OF THE TERMS USED IN
THE FAO RECOVERED PAPER SURVEY QUESTIONNAIRE**

1. Apparent consumption of paper and paperboard is the quantity of paper and paperboard consumed within a country without taking into account the changes in stocks. It is thus paper and paperboard production within the country plus imports minus exports.
2. Net trade in converted paper and paperboard products (excluding printed material) is the difference between the imports and exports of converted paper and paperboard products (SITC [Rev. 2] 642 and part of BIN 48). In case imports exceed exports, this factor is positive, and in case exports are higher than imports the factor is negative. This factor is used to adjust the apparent consumption of paper and paperboard in order to arrive at adjusted paper and paperboard consumption.
3. Waste paper collected for re-use means the total quantity of waste paper collected from any sources of supply, in any form and for any kind of major industrial or commercial uses (including also other uses than paper and paperboard manufacturing). Broke, trimmings, tailings, etc., occurring in the paper manufacturing process cycle should, however, be excluded.

The annual volume of waste paper collected for re-use can be estimated by the following sequence shown below:

		<u>metric tons</u>
	recovered paper used domestically for paper and paperboard	...
plus	recovered paper used for purposes other than paper and paperboard making such as: moulded products, in bulk as wrapping or packaging material, any other major industrial or commercial purpose	...
less	imports of recovered paper for any kind of use	...
plus	exports of recovered paper for any kind of use	...
SUM	recovered paper collected for re-use	<hr style="border: none; border-top: 1px solid black;"/> ... <hr style="border: none; border-top: 3px double black;"/>

4. Recovered paper collected for paper and paperboard production is the quantity of used paper collected for recovery as raw material for the manufacture of paper and paperboard.
- 5 and 6. Exports and imports of recovered paper are the quantities of all kinds of waste paper exported and imported for any kind of use including waste paper market pulp² measured in terms of waste paper inputs.

² Recovered paper market pulp is the pulp made of recovered paper for sale in the open market and does not include recovered paper pulp used in own plant or shipped to wholly owned or associated companies within the country. All recovered paper pulp moving outside the producing country is considered to be recovered paper market pulp.

- 7a. Recovered paper used domestically for purposes other than paper and paperboard making is the quantity of waste paper used for fibre building boards, moulded products, in bulk as wrapping and packaging material or for any other major industrial or commercial use.
- 7b. Recovered paper used domestically for paper and paperboard making is the net quantity of the waste paper intake at the mill (and excluding all sorting losses) of any kind of waste paper - either locally collected or imported - which is used exclusively in paper and paperboard manufacture including also recovered paper market pulp measured in terms of recovered paper input. (Whenever possible, the quantities of recovered paper should be expressed at 90 percent dryness and should include the losses in repulping and processing into paper and paperboard.) The details under this heading include the following:
- i) Old and over-issue newspapers and magazines, telephone directories, brochures, etc., i.e. waste paper containing mainly mechanical pulp.
 - ii) Corrugated, solid container and kraft sack waste (old and new), i.e. recovered paper containing mainly unbleached sulphate pulp.
 - iii) Wood-free printing and writing papers, copy paper, computer printouts, and other high-grade qualities, i.e. recovered paper containing mainly bleached chemical pulp.
 - iv) Mixed grades.
 - v) All other types of recovered paper.
8. Losses in repulping and processing into paper and paperboard is the quantity which is lost as broken fibres, fillers, coatings and other additives when the recovered paper is repulped, as well as the fibre losses in processing the derived recovered paper pulp into paper and paperboard.
9. Total fibre used for paper and paperboard is the total input quantity of all types of fibres at 90 percent dryness used for paper and paperboard manufacturing. The fibres can originate from wood (round, split, chips, residues, sawdust, etc.), from non-wood fibrous vegetable materials (bagasse, straw, bamboo, esparto, other reeds and grass, cotton linters, flax, hemp, etc.), from rags and other textile wastes and from recovered paper.
10. Paper and paperboard production is the quantity of all paper and paperboard of commercial quality (fibre building boards not included) produced within a country.

