The Future of Raw Materials for Molded Pulp Industry

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Nowadays, in the middle of 2019's, there are concerns for the continuity of current raw materials which are used in the molded pulp industry. Changes in the customer addictions, a decrease in the supply of printed newspapers, an increase in the online sales results in confusion about what will be driving challenges in the international waste paper market. Will these changes create a shortage in the current raw materials? Will current waste paper types availability change in the future? Does the industry's which are consuming waste paper should find alternative fiber resources? This research aims to understand the current waste paper market and to see the predictions for the future.

1. Introduction

To understand today and the future of the waste paper market, firstly, waste paper types should be understood. European Standardization Organisations has a List for European standard types paper, which is called EN643 categorizes waste papers into 67 subgroups which are highly complicated and confusing. Generally, in the molded pulp industry, commonly used waste paper types are listed in Table-1.

Table-1: Common waste paper types

		
Old Corrugated Cardboard (OCC)	Double Liner Kraft (DLK)	Old Newspaper (ONP)
		
Black&White Paper (BW)	Mixed Waste Paper (MW)	Unsold Magazines

2. Global Paper Market

Molded pulp industry can be defined as an aquarium in the global paper and cardboard industry pool. Global paper production is around 410 million metric tonnes per year (Figure-1).

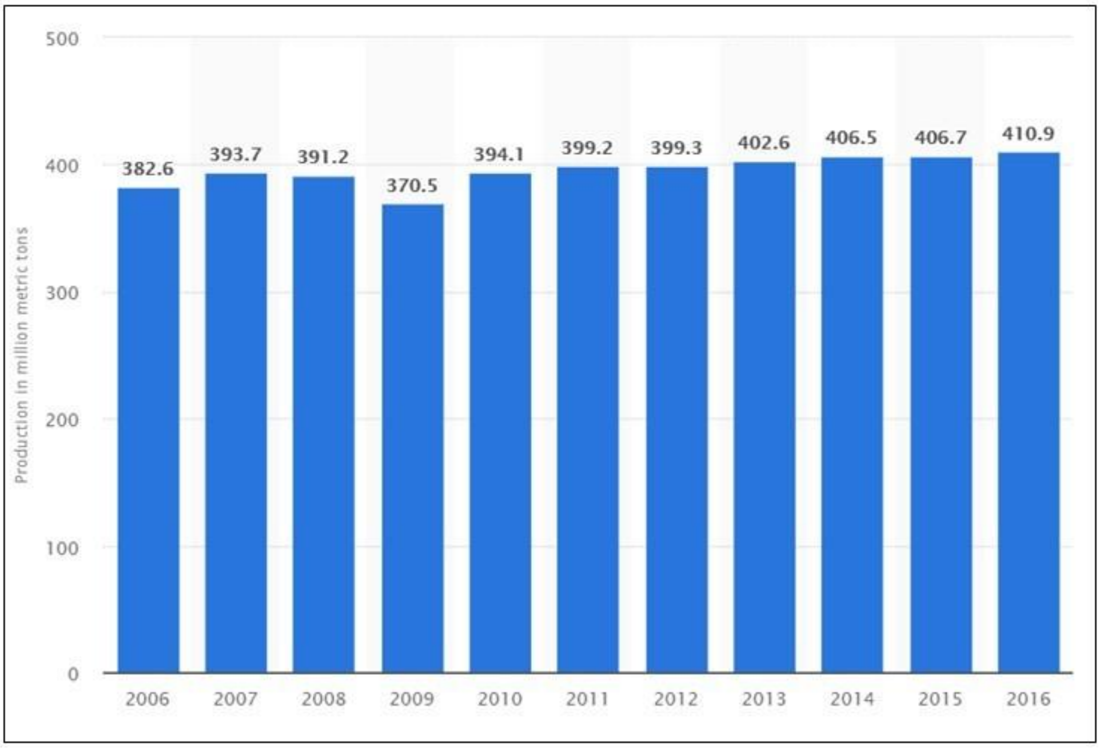

Figure-1: Global paper and cardboard production in million metric tonnes [2]

More than 50% of the entire world paper production is used for packaging. Second major consumption is printing and writing, which is almost 26% of the global output. Sanitary and newsprint industries have 8% and 7% shares consecutively (Figure-2). [3]

