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**Economic Commission for Europe****Committee on Forests and the Forest Industry****Seventy-fourth session**

Geneva, 18-20 October 2016

Item 3(b) of the provisional agenda

**Forest products and markets****Trends and perspectives for pulp and paper****Note by the secretariat***Summary*

This document describes the current situation and markets trends and perspectives for pulp and paper. The purpose of the document is to inform the Committee about the importance of the sector as it relates to the forest sector at large.

The pulp and paper industry makes the largest contribution to GDP, accounting for almost half (45%) of the total gross value-added in the forestry sector (forestry and the wood industry) at the global level. Graphic-paper consumption fell in Europe and North America as a result of continued growth in electronic communication, including via the internet. The newsprint segment experienced the largest reductions in percentage terms, and coated-paper consumption declined as end-users reduced their use of paper or moved to lower-cost uncoated papers.

In addition to the decreasing consumption, competition from outside of the ECE region is increasing. These developments can have significant negative impacts on the pulp and paper sector in the member States.

The Committee is invited to:

- *take note of this item;*
- *discuss the status of the pulp and paper sector and future prospects in the ECE region;*
- *discuss the policy levers that could help maintain the vitality of the sector.*



## I. Introduction

1. The turnaround in the global pulp, paper and paperboard industry that began in 2014 fell apart in 2015 as Asian economies experienced declining export demand, which had a negative impact on packaging paper demand, particularly in China; in addition, trade sanctions against Asian paper exporters reduced growth opportunities. Although pulp shipments were up, values were significantly lower. Overcapacity in the pulp, paper and paperboard segments led to closures and consolidation in 2015 and the first half of 2016.

2. Cost-reduction strategies and strategic alliances and mergers continued to be implemented among pulp, paper and paperboard companies in Europe and North America in an effort to combat low prices. Such efforts were only partially successful in turning around financial performances, and pulp lines and paper machines were forced to close.

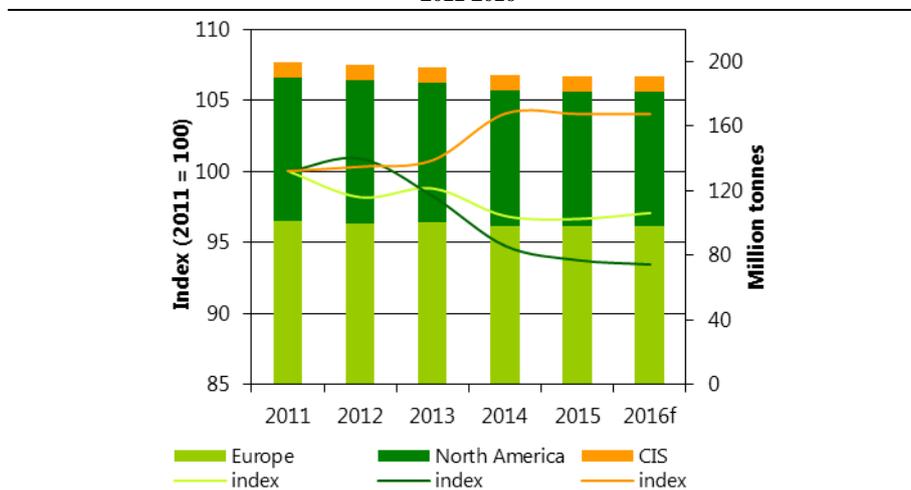
3. The decision by the US Federal Reserve in December 2015 to raise short-term interest rates caused a sharp rise in the US dollar against most global currencies, which had a negative impact on US exports. This prompted a reversal in the Federal Reserve's plan to further raise rates in 2016, causing an immediate devaluation of the US dollar. This, in turn, helped stabilize pulp, paper and paperboard prices in major global economies by the second quarter of 2016.

4. Despite years of paper-machine closures, capacity rationalization continued in the paper and paperboard industry in the ECE region in 2015 following structural changes in the demand landscape and important increases in supply from low-cost producing regions. Significant overcapacity existed in 2015 and early 2016 in the publishing-paper-grades segment of the printing-and-writing subsector as consumers continued to shift to electronic communications. This falling trend led to closures and consolidation, especially in the US. Given the inherent maturity stage of its life cycle, the graphic-paper industry may be ripe for consolidation. The appreciation of the US dollar helped improve financial results for non-US exporters; buyers in markets with weaker currencies continue to require lower import prices, however, because their paper prices remain depressed. More companies in the subsector converted from graphic grades to packaging papers and market pulp output in 2015, primarily in Europe and North America, and a select few in the US have turned their attention to specialty or fluff-pulp production.

5. The conversion of graphic-paper machines to paperboard slowed in 2015 and early 2016 as the space became increasingly competitive; consolidation is largely over, with the major gains achieved. The main focus of the industry now is on taking advantage of higher standards of living in emerging and underdeveloped markets by investing in personal-care products, such as facial and hygienic tissues, towel and disposable infant and adult diapers, and feminine napkins. Ongoing massive expansions in chemical market pulp mills to meet the fibre requirements for such products continued to fuel improved productivity through the closure of high-cost facilities.

6. Paper and paperboard production declined in Europe and North America in 2015 and was flat in the CIS (graph 1).

GRAPH 1  
Production of paper and paperboard, UNECE region,  
2011-2016



*Note:* f = 2015 Committee on Forests and the Forest Industry forecast.

*Source:* ECE/FAO, 2016.