<p>PLEASE NOTE: For some of the headings or for some parts of the headings the data might not be readily available. In such cases you are kindly requested to make estimates and to indicate such estimates with, e.g. a footnote.</p>
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APPENDIX 3 - WASTE PAPER RECOVERY AND UTILIZATION OF RECOVERED PAPER IN PAPER AND PAPERBOARD INDUSTRY IN 1999

APPENDIX 4 - WASTE PAPER RECOVERY AND UTILIZATION OF RECOVERED PAPER IN PAPER AND PAPERBOARD INDUSTRY IN 2000

APPENDIX 5 - EXPORTS OF RECOVERED PAPER BY COUNTRY OF DESTINATION IN 2000

APPENDIX 6 - IMPORTS OF RECOVERED PAPER BY COUNTRY OF ORIGIN IN 2000

APPENDIX 3 - WASTE PAPER RECOVERY AND UTILIZATION OF RECOVERED PAPER IN PAPER AND PAPERBOARD INDUSTRY									
Country	1999								
	Apparent consumption of paper and paperboard 1000 mt	Net trade in converted paper and paperboard products 1000 mt	Adjusted consumption of paper and paperboard 1000 mt	Waste paper collected for re-use 1000 mt	Recovered paper collected for paper and paperboard production 1000 mt	Recovered paper collection rate %	Exports of recovered paper 1000 mt	Imports of recovered paper 1000 mt	
Australia ¹	3485	227	3712	1762	1536	41	276	46	
Austria									
Belgium-Luxembourg									
Brazil	6363		6363	2416	2384	37	2	34	
Canada	7681		7681	230	3178	41	503	2292	
Chile							12	0	
Colombia	1006	-24	982		305	31	2	37	
Czech Republic									
Denmark									
Finland									
France									
Germany									
Greece									
Hungary									
Iraq	16	15	30	11	9	30			
Ireland									
Israel	900		900	211		0		10	
Italy									
Japan	30303	166	30469	17196	17060	56	288	300	
Mexico	4936		4936		3392	69		1222	
Morocco	292		292	182	35	12		22	
Netherlands									
New Zealand	669	131	800			0	90	0	
Norway									
Portugal									
Romania	347	70	416	120	117	28	0	7	
Slovakia									
Slovenia	237	37	274	90	90	33	13	169	
Spain									
Sweden									
Switzerland									
United Kingdom									
United States of America	95770		95770	42473	41046	43	7727	386	
Venezuela								123	

¹ Australia data covers July 1998 to June 1999 instead of 1999

Country	1999									
	Recovered paper used for other purpose than paper and paperboard 1000 mt	Recovered paper used for paper and paperboard 1000 mt	Recovered paper used for paper and paperboard 1000 mt	Total fibre used for paper and paperboard 1000 mt	Paper and paperboard production 1000 mt	Recovered paper in fibre use rate %	Total fibre / paper and paperboard production %	Recovered paper utilization rate %		
Australia ¹	0	1536	185	2540	2564	60	99	60		
Austria										
Belgium-Luxembourg										
Brazil	0	2416	362	6188	6953	39	89	36		
Canada		4953			20198		0	25		
Chile										
Colombia		340	61	169	734	201	23	46		
Czech Republic										
Denmark										
Finland										
France										
Germany										
Greece										
Hungary										
Iraq	3		2	13	8	0	154	0		
Ireland										
Israel	10	233			280		0	83		
Italy										
Japan	124	17084		30394	30631	56	99	56		
Mexico		3392	453	4249	3796	80	112	89		
Morocco		57	6	57	110	100	52	52		
Netherlands										
New Zealand		109	126	935	809	12	116	13		
Norway										
Portugal										
Romania	6	117	38	281	289	42	97	41		
Slovakia										
Slovenia		246	36	460	508	53	91	48		
Spain										
Sweden										
Switzerland										
United Kingdom										
United States of America	1814	33319			89712		0	37		
Venezuela										