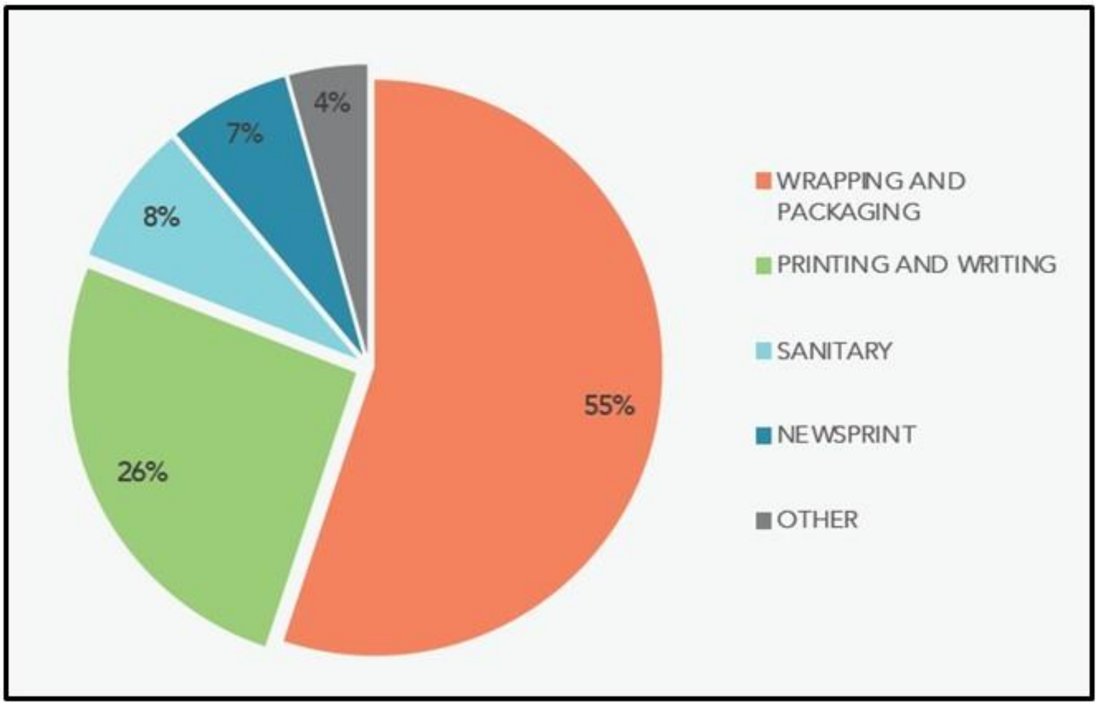

Figure-2: Global consumption ratios by category [3]

Global average paper consumption per capita is around 55kg per person. But it has inequalities in the distribution of consumption. Since North America has 215kg average, secondly, Europe 125kg, China is above the average with 77kg and Africa significantly differs with 7kg per person in consumption. [4]

Sectoral changes from 1992 to 2014 in the global paper and paperboard industry is given in Figure-3.