7. Corporate strategies continue to focus on cost reductions, establishing new markets, and investing for the future, but all subsectors recognize the need for well-honed logistics for both sourcing raw materials and shipping finished goods to global customers. The complexity of domestic and international trade – such as improved low-cost logistics for selling large quantities to remote markets; high-volume consignments, especially in Europe; just-in-time inventories; documentation; and quality controls for recycled papers entering China – has compelled suppliers to invest in flexible transportation systems. Such investments have increased some costs but also helped ensure timely delivery, improve customer service and reduce inventory carrying costs at both ends. The global pulp, paper and paperboard industry continues to expand into emerging markets, and keeping abreast of the latest production technologies and consumption trends to maximize logistical efficiencies is the key to success. Newer and larger pulp mills continue to displace less-efficient ones, and excess capacity in commodity graphic grades will lead to further closures and industry consolidation. The quest to maintain a “lowest-possible-cost” position will continue to be the focus of commodity grades in each segment of the industry.

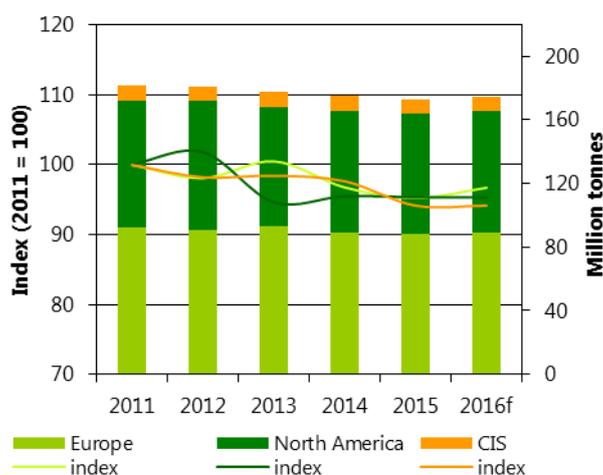
8. In much of Europe, the faltering economic recovery remained a challenge in early 2016. Quantitative easing and a weak euro against the US dollar continued to prop up the economy and favour exports while also causing import costs to rise. In China, GDP growth was 6.9% in 2015 and is expected to remain around that mark in 2016 as exports and domestic consumption remain relatively weak, even with a weaker yuan against the US dollar.

9. Graphic-paper consumption continued to decline in Europe, Japan and North America in 2015 and into 2016 due to the proliferation of internet-using electronic formats as well as smart-phone and tablet technologies, and the continued trend of end-users using cheaper alternatives to reduce costs. Businesses and governments are pushing for further cost reductions in data manipulation and communication, including traditional mail services, by embracing technology and investing in processes that provide customers with improved, timelier services. With electronic media growing in popularity, the consolidation and closure of printing plants in the newsprint and

commercial printing segments continued to make headlines in 2015. Graphic-paper capacity fell by 1.7 million tonnes in the ECE region in 2015 and is expected to decline by another 1.1 million tonnes in 2016. Four million tonnes of global graphic-paper capacity was indefinitely or permanently removed from production in 2015, and a further drop of 2.7 million tonnes worldwide is expected in 2016. Following years of capacity reductions, graphic-paper prices started to recover from dismal and unprofitable levels; however, there is an ever-pressing need to remove inefficient capacity in key markets to further improve the financial performance of the industry globally. North American newsprint capacity was 5.0 million tonnes in early 2016, down by 1.8 million tonnes from 2014. Graph 2 shows subregional trends in paper and paperboard consumption in 2011-2016.

GRAPH 2

**Apparent consumption of paper and paperboard,  
UNECE region, 2011-2016**



*Note:* f = 2015 Committee on Forests and the Forest Industry forecast.

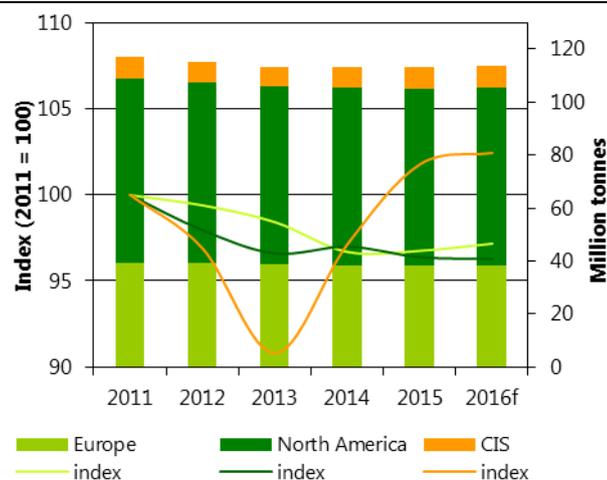
*Source:* ECE/FAO, 2016.

10. Outside the ECE region, pulp capacity continues to increase. In Brazil, a large bleached eucalyptus kraft line with a production capacity of 1.4 million tonnes started up in 2015, followed by 1.5 million tonnes of bleached eucalyptus and softwood kraft in March 2016. In Indonesia, a single mill with two hardwood kraft pulp lines is expected to produce 2.8 million tonnes per year, starting in late 2016. In mature markets such as Europe, Japan and North America, however, market pulp mill closures, integration into tissue and towel operations, and conversions removed 2.1 million tonnes of market pulp capacity in 2015, and another 602,000 tonnes of integrated pulp capacity was permanently or indefinitely removed.

11. The expansion of woodpulp production in 2011-2016 was concentrated in hardwood grades and in low-cost countries outside the ECE region. A series of investments in the ECE region in softwood kraft pulp production, however, saw capacity grow by almost 500,000 tonnes in 2015 and by another 1.3 million tonnes in 2016; this is in stark contrast to 2013-2014, when global softwood kraft capacity stagnated. Significant large-capacity expansion in the bleached hardwood kraft pulp segment – mainly bleached eucalyptus kraft in Brazil – has caused prices to decline, leading to the closure or conversion of relatively high-cost capacity in the ECE region in the five years to 2016. Specifically, US capacity was permanently closed, while other mills in North America and Europe swung production to softwood kraft grades to take advantage of higher margins. As a result, woodpulp production in the ECE region trended slightly lower in 2011-2016 (graph 3).