¹ Australia data covers July 1998 to June 1999 instead of 1999

APPENDIX 4 - WASTE PAPER RECOVERY AND UTILIZATION OF RECOVERED PAPER IN PAPER AND PAPERBOARD INDUSTRY									
2000									
Country	Apparent consumption of paper and paperboard 1000 mt	Net trade in converted paper and paperboard products 1000 mt	Adjusted consumption of paper and paperboard 1000 mt	Waste paper collected for re-use 1000 mt	Recovered paper collected for paper and paperboard production 1000 mt	Recovered paper collection rate %	Exports of recovered paper 1000 mt	Imports of recovered paper 1000 mt	
Australia ¹	3841	253	4094	1821	1602	39	302	82	
Austria					1943		196	818	
Belgium-Luxembourg					606		1793	759	
Brazil	6802		6802	2612	2592	38	4	24	
Canada	7902		7902		3431	43	651	2282	
Chile				295				7	
Colombia	1015	-28	987		355	36	1	72	
Czech Republic					359		81	52	
Denmark					416		416	134	
Finland					685		112	83	
France					5777		886	1363	
Germany					10921		3905	1327	
Greece					380		53	7	
Hungary					317		38	81	
Iraq	18	17	34	13	11	32			
Ireland					47		49	11	
Israel	974		974	228		0		15	
Italy					4620		218	741	
Japan	31739	243	31982	18312	18332	57	372	278	
Mexico	5310		5310		3522	66		1201	
Morocco ²	290		290	180	35	12	22		
Netherlands					2414		1736	1968	
New Zealand	791	148	939			0	92	0	
Norway					329		248	63	
Portugal					393		145	30	
Romania	429	57	486	131	128	26	1	15	
Slovakia					278		28	158	
Slovenia	245	37	282	94	94	33	26	182	
Spain					3829		103	658	
Sweden					1817		197	551	
Switzerland					1121		282	291	
United Kingdom					4884		554	136	
United States of America	93364		93364	44839	43393	46	9323	552	
Venezuela								142	

¹ Australia data covers July 1999 to June 2000 instead of 2000

² Morocco: figures have been estimated

Country	2000									
	Recovered paper used for other purpose than paper and paperboard 1000 mt	Recovered paper used for paper and paperboard 1000 mt	Recovered paper used for paper and paperboard 1000 mt	Total fibre used for paper and paperboard 1000 mt	Paper and paperboard production 1000 mt	Recovered paper in fibre use rate %	Total fibre / paper and paperboard production %	Recovered paper utilization rate %		
Australia ¹	0	1602	163	2816	2836	57	99	56		
Austria		1943			4385		0	44		
Belgium-Luxembourg		606			1727		0	35		
Brazil	0	2612	392	6418	7188	41	89	36		
Canada		5027			20675		0	24		
Chile										
Colombia		426	71	895	771	48	116	55		
Czech Republic		359			808		0	44		
Denmark		416			400		0	104		
Finland		685			13509		0	5		
France		5777			10005		0	58		
Germany		10921			18184		0	60		
Greece		380			496		0	77		
Hungary		317			507		0	63		
Iraq	4		2	15		0	176	0		
Ireland		47			43		0	109		
Israel	10	256			300		0	85		
Italy		4620			9001		0	51		
Japan	129	18089		31648	31828	57	99	57		
Mexico		3522	493	4390	3897	80	113	90		
Morocco ²		57	6	60	100	95	60	57		
Netherlands		2414			3364		0	72		
New Zealand		190	31	906	875	21	104	22		
Norway		329			2301		0	14		
Portugal		393			1290		0	30		
Romania	15	128	49	321	339	40	95	38		
Slovakia		278			663		0	42		
Slovenia		250	37	478	558	52	86	45		
Spain		3829			4764		0	80		
Sweden		1817			10786		0	17		
Switzerland		1121			1706		0	66		
United Kingdom		4884			6604		0	74		
United States of America	1996	34070			87230		0	39		
Venezuela										

