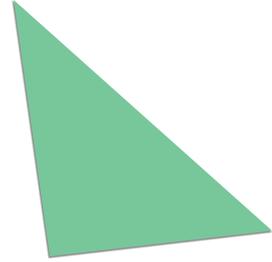


# Print and Paper The Facts



## Wood-based paper and agricultural fiber-based paper can be equally sustainable

Paper manufacturing is based largely on the use of renewable natural fibers. Until the mid to late 1800s, non-wood plant fibers, in the form of linen and cotton rags and hemp ropes, were the main raw materials for the pulp and paper industry. Increasing demand and developments in low cost wood pulping resulted in a large expansion of the wood-based pulp and paper industry during the early to mid-1900s. Today, wood is the dominant fiber resource for the pulp and paper industry accounting for 90% of the world's fiber utilization.<sup>1</sup>

In North America, the sustainable management of forests depends on a robust demand created by the forest products industry, including pulp and paper. However, in countries where wood resources are scarce, such as China and India, non-wood fibers, such as agricultural by-products and others, have been effectively used in papermaking.

Is tree-free paper really better for the environment? Are current environmental claims about tree-free paper accurate and substantiated? To answer these questions, we reviewed literature on the topic from experts in the field.

Here are some key questions to consider when requesting paper made from non-wood fibers.<sup>2</sup>

- Does it remove incentives to keep the landscape forested?
- Do the environmental advantages persist when the production expands to the necessary scale, or does it result in more negative environmental impacts (i.e. consider water use, chemical inputs, energy requirements, climate effects, etc.)?
- What is the risk that forest land will be converted to agriculture?
- What effects, both positive and negative, would this have on local communities and indigenous peoples?
- Is independent, third-party certification available to ensure environmental, social and economic baselines are being met?

Based on our review, paper made from either wood fiber or agricultural fiber can be sustainable. The overall environmental footprint of paper always depends on many factors in the product life cycle, such as responsible land and forest management, and environmental performance of pulp and paper mills. Although making paper from wood fiber has become an efficient and economical process, modern non-wood pulp and paper mills can offer a good raw material choice in certain conditions. One thing is certain—according to scientific research and global statistics on forests—the use of “tree-free” paper does not protect forests for the long-term.

- “While saving trees and protecting forests is a widely shared goal, avoiding the use of wood is not necessarily the way to get there. It is precisely the areas of the world that consume the least wood that continue to experience the greatest forest loss. Ince (2010)<sup>3</sup> examined this issue by looking broadly at various global regions and the wood use and forest trends within them. His findings, summarized below, are consistent with earlier observations about a direct link between wood use and forest sustainability:
  - Industrial wood harvest levels in North America and Europe are by far the highest among global regions.
  - North America and Europe are the only global regions experiencing net sequestration of carbon in forests and in aggregate a positive net change in forest area.
  - High levels of industrial timber harvest are coincident with fairly stable forest cover trends.

The very foundation of the tree-free movement is flawed.

Counter intuitively, continued use of paper and other wood products may be a key factor in maintaining a forested landscape for future generations. This realization is reflected in today's third-party forest certification systems that aim to offer a market-based system for supporting the sustainable growth, harvesting, and consumption of forest products.”<sup>4</sup>

- “Wood, agricultural crops, and crop residues are all important sources of papermaking fiber. Choices will be inherently driven by:
  - relative abundance [of the raw material] and delivered costs,
  - compatibility with existing manufacturing infrastructure,
  - contribution to product characteristics and manufacturing efficiencies,
  - environmental objectives, and
  - economic viability and success of products in the marketplace.”<sup>5</sup>

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- In North America we grow many more trees than we harvest. Over the last six decades, the total U.S. forest area has increased by over 3% and the net volume of trees on timberland has increased by 58%.<sup>6</sup> In Canada, the forest cover has remained stable over the last two decades and, in recent years, Canada's actual harvest has been 44% of annual growth.<sup>7</sup>



- Across the U.S. some regions lose more forests than they gain, but this is not driven by the use of forest products such as paper. For example, between 1990 and 2010, Connecticut, New Hampshire, Vermont and Rhode Island lost a total of 133,000 ha of forest area from the construction of suburban homes, vacation homes, golf courses and commercial development.<sup>8</sup> Nevertheless, the forest area increased for the Northeast region as a whole thanks to reforestation of 155,000 ha of abandoned agricultural areas in New York State.

- Over the last 15 years annual deforestation in Canada has averaged about 45,000 ha (excluding reservoirs) with about 20,000 ha due to land clearing for agriculture and 5,000 to 11,000 ha due to expansion of the oil and gas industry. Flooding forested areas to create reservoirs for large hydroelectric projects caused 35,000 ha of deforestation in the mid-1990s and a further 28,000 ha in the mid-2000s. Since 1990, 0.33% of Canada's total forest area has been converted to other uses.<sup>9</sup>

- "The scope of a recent LCA (Life Cycle Assessment) included all processes needed to produce pulp from the various sources, including forestry or agricultural processes, transport from field or forest to the mill, pulping, and end-of-life. Assessment of recycled fiber began at the point of paper collection and extended to end-of-life. Study results showed that while pulping processes differ by fiber, environmental impacts are broadly similar across fiber types."<sup>10</sup>

- "While non-wood fiber typically requires less overall manufacturing energy, wood fiber has a significant renewable fuel advantage when chemically pulped. Unlike agrifiber, wood is capable of providing not only fiber for the manufacture of wood pulps, but also the bulk of the energy required to sustain the process."<sup>11</sup>

- Most non-woods are annual crops which must be harvested in a six to eight week period and then stored for an entire year<sup>12</sup> in dedicated places with conditions to avoid rot, fermentation, etc. Wood can be harvested almost year-round and stored in mill yards for immediate use or within one year.

<sup>1</sup> [Hurter, 1998](#)

<sup>2</sup> [World Resources Institute and World Business Council for Sustainable Development, 2014](#)

<sup>3</sup> [Ince, 2010](#)

<sup>4</sup> [Dovetail Partners, 2014](#)

<sup>5</sup> [NCASI, 2013](#)

<sup>6</sup> [USDA, 2012](#)

<sup>7</sup> [Conference Board of Canada, 2014](#)

<sup>8</sup> Sung et al, 2014 (complete publication available from the journal only)

<sup>9</sup> [Natural Resources Canada, 2014](#)

<sup>10</sup> [Dovetail Partners, 2014](#)

<sup>11</sup> [NCASI, 2013](#)

<sup>12</sup> [Hurter, 2002](#)

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