GRAPH 3

## Production of woodpulp, UNECE region, 2011-2016



*Note:* f = 2015 Committee on Forests and the Forest Industry forecast.

*Source:* ECE/FAO, 2016.

12. Aiding the large influx of hardwood kraft in 2015-2016 was the large price differential between it and softwood kraft in global markets, prompting end-users to switch to lower-priced fibre to reduce costs wherever the process and product performance requirements permitted. A slowdown in China's economy in 2015 caused a downturn in pulp prices and the price differential between hardwood and softwood kraft narrowed considerably in the second half of the year. This differential was growing again in mid-2016 as pulp markets recovered; the large incremental hardwood kraft capacity has tended to keep price increases to a minimum relative to those for softwood kraft.

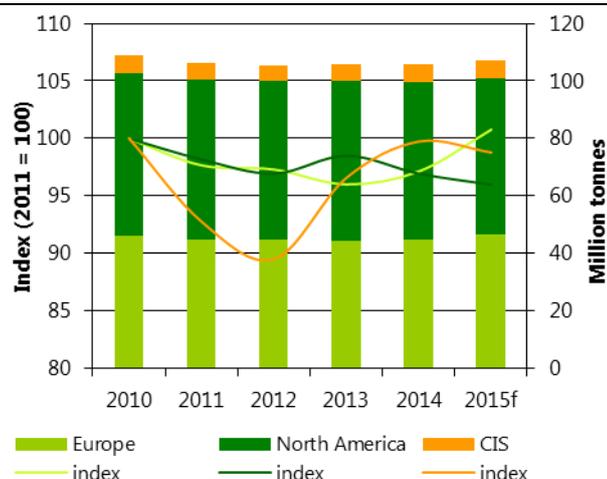
13. Capacity rationalization in the pulp and paper subsector continued in Europe, Japan, North America and South America in 2015. Some newsprint machines were closed or converted to packaging grades, and others were converted from paper-grade pulps to dissolving grades. Strong demand in China from the garment industry in particular continued to spur demand for viscose pulps (a subset of dissolving-pulp grades). China continues to impose import duties on dissolving pulps originating from Brazil, Canada and the US; the net result of these duties is that prices have increased in China, even though capacity has expanded in other countries not subject to the duties. Despite the higher prices, some global capacity expansions have been postponed indefinitely.

14. Dissolving-pulp demand continued to grow in 2015 and capacity grew in line with this rising demand, allowing prices to increase. In early 2016, however, a major capacity expansion in Brazil targeting the Chinese market added 7% to supply; prices edged lower but still managed to retain two-thirds of the 2015 increases. Fluff-pulp demand also saw solid, sustainable growth in 2015 as standards of living rose in Africa, Asia, the Middle East and South America, aided by higher disposable incomes. Graph 4 shows overall trends in demand for woodpulp in the ECE subregions in 2011-2016.

15. Global prices for softwood kraft pulps started 2015 in decline due to the large price differential between softwood and hardwood kraft pulps and as China's economic growth slowed. Hardwood kraft pulp prices began to erode in mid-to-late 2015 after large capacity additions that exceeded global demand.

GRAPH 4

**Apparent consumption of woodpulp, UNECE region,  
2011-2016**



*Note:* f = 2015 Committee on Forests and the Forest Industry forecast.

*Source:* ECE/FAO, 2016.

16. Prices for publishing papers were generally flat to weaker in 2015 as supply continued to chase demand downward in all ECE markets. Prices for coated and uncoated wood-free papers and newsprint began to improve in early 2016 after years of falling demand and overcapacity.

17. The global pulp and paper subsector is recovering slowly, aided largely by capacity rationalization. Many difficult reforms have been implemented, including cost-cutting, mergers and divestments, but more are required. Currency fluctuations in 2015 saw global asset valuations decline against the US dollar, causing global trade inequalities and resulting in lower prices. The subsector continues to invest in green technologies (e.g. wood-based biorefineries and biofuels) with the potential to reduce production costs and diversify revenue streams.

## II. Europe

### A. Paper and paperboard production

18. The production of paper and paperboard in Europe edged 0.2% lower in 2015 (table 1).

TABLE 1  
*Paper and paperboard balance, Europe, 2014-2016*  
(thousand tonnes)

	2014	2015	2016f	Change (%) 2014-2015
Production	98,095	97,887	98,310	-0.2
Imports	54,221	53,219	55,223	-1.8
Exports	62,873	63,109	64,135	0.4
Apparent consumption	89,443	87,998	89,398	-1.6

*Note:* f = 2015 Committee on Forests and the Forest Industry forecast.

*Source:* ECE/FAO, 2016.

19. Following years of paper-machine closures, the production of uncoated woodfree papers fell by 1.1% (table 2) due to closures. The production of uncoated mechanical papers was virtually flat. Excess capacity continued to close and mills were forced to take market-related downtime; production in the newsprint and coated-papers segments declined by 7.8% and 4.5%, respectively, in 2015.