¹ Australia data covers July 1999 to June 2000 instead of 2000

² Morocco: figures have been estimated

**APPENDIX 5 - EXPORTS OF RECOVERED PAPER BY COUNTRY OF DESTINATION IN 2000
(1000 t)**

To	From	Australia	Austria	Belgium	Brazil	Canada	Colombia	Czech Rep.	Denmark	Finland	France	Germany	Greece	Hungary	Ireland	Italy
Australia																
Austria				6				10	4		2	569		5		24
Bangladesh		4														
Belgium									3		29	184				
Bosnia and Herzegovina																0
Bulgaria													21			2
Canada																
China		17		197		62					16	64				7
Croatia			46									18				38
Czech Republic			15									47				
Denmark										0		60				
Estonia										2						
Fed. Rep. of Yugoslavia			1									25		10		
Finland				1					1							
France				366						3		399				1
Germany		0	71	123				12	218	60	122			0		24
Greece				1								2		1		0
China Hong Kong		1		30						1		1				1
Hungary			6	1				2				73				3
India		8		99		1				1	17	73	2			1
Indonesia		133		261						2	20	302				11
Ireland			16													
Italy			1	2		3			2	0	100	203	8	0		
Japan		4														
Korea, Republic of		62		36		11					18	70				4
Latvia																
Lithuania										1		1				
Malaysia		45		12							11	2				1
Mexico																
Netherlands				543				1	2	1	48	849		1		0
Norway				5					4	4		8				
Paraguay					2											
Philippines		5		7		2						21				
Poland			2									4				
Portugal										0	4					
Romania												1		1		1
Russia										13						
Slovakia			6					54				76	2	8		
Slovenia			29								1	51		2		63
Spain				1						0	396	41				2
Sweden									177	15		171				
Switzerland			3	3					1	0	44	138				5
China Taiwan		4		24						1	18	320				5
Thailand		16		39						1	3	86				2
Turkey										0		16	13			14
Ukraine								2		1				10		1
United Kingdom				5					1	1	27	10				0
Uruguay					2											
United States of America				7		520					1	1	1			
Venezuela																
Others			0	24		52	1		3		8	19	6			8
TOTAL		299	196	1793	4	651	1	81	416	112	885	3905	53	38	49	218

Notes : Denmark, Greece and Ireland: figures have been estimated

APPENDIX 5 (cont.)
(1000 t)

To	From	Japan	Netherlands	New Zealand	Norway	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	Switzerland	UK	USA	TOTAL
Australia				20										20	40
Austria			4					3		0	9	52	11		699
Bangladesh				2										25	27
Belgium			105									0	2	1	324
Bosnia and Herzegovina									7						7
Bulgaria															23
Canada														2283	2283
China		57	71	0							1		6	1856	2337
Croatia									15						117
Czech Republic												0			62
Denmark			4		21					0	21				106
Estonia															2
Fed. Rep. of Yugoslavia															36
Finland											33				35
France			178		2			1		19		88	81	9	1148
Germany			445		4					5	55	55	48	7	1249
Greece														3	8
China Hong Kong		2	9										6	46	96
Hungary								3							88
India			269	2							6		22	406	899
Indonesia		10	478	28									63	533	1708
Ireland											4		5		25
Italy			3	0	1					16	20	75	24	148	606
Japan				1									1	216	218
Korea, Republic of		56		2									16	1158	1371
Latvia											4				4
Lithuania											1				3
Malaysia			1	32									4	24	87
Mexico														1056	1056
Netherlands					2					0	1	3	112	41	1604
Norway			1								33		2		57
Paraguay															2
Philippines		23	15	1									3	123	195
Poland											1				7
Portugal										19				21	44
Romania												5			8
Russia												0			13
Slovakia												0	3		149
Slovenia												2			148
Spain			3			145					2	0	9	60	659
Sweden			4		98								87	1	553
Switzerland			3								1		5	6	210
China Taiwan		108		1									19	312	808
Thailand		113	27	1									1	405	678
Turkey														15	58
Ukraine								21							35
United Kingdom			85							0		0		6	136
Uruguay														2	4
United States of America			29		1								9		569
Venezuela														143	143
Others			1	1	118		1		4	45	5	0	15	396	711
TOTAL		369	1735	91	248	145	1	28	26	103	197	282	554	9322	21504