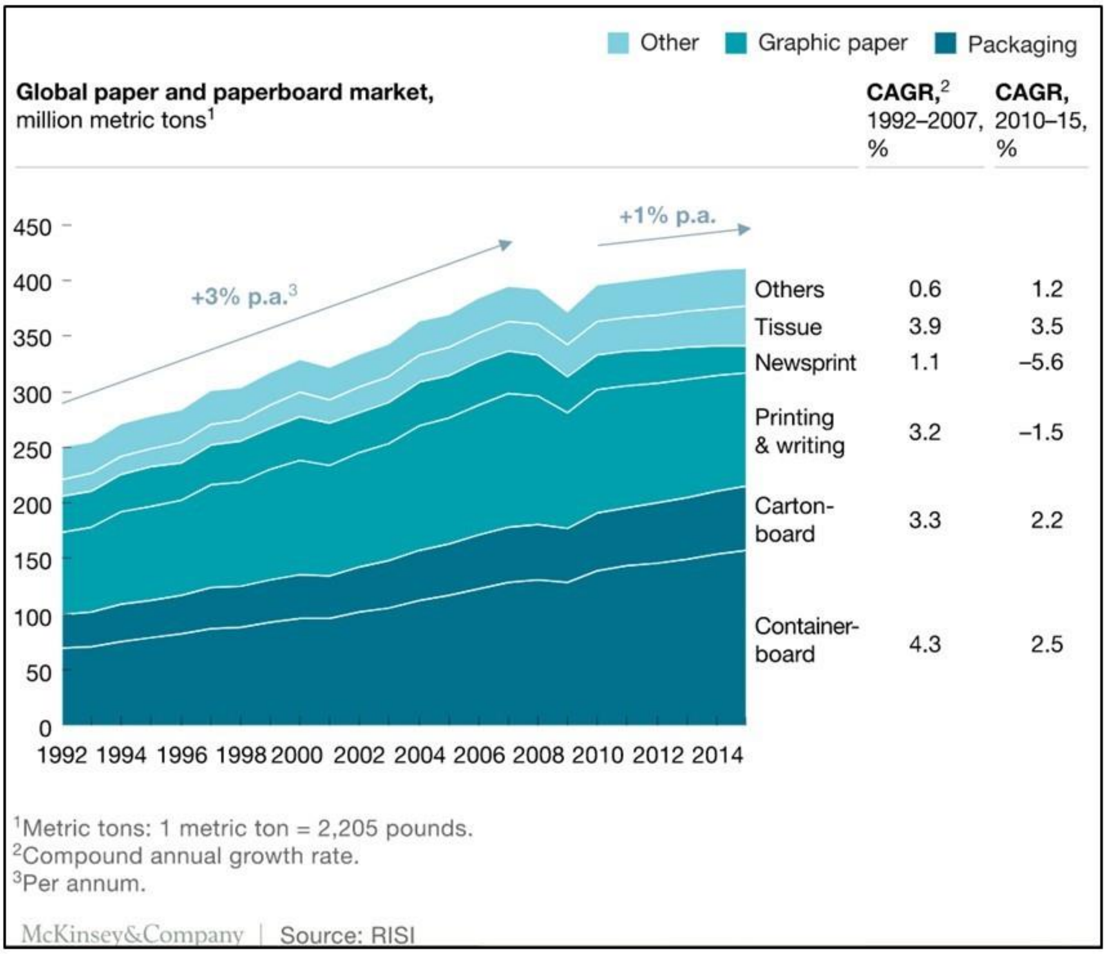

Figure-3: Global paper and paperboard market [5]

Since there is asymmetry in the paper consumption per person in countries, after the 2000s, Asia crossed North America in the paper production. China is the major driving country, resulting in this global change. Europe represents relatively straight amounts in total production for the last 15 years. According to the 2015's data's; Asia is producing nearly 50% of world total paper production. Europe produces almost 25% and North America produces 20%. [6].

Paper-based products are produced with different amounts of virgin and recycled papers. Packaging group of papers which are; paperboard, wrapping and packaging papers are produced with 56% percent of recycled paper. Printing and writing papers produced with the smallest ratio of recycled paper; as 8%. Newsprint production has a higher ratio of 68% recycled paper content. Molded pulp has a distinctive property among these types which is produced almost from 100% recycled paper content except some products which are used in the foodservice product group. Average recycled paper percentage of the grades can be seen in Figure -4.

PAPER GRADE	PERCENT OF WORLD PRODUCTION	AVERAGED PERCENTAGE OF RECYCLED PULP
Paperboard, Wrapping and Packaging Paper	57%	56%
Printing & Writing	25%	8%
Sanitary & Household Tissue	8%	34%
Newsprint	6%	68%
Other	4%	27%

Figure-4: Average percentage of recycled pulp included in several paper grades globally [6]

Global pulp production in 2014 was around 406 million tones. 42% of this production is from virgin fiber resources, 55% is from recovered fiber and 3% is from other fiber resources. In Figure-5, global pulp production fiber resource ratios can be seen.