TABLE 2  
*Production and apparent consumption of paper and paperboard,  
Europe, 2011, 2014 and 2015*  
(thousand tonnes)

	Production			Change (%) 2014- 2015	Apparent consumption			Change (%) 2014- 2015
	2011	2014	2015		2011	2014	2015	
Graphic papers	43,981	38,603	37,228	-3.6	37,665	32,760	31,325	-4.4
Newsprint	9,184	7,485	6,904	-7.8	9,516	7,385	6,855	-7.2
Uncoated mechanical	7,658	6,103	6,106	0.0	6,139	4,769	4,726	-0.9
Uncoated wood-free	9,619	9,648	9,538	-1.1	9,250	8,762	8,568	-2.2
Coated papers	17,520	15,367	14,681	-4.5	12,761	11,844	11,177	-5.6
Sanitary and household papers	7,385	7,632	7,836	2.7	7,562	7,606	7,859	3.3
Packaging materials	45,507	48,136	49,121	2.0	42,941	45,166	44,973	-0.4
Case materials	26,753	28,091	28,698	2.2	27,118	28,048	28,394	1.2
Cartonboard	9,675	10,443	10,710	2.6	7,669	8,384	8,114	-3.2
Wrapping papers	5,062	5,503	5,556	1.0	4,405	4,887	4,586	-6.1
Other papers, mainly packaging	4,016	4,099	4,157	1.4	3,748	3,847	3,878	0.8
Other paper and board	4,419	3,724	3,701	-0.6	4,309	3,911	3,841	-1.8
Total paper and paperboard	101,292	98,095	97,887	-0.2	92,477	89,443	87,998	-1.6

Source: ECE/FAO, 2016.

20. Weak activity in print advertising due to the ongoing expansion of electronic communication continued to have a negative effect on the publishing subsector. The decline in graphic-paper production is expected to continue and to lead to more mill closures.

21. The production of sanitary and household papers rose by 2.7% in Europe in 2015, to 7.8 million tonnes, and the production of packaging grades increased by 2.0%, to 49.1 million tonnes, due to debottlenecking projects and conversions from newsprint to paperboard. The production of all other grades of paper and paperboard – mainly for industrial and special purposes – fell by 1.4% in Europe due to restructuring, including paper-machine closures.

## B. Paper and paperboard consumption and prices

22. Apparent consumption of paper and paperboard fell by 1.6% in Europe in 2015 (table 2). Graphic-paper consumption was down by 4.4%, led by declines of 7.2% in newsprint, 5.6% in coated papers and 2.2% in uncoated wood-free. Apparent consumption of uncoated mechanical papers declined by only 0.9% in 2015 as advertisers swung away from higher-cost coated papers.

23. The consumption of sanitary and household papers increased by 3.3% in Europe in 2015 and the consumption of packaging materials was down by 0.4% led by growth

of 1.2% in case materials and other papers, mainly packaging. The consumption of wrapping papers fell by 6.1%, and the consumption of cartonboard declined by 3.2%.

24. Prices for most paper and paperboard bottomed out in Europe in 2015, following a downward trend that began in the second half of 2011. After relative stability in 2011, prices for graphic paper declined steadily in 2012-2014. Graphic-paper prices were generally flat in 2015 after years of capacity closures.

## C. Market and integrated pulp production

25. Woodpulp production remained stable in Europe in 2015, at 38.4 million tonnes (table 3). Exports declined by 3.9%. Imports also decreased slightly by 0.3%. This despite the fact that Europe is used as a location for containerizing pulp arriving from South America (where there is an ongoing shortage of containers) before shipment to Asia. Apparent consumption increased by 1.2% from 2014.

26. The production of mechanical pulp fell by 1.4% in 2015 due to the closure of graphic-paper machines. Despite closures, chemical market pulp production increased by 0.1%.

TABLE 3  
**Woodpulp balance, Europe, 2014-2016**  
(thousand tonnes)

	2014	2015	2016 <sup>f</sup>	Change (%) 2014-2015
Production	38,168	38,194	38,357	0.1
Imports	19,871	19,821	21,445	-0.3
Exports	13,848	13,306	13,416	-3.9
Apparent consumption	44,191	44,709	46,385	1.2

*Note:* <sup>f</sup> = 2015 Committee on Forests and the Forest Industry forecast.

*Source:* ECE/FAO, 2016.

27. Softwood-based pulp prices declined in Europe through 2015 as a result of a weaker euro against the US dollar, and as supply exceeded demand. Demand was strong in tissue and certain packaging and specialty grades, but it weakened for printing and writing and newsprint due to the increased use of electronic communication means and slower economic activity. Prices began to recover in early 2016 as buyers decided it was time to rebuild depleted inventories and as suppliers redirected tonnage to Asia (primarily China). Despite major expansions in the hardwood kraft segment outside Europe, prices for hardwood kraft pulp, which had fallen in 2014, began to rise in early 2015; however, by the end of 2015, prices for hardwood kraft pulps declined due to excess production and a slowdown in market demand especially from China. As a result, a large price differential – in excess of \$200 per tonne at list level – emerged between key softwood and hardwood kraft pulps at the end of 2015 and going into 2016. Seeing a clear economic advantage, consumers swung demand from softwood to hardwood pulp (wherever technically possible) to reduce costs.

## D. Use of recovered paper

28. The use of paper for recycling in Confederation of European Paper Industries (CEPI)<sup>1</sup> countries rose by 0.2% in 2015, to 47.7 million tonnes, and collection increased by 1.4%, to 55.9 million tonnes. Exports of paper for recycling to non-CEPI countries increased by 7.1%, to 10.2 million tonnes; 93% of such exports went to Asian markets.

29. Paper for recycling comprised 46% of the fibre used for papermaking in CEPI countries in 2015. Woodpulp accounted for another 39.3%, and the remainder (14.7%) comprised non-woodpulp and non-fibrous materials.

