

## **Nonwood Fiber: No Longer a Niche**

Jan Bottiglieri, Editorial Director of TAPPI's "Paper 360", recently reviewed the growth of and outlook for nonwoods in that publication, drawing on the expertise of such industry insiders as Bob Hurter of HurterConsult and Frank Riccio, Chair of TAPPI's Nonwood Fiber Committee. Hurter observes that making paper from nonwood fibers involves the same operations as when wood is used though particular feedstocks may require significant adjustments.

Historically, nonwoods played a central role in paper manufacture, dating back to the first century, when Chinese artisans used them as papermaking raw materials. It was not until much later, in the nineteenth century, that the use of wood became widespread. Nonetheless, there are today a considerable number of papers that have combinations of properties that can only be provided by using such raw materials as abaca, flax and sisal.

Because raw material properties exhibit a much wider range than when wood is used, mill design, equipment selection and pulp quality will vary. Riccio offers wheat straw as an example. It is harvested during only one six-to-eight-week period per year, so the mill needs to have appropriate storage facilities. Digester design differs, chemical recovery is complicated by the presence of silica, and paper machine design is different because water removal is more difficult than in the case of wood pulp.

Fiber sources include agro-industrial residue (corn stalks and cobs, wheat and cereal straws, and sugar cane bagasse); dedicated fiber crops (abaca, bamboo, kenaf, etc.) and naturally occurring, region-specific sources.

Although wood will remain the dominant raw material, concerns about climate change and sustainability are spurring interest in nonwoods and millennials are pushing the market even further. Molded fiber products

(plates, clamshells, etc.), the fastest growing market for nonwoods, is being primarily satisfied by imports; some is being made in the US and it is likely that more is on the horizon.

Hurter predicts that nonwoods will play an increasing role in global production of pulp and paper over the next 10 or 20 years. In North America, a few mills will be established where raw materials are plentiful, either crop residues or purposely grown fiber crops.

## **Trend Indicators from Industry Intelligence Inc.**

[Industry Intelligence Inc.](http://www.industryintel.com) has provided market intelligence to more than 600 companies worldwide since it began as Forestweb in 1999. Industry Intelligence delivers a daily report featuring news of the paper and forest products industries. For your subscription visit: <http://www.industryintel.com>

Below is a small sampling of recent Industry Intelligence headlines, chosen to mirror significant trends in and around the paper and forest products industries.

***European recycling rate reaches 71.5% in 2015, exceeding target set by the European Recovered Paper Council for 2010-2015 period, per ERPC's final monitoring report for 2015; ERPC says new, ambitious commitment for 2016-2020 is being prepared***

The rate of 71.5% is 1.5% higher than the target set by the ERPC in the 3rd European Declaration on Paper Recycling.

***Kruger sees 85% cut in particulate matter emissions from biomass boiler at Wayagamack mill in Trois-Rivières, Québec, following commissioning of new electrostatic precipitator last June; total mill particulate emissions down 75% since 2012***

This improvement is consistent with the results achieved with a previous electrostatic precipitator

installed on the Mill's recovery boiler's flue gas scrubbing system.

***UPM receives PPI Bio Strategy Award 2016 for its biofuels business in Brussels; UPM official notes that biofuels business makes sense in many ways, and company has demonstrated that its strategy is 'not only sustainable but also good business'***

The judges were looking for a company that has seized the opportunity to use wood, biomass or waste for the creation of bioenergy, biofuels and other non-core products signifying an entrance into the bioeconomy, and has demonstrated that the strategy impacts financial performance.

***Fibria acquires 8.3% interest in Montreal-based cellulose nanocrystals (CNC) producer CelluForce, for C\$5.3M, under subscription agreement that also gives Fibria right of exclusive supply in South America of CNC produced under CelluForce's technology***

According to the subscription agreement, Fibria, subject to certain conditions, undertakes to subscribe and pay CAD5,300,000.00 for a number of preferred shares corresponding to approximately 8.3% of CelluForce's capital.

***Stora Enso's Langerbrugge paper mill to deliver renewable energy to Volvo car plant in Ghent, Belgium, via a new hot water pipeline between their two facilities; 12 of Stora Enso's mills are currently linked to local district heating systems***

The 4-km pipeline will take hot water heated using renewable energy from Stora Enso's paper mill to the Volvo plant, where it will be used to heat buildings and paint booths. The annual reductions in CO<sub>2</sub> emissions correspond to the heating of 5 000 households.

***Gomà-Camps orders 34,000 tonnes/year tissue paper machine from Voith for site in Ejea de los Caballeros, Spain, where the company has converting facilities; permits are still pending for the €30M project, startup expected in February 2018***

The new machine, with a trim width of 2.8m and a design speed of 2,000 m/min, will have a production capacity of 34.000 tpy.

***Rengo indicates, following startup of second containerboard machine at its Vina Kraft Paper mill in Vietnam, that the country's demand for containerboard is expanding at same 6.1% pace as for GDP growth, notes Southeast Asia is strategic for Rengo***

Vina Kraft Paper has added 243,500 tons per annum to its portfolio, bringing the total capacity to 489,000 tons.

***Columbia Pulp aims to break ground for planned straw pulp mill near Starbuck, Washington, around Dec. 1 and to begin operating the mill in early Q1 2018; company in final stage of bond sales process with investors, expects that to conclude late November***

The plans call for a 140,000 tons/year straw pulp mill to be built on a 449-acre site near Lyons Ferry in Columbia County. Construction is expected to take about 14 months.

***Proposal to build mill producing newsprint and fine papers in Bangladesh included in plan that initially involves constructing 750-800 MW power plant on 50-acre site of Khulna Newsprint Mill; paper mill project expected to cost about 8.5B rupees***

The power plant will be fueled by liquefied natural gas imported from India.

