



# Paperboard and Corrugated Packaging The Natural Choice

## The Facts

**Paperboard and corrugated cardboard packaging are made with a renewable natural resource – trees grown in sustainably managed forests – and when well-designed, efficiently manufactured, appropriately used and recycled at the end of their useful life, provide a host of benefits for people and the planet.**

The paper-based packaging industry is inherently circular in its supply chain, from the regeneration of renewable resources (trees) that supply fiber to recycling packaging and paper that is recovered and turned into new products. The industry manufactures more with less by efficiently using wood fiber, reusing water and pulping chemicals multiple times, utilizing manufacturing residuals and byproducts to produce carbon-neutral biomass energy and optimizing the use of non-renewable resources.<sup>1</sup>

Paper-based packaging is often the preferred sustainable packaging choice of consumers.<sup>2</sup> Its key raw material, wood fiber, is a renewable resource and it's also the most recycled of all types of packaging materials.<sup>3</sup>

Nearly 81% of all paper-based packaging in the U.S. is recovered for recycling, and more than 96% of corrugated cardboard boxes are recycled.<sup>4</sup> Only 14% of U.S. plastic packaging is recycled.<sup>4</sup> In Canada, the national recovery rate of old corrugated boxes for recycling is an estimated 85%, with at least one provincial recycling program reaching 98%.<sup>5</sup>

Corrugated box fibers are recycled 7-10 times to make new boxes and other paper products.<sup>6</sup>

Around 90% of folding cartons (by the ton) in North America sent to the frozen foods sector are made of recyclable paperboard, and are easily recyclable in the normal waste stream.<sup>7</sup>

In addition to being recyclable, paperboard and cardboard packaging are made with recycled fiber. In the U.S. for example, the average corrugated box is made with 50% recycled content, and nearly all old corrugated containers are used to make new paper products.<sup>8</sup>

In Canada, corrugated boxes and boxboard used for products like cereal and shoe boxes are mostly 100% recycled content.<sup>9</sup>

**The strength and durability of paper-based packaging powers global commerce by ensuring the safe and efficient transport of goods, and its versatility and visual appeal help businesses effectively market their products. It communicates vital information to consumers, and provides the tactile pleasure that comes with receiving a special delivery or opening a gift. And importantly, when paper-based packaging is recycled it extends the life of the natural resources used to produce it and prevents waste from going to landfills.**

The production of paperboard and corrugated cardboard packaging does not result in deforestation. Deforestation is defined as the conversion of forest to other land uses. The term specifically excludes areas where trees have been removed as a result of harvesting or logging, and where the forest is expected to regenerate naturally or with the aid of silvicultural [sustainable forestry] measures.<sup>10</sup>

The demand for wood fiber from sustainably managed forests promotes responsible long-term forest growth, so successfully in fact, that U.S. forest area expanded an average of approximately 605,000 acres per year between 1990 and 2020. Canada's forested area has remained quite stable over the same period at approximately 857 million acres.<sup>10</sup>

As long as there is demand for forest products, the forest products industry and the landowners who supply the industry will have vested interests in maintaining productive and sustainable forests, as has clearly been the case over the last six decades.<sup>11</sup>

Cities exist with the help of packaging. Most of the food and other goods they require are grown and produced outside of urban centers.<sup>12</sup>

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Packaging plays a critical role in protecting products and resources, and often helps reduce and prevent waste — especially when it comes to food.<sup>12</sup>

Increasing consumer consciousness regarding sustainable packaging, as well as the strict regulations imposed by various environmental protection agencies (regarding the use of environment-friendly packaging products) are the factors driving the market for paper packaging.<sup>13</sup>

**Paper-based packaging is a versatile, cost-efficient and safe method to transport, protect and preserve a wide array of items. It is engineered to be sturdy, yet lightweight, and is customizable to meet product- or customer-specific needs.**

The optimal packaging solution provides sufficient protection while minimizing its impact on the environment.<sup>12</sup>

When the results of the available field surveys are compared to the acceptable limit for microbial loads on corrugated containers versus reusable plastic containers (RPC) for fresh produce, 100% of corrugated containers met acceptable sanitation standards while percentages as low as 50% of RPCs evaluated did not meet these same standards.<sup>14</sup>

On average, packaging makes up only 10% of a food product's energy footprint. In contrast, the food itself accounts for about 50% of the product's energy footprint. So, protecting that food through packaging means keeping a big part of its footprint in check.<sup>12</sup>

Sustainable forestry practices increase the ability of forests to capture and sequester atmospheric carbon while enhancing other ecosystem services, such as improved soil and water quality. Planting new trees and improving forest health through thinning and prescribed burning are some of the ways to increase forest carbon in the long run. Harvesting and regenerating forests can also result in net carbon sequestration in wood products and new forest growth.<sup>15</sup>

**There are three ways to mitigate climate change: by avoiding greenhouse gas (GHG) emissions, by storing GHGs (carbon) in forests and forest-based products, and by capturing GHGs from the atmosphere. The manufacture, use and recycling of paper-based packaging contributes to all three.**

The forest products industry plays an important role in contributing to the production of renewable energy and reducing dependence on fossil fuel by using residuals and byproducts (biomass) to produce much of the energy required for its operations. Because trees absorb CO<sub>2</sub> when they grow, the international carbon accounting principle accepts that biomass is carbon neutral when combusted for energy.<sup>16</sup>

The recycling of paper-based packaging avoids greenhouse gas emissions that result when paper products are landfilled. Paper and paperboard recycling in the U.S. resulted in a reduction of about 155 million tons of carbon dioxide equivalents (CO<sub>2</sub>e) in 2018. This reduction is equivalent to removing over 33 million cars from the road for one year.<sup>17</sup>

In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fiber or energy from the forest, will generate the largest sustained [climate change] mitigation benefit.<sup>18</sup>

The carbon neutrality of biomass harvested from sustainably managed forests has been recognized repeatedly by an abundance of studies, national legislation and international policy, including the guidance of the Intergovernmental Panel on Climate Change (IPCC) and the reporting protocols of the United Nations Framework Convention on Climate Change.<sup>16</sup>

Nearly every piece of plastic begins as a fossil fuel, and greenhouse gases are emitted at each stage of the plastic lifecycle: 1) fossil fuel extraction and transport, 2) plastic refining and manufacture, 3) managing plastic waste, and 4) plastic's ongoing impact once it reaches our oceans, waterways and landscapes.<sup>19</sup>

## Sources

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