## III. Commonwealth of Independent States

### A. Paper and paperboard production and apparent consumption

30. The production of paper, paperboard and chemical woodpulp rose by 1.9% in the CIS in 2015, to 16.5 million tonnes (table 4).

TABLE 4  
*Production of chemical woodpulp, paper and paperboard, CIS, 2014-2015*  
(thousand tonnes)

	2014	2015	Change (%) 2014-2015
Chemical woodpulp	6,518	6,822	4.7
Paper and paperboard	9,721	9,719	0.0
Total	16,240	16,542	1.9

Source: ECE/FAO, 2016.

31. Paper and paperboard production was flat in the CIS in 2015, with no meaningful capacity expansion. The significant devaluation of the rouble against both the euro and the US dollar in recent years facilitated a 1.9% increase in exports of paper and paperboard in the subregion in 2015, but more expensive imports fell by 10.1%. Apparent consumption declined, therefore, by 3.6% (table 5).

TABLE 5  
*Paper and paperboard balance, CIS, 2014-2016*  
(thousand tonnes)

	2014	2015	2016 <sup>f</sup>	Change (%) 2014-2015
Production	9,721	9,719	9,719	0.0
Imports	2,746	2,470	2,470	-10.1
Exports	3,156	3,215	3,215	1.9
Apparent consumption	9,311	8,975	8,975	-3.6

Note: f = 2015 Committee on Forests and the Forest Industry forecast.

Source: ECE/FAO, 2016.

<sup>1</sup> Through its 18 member countries (17 EU members plus Norway), CEPI represents 520 pulp, paper and paperboard companies in Europe.

## **B. Chemical woodpulp production and apparent consumption**

32. Chemical woodpulp production in the CIS was 4.7% higher in 2015 than in 2014. The weak rouble reduced imports by 4% and created demand for domestic mechanical pulp, the production of which increased by 5.3% (ECE/FAO, 2016). Chemical woodpulp exports increased by 8%, resulting in a 2.7% increase in apparent consumption (table 6).

TABLE 6  
**Chemical woodpulp balance, CIS, 2014-2015**  
*(thousand tonnes)*

	2014	2015	Change (%) 2014-2015
Production	6,518	6,822	4.7
Imports	251	241	-4.0
Exports	2,063	2,229	8.0
Apparent consumption	4,706	4,834	2.7

Source: ECE/FAO, 2016.

## C. Russian Federation

### (a) Production and capacity

33. The production of pulp, paper and paperboard increased by 3.6% in the Russian Federation in 2015, to 15.9 million tonnes, in the wake of targeted investment by the private sector, including foreign capital. Contributing to the increase were investments by the Ilim Group in 2013-2015 to expand capacity in northern bleached softwood kraft and white papers, the largest investment in the Russian forest industry in that period; by Arkhangelsk Pulp & Paper in a new semi-chemical pulp line; and by Mondi in additional bleached softwood kraft pulp production at Syktyvkar. The reconstruction and restructuring of the Russian pulp and paper industry continues, aided by export opportunities and the weak rouble, which is stimulating investment in projects that can supply domestic consumption.

### (b) Imports

34. The Russian Federation's annual trade deficit in pulp, paper and paperboard fluctuated significantly in the decade 2006-2015. It was \$807 million in 2015, down from \$2.242 billion in 2014; the reduction was aided by lower imports due to the weak rouble.

### (c) Exports

35. Russian exports of pulp, paper and paperboard declined by 14.5% in 2015, to \$2.6 billion, despite investments in incremental capacity and a favourable exchange rate as the price of softwood kraft pulp declined in global markets. Major export destinations in 2015 were China (market pulp and kraft linerboard), India (newsprint), Ireland (market pulp and kraft linerboard) and Turkey (newsprint). Pulp exports exceeded 2 million tonnes in 2015, 66% going to China.

## IV. North America

36. There were several closures of integrated and market pulp operations in North America in 2015, continuing a general trend from the mid-1990s. There were fewer closures in the printing and writing paper, newsprint and paperboard segments than in previous years, but the industry continued to remove high-cost capacity. Because virtually every paper machine resided in an integrated pulp and paper operation, pulp mills were also shuttered. The printing and writing paper and newsprint segments continued to suffer from overcapacity and low prices due to falling paper demand caused by the increasing use of electronic communication means. Newsprint consumption continued to decline due to decreasing newspaper circulations, reduced advertising, lower basis weights, and the impact of the internet. As a result, 425,000 tonnes of newsprint capacity (7.6% of total capacity), as well as 154,000 tonnes of

printing and writing capacity (less than 1% of total capacity), were idled indefinitely or closed permanently in North America in 2015.

37. Overcapacity continued in the newsprint subsector in 2015 due to a 10.8% decline in North American demand (to 3.3 million tonnes). Consumption by daily newspapers fell by 12.7% in 2015 (after a decline of 12.4% in 2014), and consumption in non-newspaper applications, such as flyers and inserts, fell by 2.4% (after an increase of 2.5% in 2014).

38. Tissue production in North America edged 0.8% higher in 2015 following a major wave of investment in 2012-2015, virtually entirely in the US, which increased capacity by 8.7% to 9.28 million tonnes. Tissue capacity is forecast to increase further in North America in the short term, driven by increased demand for private brands, product-line extensions, and premium hygienic tissue. After a review that began in June 2015, the US International Trade Commission renewed a five-year tariff of 112.64% on the import of Chinese tissue products, defined as cut-to-length sheets of tissue paper with a basis weight not exceeding 29 g/m<sup>2</sup> and a width of no less than 1.27 cm. The US Department of Commerce put the tariff in place in 2005 after its investigation determined that 12 producers and exporters sold certain Chinese-made tissue products to the US at less than their fair value, with a margin of 112.64%.