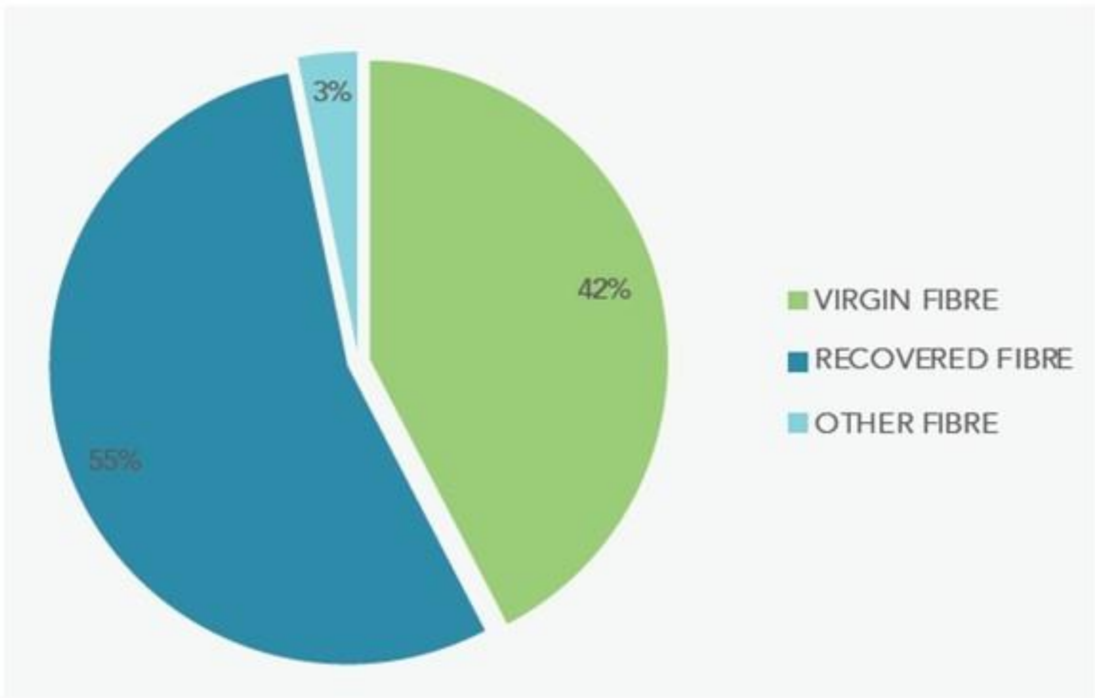

Figure-5: Global pulp production, by fiber source (2014) [5]

3. Driving Trends in Paper Pulp Market

- One of the disappointing trends in paper pulp market is a decline in agricultural waste fibres. During the ‘90s, nonwood fibres and wood fibres usage in papermaking was almost same (50%-50%) but then trend changed massively from waste fibres to wood fibres. From 2004 to 2015 agricultural waste fibres decreased from 10,5 million tonnes to 3,5 million tonnes. Straw pulp production showed dramatical decrease thorough years. Pollution was the main driver in this change. Research reports (such as RISI) predicts a further decline.

- Global demand for newsprint is declining over the past 10 years. Printing and writing papers are also representing a decline in the last 5 years. Newsprint industry has significant decline with almost -6% fall in growth rate.
- Because of the urbanization in developing countries, tissue demand is globally increasing.
- Carton and cardboard industries have around 2,5% increase in growth rate. Increase in online sales is the major force in carton and cardboard consumption. This increasing trend is expected to be continued in the following years.

4. Results, Discussion

There is not enough information about global molded pulp consumption. According to WRAPS insights, in 2004, Europe's molded pulp consumption was 270.000 tonnes [6]. With an optimistic 5% CAGR, it can be expected 560.000 tonnes of molded pulp consumption in Europe in 2019. This amount is; 0,13% of global paper production. It is obvious that the molded pulp industry will directly be effected from the changes in paper pulp market. Producers should shift their raw material sources from newspapers to the cardboard by adapting their pulp preparation systems to be prepared for the driving changes in paper pulp market. On the other hand, agricultural waste fibers might include opportunities especially with a combination of mechanical pulping which has less environmental effects than chemical pulping methods.

5. References

[1] Statista, «Production of paper and cardboard worldwide 2006-2016,» . Available: https://www.statista.com/statistics/270314/production-of-paper-and-cardboard-in-selected-countries/.

[2] P. M. Consulting, «Paper and paperboard market: Demand is forecast to grow by nearly a fifth by 2030,» Pöyry, Vantaa, 2015.

[3] J. Schmid, «China becoming mighty oak of world's paper industry,» *Los Angeles Times*, 28 December 2012.

[4] Berg, P., Lingqvist, O. , «Pulp, paper, and packaging in the next decade: Transformational change,» McKinsey&Company, Stockholm, 2017.

[5] F. Y. Statistics:, «Forest Products, Food and Agriculture Organization of the United Nations Nations, 1980, 1990, 2000, 2010, 2015».

[6] P. Ltd, UK Market Review of Moulded Paper Pulp, Banbury: The Waste & Resources Action Programme , 2005.