Notes : Denmark, Greece and Ireland: figures have been estimated

**APPENDIX 6 - IMPORTS OF RECOVERED PAPER BY COUNTRY OF ORIGIN IN 2000
(1000 t)**

From	To	Australia	Austria	Belgium	Brazil	Canada	Colombia	Czech Rep.	Denmark	Finland	France	Germany	Greece	Hungary	Ireland	Italy
Australia																
Austria								11	1			33		6		16
Belgium			4							1	334	148				4
Canada				4			1				3	1	1			9
Chile							3									
Costa Rica							8									
Croatia																
Czech Republic			10									13		1		0
Denmark			4	3						1	1	200		0		4
Dominican Rep.							8									
Ecuador							1									
Estonia										3						
Fiji		3														
Finland											4	52				
France			4	123								91				110
Germany			669	195		0		37	84	42	543			67		264
Greece																12
Honduras							3									
Hungary			4											1		0
Iceland												1				
Ireland			28													
Italy			15	1							6	14		3		
Liechtenstein												1				
Mexico																0
Netherlands				418				0	8	1	170	595				44
New Zealand		38														
Norway									26	0		4				0
Panama							4									
Papua New Guinea		1														
Paraguay					13											
Poland			2					2				19		1		
Portugal											1					
Puerto Rico					0		8									
Russian Federation										1						
Slovakia			3					1						3		
Slovenia			1													2
South Africa		33														
Spain											26	5				26
Sweden			9						15	32	1	41				22
Switzerland			50					0			86	64	2	0		68
China Taiwan			0								1					
Ukraine										1						
United Kingdom			15	9	2	0					176	41	1			30
Uruguay					8											
United States of America		7		1	1	2282	27			2	8	4	1			120
Venezuela							8									
Others				5							3		1			9
TOTAL		82	818	24	759	2282	71	52	134	83	1363	1327	7	81	11	741

Notes : Denmark, Greece, Ireland and Morocco: figures have been estimated

APPENDIX 6 (cont.)
(1000 t)

From	To	Japan	Mexico	Morocco	Netherlands	Norway	Portugal	Romania	Slovakia	Slovenia	Spain	Sweden	Switzerland	UK	USA	TOTAL
Australia		4													1	5
Austria									6	25	0		7			105
Belgium					406		0				8		4	1		909
Canada		4			1		0					5		1	520	550
Chile																3
Costa Rica																8
Croatia										12						12
Czech Republic					1				54							79
Denmark						5					1	163	1			383
Dominican Rep.																8
Ecuador																1
Estonia																3
Fiji																3
Finland					1	4						21	0			83
France					85	3	0			2	420		42	21		902
Germany					1254	6	6	8	85	71	34	104	213	4		3687
Greece																12
Honduras																3
Hungary								7	8	3						23
Iceland												5				6
Ireland					9						14			27		78
Italy					5					63	2		7			116
Liechtenstein																1
Mexico		8													22	30
Netherlands				0		3				2	5	35	7	56		1343
New Zealand																38
Norway					7							147				185
Panama																4
Papua New Guinea																1
Paraguay																13
Poland									5			1				30
Portugal											98					99
Puerto Rico																8
Russian Federation														4		5
Slovakia																7
Slovenia																3
South Africa																33
Spain				22			11						0			90
Sweden					3	38					12		1	1		174
Switzerland										2						273
China Taiwan																1
Ukraine																1
United Kingdom				0	172	2					6	74	10		6	543
Uruguay																8
United States of America		260	1201		24		13				47	1		21		4019
Venezuela																8
Others						2					6				2	28
TOTAL		276	1201	22	1968	63	30	15	158	180	658	551	291	136	551	13935

Notes : Denmark, Greece, Ireland and Morocco: figures have been estimated