39. Canadian market pulp exporters benefited from a weaker currency against the US dollar in 2015, which initially increased margins for producers; much of the currency advantage disappeared, however, due to weaker prices across chemical and mechanical grades in global markets. The stronger US dollar also attracted imports of printing and writing paper, causing several US mills to lose market share rapidly in a segment where overall demand was already declining. Affected parties petitioned the US International Trade Commission and the US Department of Commerce, which in turn launched an investigation into imports of cut-size office and copy paper. A series of anti-dumping duties was imposed on imports of such papers from certain producers in several countries, including Brazil, China and Indonesia. In another case (now under review by the US International Trade Commission), anti-dumping duties were imposed on imports of Canadian super-calendared paper in 2015.

40. As for much of the last 15 years, domestic North American demand for graphic paper declined in 2015 as a result of lower advertising budgets for print advertising and growth in electronic media for data transmission and information dissemination. Further paper-machine closures are anticipated and restarts seem unlikely. This pattern is being replicated in mature markets worldwide.

## **A. Production and apparent consumption**

41. North America's apparent consumption of paper and paperboard, which had been trending lower for years, fell only slightly (by 0.2%) in 2015, to 75.9 million tonnes (table 7). This steadying followed years of capacity rationalization and industry consolidation and was aided by lower imports, stronger tissue consumption, and the rebuilding of depleted inventories by graphic-paper consumers ahead of price increases not seen in many grades since 2010. There was sustained demand and profit growth in the paperboard subsector following industry consolidation and capacity rationalization and as a result of growth in online shopping, which boosted the consumption of packaging and shipping cases.

TABLE 7  
*Paper and paperboard balance, North America,  
 2014-2016*

(thousand tonnes)

	2014	2015	2016 <sup>f</sup>	Change (%) 2014-2015
Production	83,868	82,984	82,709	-1.1
Imports	12,664	12,155	12,139	-4.0
Exports	20,479	19,216	18,926	-6.2
Apparent consumption	76,053	75,923	75,921	-0.2

*Note:* f = 2015 Committee on Forests and the Forest Industry forecast.

*Source:* ECE/FAO, 2016.

42. The production of paper and paperboard fell by 1.1% in North America in 2015 as graphic-paper capacity was permanently shut; expansions in the tissue and specialty paper and packaging segments paled in comparison with the 580,000 tonnes of graphic-paper capacity idled in 2015.

43. North American paper and paperboard imports declined by 4% in 2015 due to the imposition of anti-dumping duties on cut-size office and copy paper imports (as mentioned above). Exports fell by 6.2% due to permanently idled capacity and a stronger US dollar.

44. The production of graphic paper in North America fell by 5.7% in 2015 (table 8) as capacity was permanently removed due to falling demand and competition from imports, continuing a decline that has cut almost 20% from production since 2010. The production of packaging materials, on the other hand, grew by 0.7% as US manufacturing improved and online shopping propelled demand for case materials. There were significant capacity closures in the production and converting segments in 2011-2014 as a result of industry mergers and acquisitions; prices were lower in virtually all paperboard subcategories in 2015, however, due to increased production and competition from imports. A series of newsprint conversions and debottlenecking projects added 1.1 million tonnes to paperboard production in 2014-2015, following a similar increase in 2013.

45. The production of newsprint fell by 12.8% in North America in 2015, driven by capacity rationalization, including conversions to packaging grades for which margins tended to be higher. Uncoated mechanical paper production rose by 3.9% as advertisers and other end-users swung away from more-expensive coated papers, the production of which fell by 10.4%. The production of uncoated wood-free fell by 1% in 2015 and the production of sanitary and household papers rose by 1.3%.

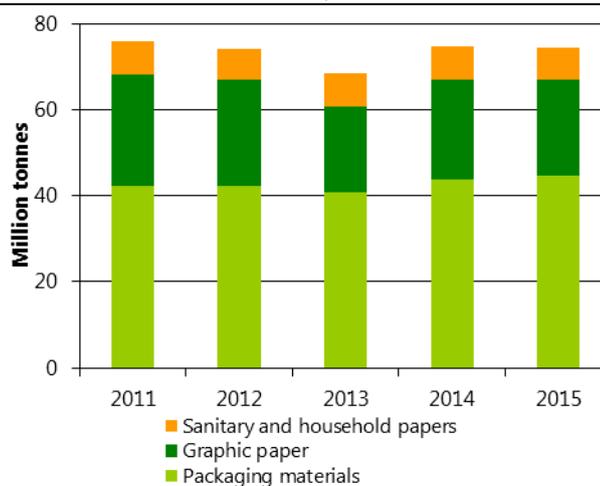
TABLE 8  
**Production and apparent consumption of paper and paperboard,**  
**North America, 2011, 2014 and 2015**  
*(thousand tonnes)*