***Domtar highlights in 2016 sustainability report that GHG emissions from its pulp and paper mills' purchased energy are down 15% since 2010, meeting 2020 target; company's GHG emissions per tonne of product less than half that of average producer in Asia***

The reductions have primarily been realized by switching from coal to natural gas, increasing on-site cogeneration of electricity and reducing pulp and paper production in alignment with market demand.

***Evergreen Packaging might have to suspend production at its cartonboard mill in Canton, North Carolina, if severe drought continues, as low level of Pigeon River--from where mill gets its process water--is hindering mill's papermaking operation***

All indicators are that the drought will persist for at least another month, and residents in western North Carolina are being asked to conserve water.

***Lake frontage on former Sappi paper mill site in Muskegon, Michigan, comes into view as demolition progresses, with 85% of buildings on the 120-acre property now removed; site is to be leveled to grade, with work set to be completed by end of July 2017***

The mill was founded in 1899 as the Central Paper Co. It closed 110 years later in 2009.

***Volume of US paper waste has declined by more than 20% since end of 20th Century, while paper recovery has increased, resulting in about 24 million tons of paper ending up in landfills in 2014 compared to more than 50 million tons in 1999: EPA***

In addition, the EPA found that 89.5 percent of corrugated boxes were recycled.

***Global paper and paperboard production up 0.4% year-over-year in 2015, with growth slowing across***

most regions and product categories, but tissue is exception as 2015 global output is up 4.0%, a higher increase than in 2014, with China leading: report

### Paper Quote

“The efforts of the ERPC perfectly complement EU policy on Circular Economy. The paper fibre loop can serve as the perfect model for circularity.” – *European Recovered Paper Council Chairman Henri Vermeulen.*

### Statistics Corner: Producer Price Index

The producer price index (PPI) measures the average change over time in the selling prices received by domestic producers for their output. As the figure shows, the PPI has been approximately level since early in 2014. ■

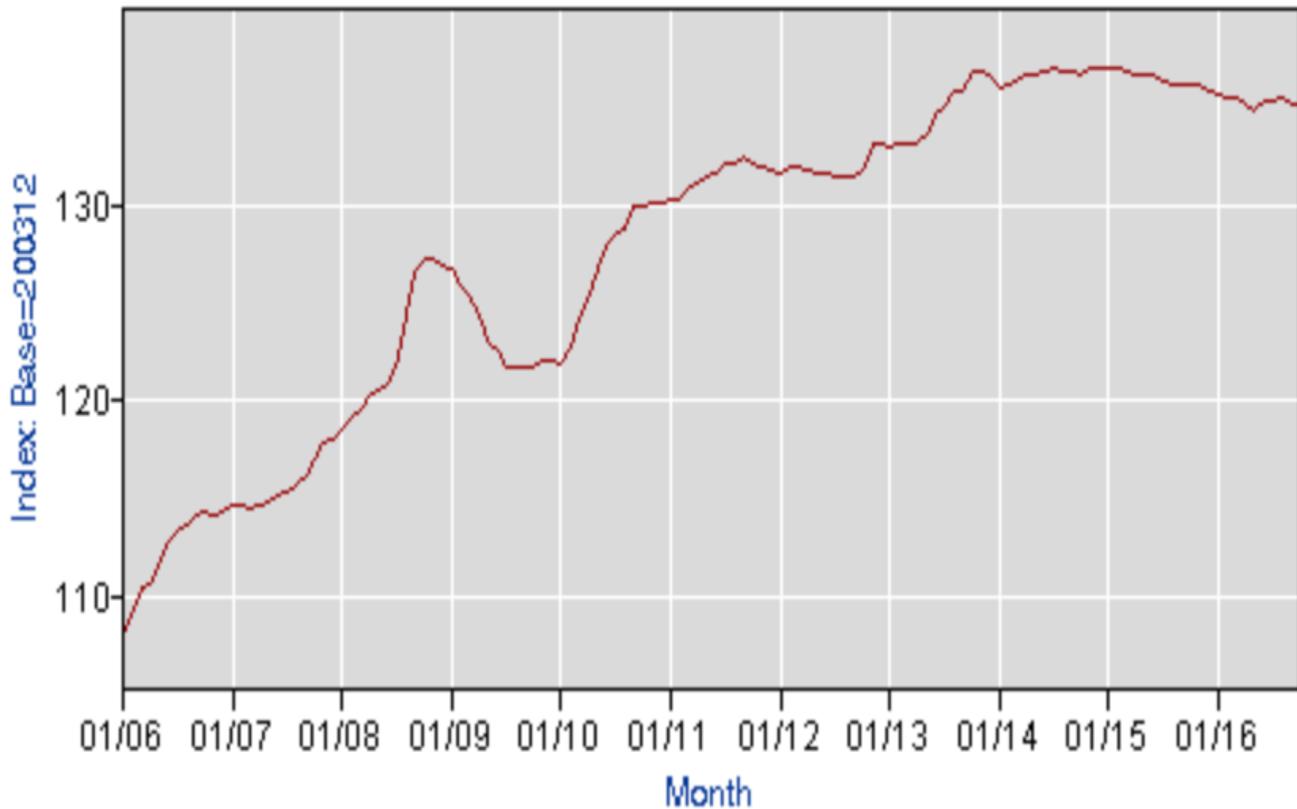


Figure 1. Producer Price Index, 2006 - 2016 (Source: Bureau of Labor Statistics)

[http://data.bls.gov/timeseries/PCU322---322---?data\\_tool=XGtable](http://data.bls.gov/timeseries/PCU322---322---?data_tool=XGtable)