	Production			Change (%) 2014-2015	Apparent consumption			Change (%) 2014-2015
	2011	2014	2015		2011	2014	2015	
Graphic papers	28,080	24,343	22,961	-5.7	26,076	23,125	22,236	-3.8
Newsprint	7,346	5,939	5,179	-12.8	4,675	3,822	3,440	-10.0
Uncoated mechanical	4,438	3,433	3,566	3.9	4,506	3,470	3,586	3.3
Uncoated wood-free	9,119	8,538	8,450	-1.0	9,047	8,819	8,716	-1.2
Coated papers	7,177	6,433	5,766	-10.4	7,848	7,013	6,494	-7.4
Sanitary and household papers	7,336	7,427	7,521	1.3	7,442	7,540	7,646	1.4
Packaging materials	49,023	50,352	50,728	0.7	42,207	43,885	44,565	1.6
Case materials	32,888	33,949	34,424	1.4	28,294	29,796	30,404	2.0
Cartonboard	7,285	12,158	12,030	-1.1	5,757	10,539	10,411	-1.2
Wrapping papers	3,140	1,854	1,969	6.2	2,443	1,161	1,450	24.8
Other papers, mainly packaging	5,710	2,391	2,305	-3.6	5,713	2,388	2,300	-3.7
Other paper and board	4,049	1,746	1,774	1.6	3,996	1,504	1,476	-1.8
<b>Total paper and paperboard</b>	<b>88,488</b>	<b>83,868</b>	<b>82,984</b>	<b>-1.1</b>	<b>79,721</b>	<b>76,053</b>	<b>75,923</b>	<b>-0.2</b>

Source: ECE/FAO, 2016.

47. North America's apparent consumption of graphic papers dropped by 3.8% in 2015, to 22.2 million tonnes (table 8 and graph 5). Apparent consumption of newsprint declined by 10%, to 3.4 million tonnes (it has fallen by 7.7 million tonnes since January 2004). Apparent consumption increased by 3.3% for uncoated mechanical papers, fell by 7.4% for coated papers and by 1.2% for uncoated wood-free, and grew by 1.4% for sanitary and household papers. The apparent consumption of packaging materials in North America increased by 1.6% in 2015, to 44.6 million tonnes.

GRAPH 5  
**Apparent consumption of paper and paperboard,**  
**North America, 2011-2015**



Source: ECE/FAO, 2016.

48. The production of chemical woodpulp fell by 1.3% in North America in 2015 (graph 6) as printing and writing paper production capacity was cut in response to falling demand; reductions in production included permanent closures, longer planned and unplanned maintenance periods, and temporary and indefinite downtime. Apparent consumption fell by 2.5% as high-cost paper machines were closed permanently and pulp capacity was converted to value-added grades of fluff, dissolving and nano-crystalline cellulose pulps, which generate lower outputs due to their highly refined natures.

GRAPH 6

**Production of chemical woodpulp, North America, 2011-2015**

Source: ECE/FAO, 2016.

49. Significant merger and acquisition activity in the North American paperboard subsector in 2014-2015 caused a drop in integrated capacity, which led to higher efficiencies through cost-cutting measures and a tighter supply-demand balance. As a result, prices tended to stabilize or bottom out, allowing for improved financial results. Prices in the subsector continued to be challenged in 2015, however, by competition from imports and increased capacity due to conversions of newsprint-paper machines to paperboard production.

50. The chemical market pulp subsector saw modest growth in export markets in 2015, led by Asia and especially China, where major investments in incremental capacity were again noticeable. Demand was broad-based in 2015, stemming from investment in tissue and specialty-paper machines, as well as building-material applications, such as fibre-cement board.

## V. Extra-regional influence on the ECE region

### A. Brazil

51. Pulp capacity expansions in South America added 1.5 million tonnes of bleached eucalyptus market pulp capacity in 2015, an increase in global bleached hardwood kraft capacity of 4.1%. Planned further expansions will add 2.8 million tonnes of bleached chemical market pulp capacity in Brazil by the end of 2018, an increase of 20.2% compared with the country's existing capacity.

52. Brazilian pulp production was 17.2 million tonnes, an increase of 4.6% resulting from the start-up of yet another new pulp line. Paper and paperboard production declined by 0.5% in 2015, however, due to ongoing lacklustre economic conditions.

53. Brazil exported more than 11.5 million tonnes of pulp in 2015, which was 67% of the country's total production (table 9). The export volume was up by 8.6% compared with 2014, when 10.6 million tonnes – 64.5% of that year's production – were exported.

TABLE 9  
*Woodpulp balance, Brazil, 2014-2015*  
(thousand tonnes)

	2014	2015	Change (%) 2014-2015
Production	16,461	17,214	4.6
Exports	10,614	11,528	8.6
Imports	416	407	-2.2
Apparent consumption	6,263	6,093	-2.7

Source: Iba, 2016.

54. Unlike pulp, most paper and paperboard produced in Brazil is consumed internally. Exports accounted for 19.9% of production in 2015, up from 17.8% from 2014 (table 10).

TABLE 10  
*Paper and paperboard balance, Brazil, 2014-2015*(thousand tonnes)

	2014	2015	Change (%) 2014-2015
Production	10,397	10,343	-0.5
Domestic sales	5,714	5,453	-4.6
Exports	1,846	2,058	11.5
Imports	1,262	866	-31.4
Apparent consumption	9,813	9,151	-6.7

Source: Iba, 2016.

## B. Chile

55. Chile's exports of pulp, paper and paperboard fell by 7.1% in 2015 (table 11), due in part to slower economic growth in China, which, along with incremental supply growth in hardwood kraft pulp in excess of demand, contributed to declines in woodpulp prices. Chile's aggregate pulp exports fell by 7.6% and paperboard exports fell by 4% due to lower demand in Latin America.

TABLE 11  
*Pulp, paper and paperboard exports, Chile, 2014-2015*  
(thousand tonnes)

	2014	2015	Change (%) 2014-2015
Bleached radiata kraft	2,138	1,869	-12.6
Bleached eucalyptus kraft	2,091	2,028	-3.0
Unbleached radiata kraft	441	420	-4.8
Newsprint paper	54	54	0.0
Paperboard	499	479	-4.0
Total	5,223	4,850	-7.1

Source: Infor, 2016.

## C. China

56. China's economic slowdown continues, with fewer exports but also lower commodity prices. The Chinese government, which initiated social and economic reforms in 2014, attempted to further stimulate the economy in 2015 and 2016 with investments in infrastructure, which, in turn, stimulated private investment. The government also abandoned the one-child policy, which should help in avoiding some of the negative economic effects of an ageing population.

57. China's pulp production rose by 1% in 2015, with less market downtime than in 2014 (table 12). A surge in bleached hardwood pulp capacity in 2015 caused prices to drop in early-to-mid 2016.

TABLE 12  
*Production and apparent consumption of pulp, paper and paperboard, China, 2015*  
(thousand tonnes)

	Production		Apparent consumption	
	2015	Change (%) 2014-2015	2015	Change (%) 2014-2015
Pulp	79,084	1.0	97,310	3.7
Paper and paperboard	107,100	2.3	103,520	2.8

Source: China Paper Association, 2016.

Note: The pulp production figure includes 63,376 thousand tonnes of pulp made from recovered paper.

58. Apparent consumption of woodpulp rose by 3.7% in China in 2015, driven mainly by growth in tissue and paperboard production. China's overall paper and paperboard production increased by 2.3% following the start-up of several new linerboard, corrugating medium, and specialty-paper machines. The country's apparent consumption of paper and paperboard rebounded in 2015 by 2.8%, the result of stronger demand in the graphic-paper and cardboard segments. Significant investment continues to be made in the industry, with tissue machines leading the field. Several tissue-machine expansions that were scaled back from previously announced, overambitious plans were implemented in 2015 and will continue until 2018.

59. China's kraft pulp imports reached a record 15.8 million tonnes in 2015, a 10.5% increase over 2014, while mechanical pulp imports were 1.73 million tonnes, a 14.9% increase (table 13). Total pulp imports grew by 10.4%, to 19.8 million tonnes.

TABLE 13  
*Pulp imports, China, 2013-2015(thousand tonnes)*

	2013	2014	2015	Change (%) 2014-2015
Kraft	13,571	14,277	15,783	10.5
Mechanical	1,388	1,508	1,732	14.9
Dissolving	1,804	2,086	2,247	7.7
Other	87	92	76	-17.4
Total	16,850	17,963	19,838	10.4

Source: China Customs Bureau, 2016.

60. Despite China's slower economic growth, it continues to source large volumes of recovered paper to feed its growing papermaking industry; recovered paper represents by far the largest source of fibre in China's paper and paperboard industry. China's recovered-paper imports fell by 3.7% in 2015, however, to 26.5 million tonnes, as customs officials continued their enforcement of quality controls (table 14).

TABLE 14  
**Recovered paper imports, China, 2014-2015**  
 (million tonnes)

	2014	Share (%) of total	2015	Share (%) of total
Imports by China	27.5	100	26.5	100
Of which from the US	13.6	47.1	14.7	55.3
US exports	19.1	100	19.5	100
Of which to China	13.6	68	14.7	75

*Sources:* China Customs Bureau, 2016; US Census Bureau, 2016.

61. An estimated 55% of Chinese recovered-paper imports were sourced from the US in 2015 (US Census Bureau, 2016), up from 47% in 2014. The increase was attributed to an increase in Chinese paper and paperboard production of 2.3%.

#### **D. Dissolving pulp demand in emerging markets**

62. Global demand for dissolving pulp continues to grow, aided by the development of new end uses and rapid economic growth in emerging markets. The increased consumption of dissolving pulp is being driven by consumers in emerging markets looking to improve their standards of living. Applications include personal-care products, packaging, detergents, foods, textiles and car parts. There has been very strong growth in rayon, a major subcategory of dissolving pulp, as clothing manufacturers abandon expensive natural fibres such as cotton.

63. Dissolving-pulp capacity expansions in Brazil, Canada, China, Sweden and the US have created a surplus, putting pressure on prices in global markets. Strong demand in China and a swing from dissolving pulp production to bleached hardwood kraft or fluff pulp allowed a modest pricing recovery in 2015. Dissolving pulp capacity in December 2015 was estimated at 7.7 million tonnes, while demand was 6.7 million tonnes.

64. China's imports of dissolving pulp increased by 7.7% in 2015, to 2.2 million tonnes (table 14).

65. China imposed import duties on dissolving pulp imports from Brazil, Canada and the US in 2014; these duties are in place for a minimum of five years and could be extended following a review of market conditions and domestic producers. Despite the duties, global capacity expanded further and prices fell to around \$800 per tonne, down from \$860 when the duties were imposed. By mid-2015, prices had recovered to \$860-\$870, but growth in excess capacity in early 2016 caused another price drop, to \$840.

66. As the dissolving pulp market expands and a select few pulp producers delve into nano-cellulosic fibres, the quest to develop niche markets will be the modus operandi for improving financial results. Nano-cellulose pulp is a highly refined material that can be used to strengthen products such as paper, plastics and other composites and also as an improved barrier film for food packaging. This industry is in its infancy, and several companies worldwide are involved in research into, and the development of, new applications.

## V. Points for Consideration

67. The information provided above shows that prospects for the production, trade and consumption of the different products of the pulp and paper sector vary a great deal.

68. Pulp and paper products from the ECE region provide a good example of products in a green economy, allowing for cascaded use, (use, re-use and recycling). In addition, innovative uses of refined wood fibres may open up entirely new pathways for the forest sector and thus further increase the role of the forest sector in the green economy.

69. The Committee is invited to:

- a. take note of this item;*
  - b. discuss the status of the pulp and paper sector and future prospects in the ECE region;*
  - c. discuss the policy levers that could help maintain the vitality of the sector.*
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