



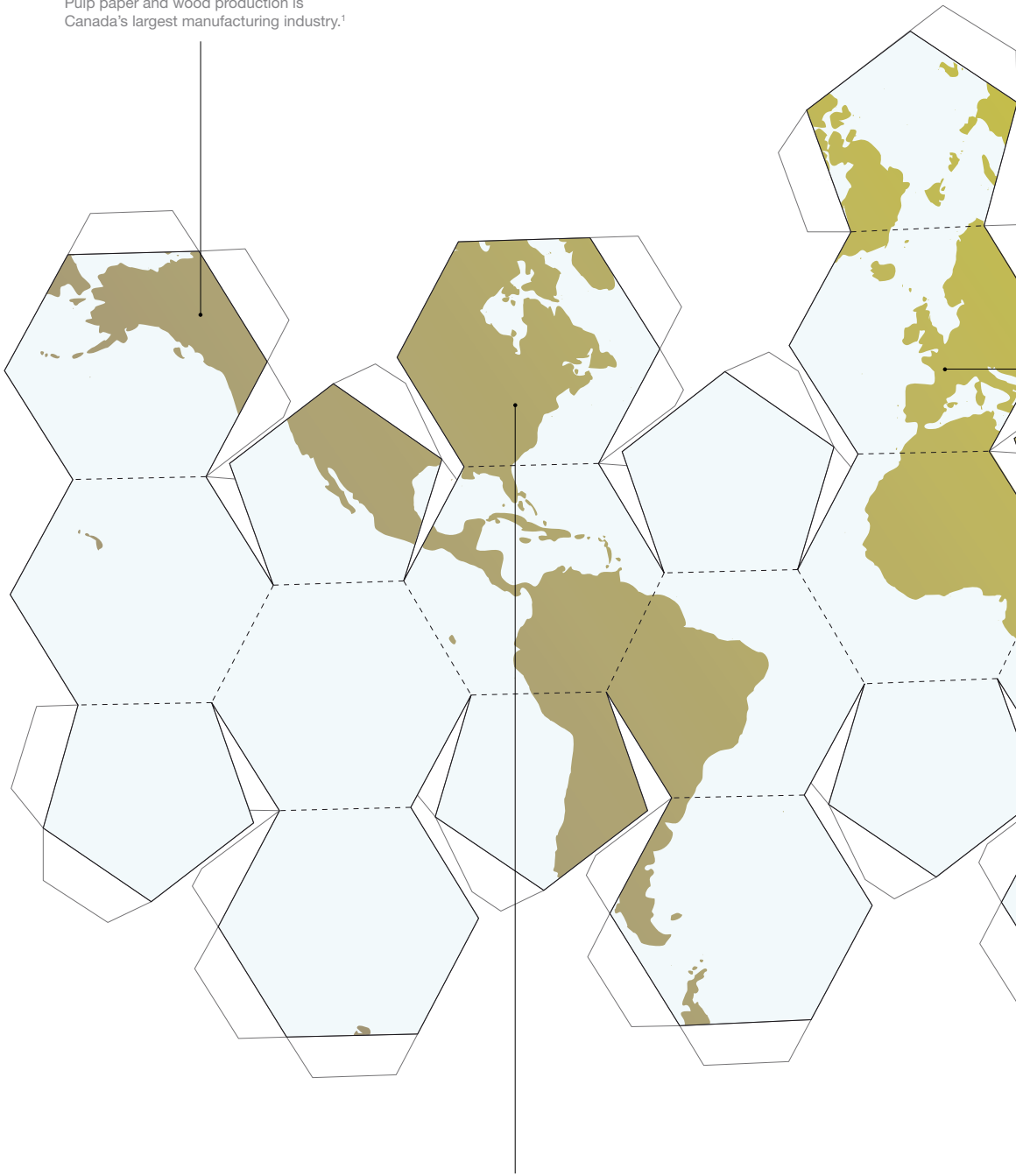
**TOMORROW'S ANSWERS TODAY**

THE AKZONOBEL MAGAZINE ISSUE 1



**AkzoNobel**

Pulp paper and wood production is  
Canada's largest manufacturing industry.<sup>1</sup>



In 2006, a record 54 percent of the paper used  
in the US was recovered for recycling.<sup>2</sup>



To create the globe cut out the  
solid grey lines around the map  
and tabs. Then score along  
the dashed lines to create your  
folds. Assemble by gluing tabs  
to corresponding edge.

In 2002, 56 percent of paper and board consumed in Europe was collected and recycled.<sup>3</sup>

China is the world's second biggest producer of paper and paperboard after the US.<sup>4</sup>



## AROUND THE WORLD WITH PAPER

WORDS Sara Sharpe

We come in contact with it every day and it's become virtually indispensable. Join us as we explore the amazing world of paper.



THE US RECYCLES  
44 PERCENT OF ITS PAPER.

THE NETHERLANDS RECYCLES  
77 PERCENT OF ITS PAPER.<sup>5</sup>



Paper. It's one of the most ubiquitous materials in the world. One that's proved unbeatable in a huge variety of uses for the last 1,900 years.

Its origins can be traced to Asia, more specifically China, where the papermaking process was first developed early in the second century. In fact, papermaking is considered to be one of the four great inventions of ancient China (along with the compass, gunpowder and printing). The Chinese introduced some of today's most familiar uses for paper – such as packaging, toilet paper, tea bags, paper cups, napkins and bank notes. And the consumption of paper in the country is only rising.

Paper spread slowly outside of China to other Asian cultures during the seventh century (the Chinese were initially reluctant to share secrets about its manufacture). The technology was first transferred to Korea and then imported to Japan by Buddhist priests, where fibers from the mulberry tree were used in its production. Of course, all early papers were made by hand.

"The inner part of the bark of the mulberry tree was, and still is, one of the traditional raw materials for hand-made paper, known as 'Kozo' in Japan," explains Hans Larsson, Group Manager of Global Data Management at Eka Chemicals, AkzoNobel's Pulp and Paper Chemicals business. "This type of paper is very attractive, both visually and in texture. But the most spectacular hand-made paper I have ever come across was in India. It was made from elephant dung!"

There isn't much that Larsson doesn't know about paper. He's played a major role in the development and globalization of the Eka Chemicals business. And with the production of pulp and paper in China set to rise considerably over the next ten to 20 years to meet increasing demand, he's well positioned to comment on the future of the industry.

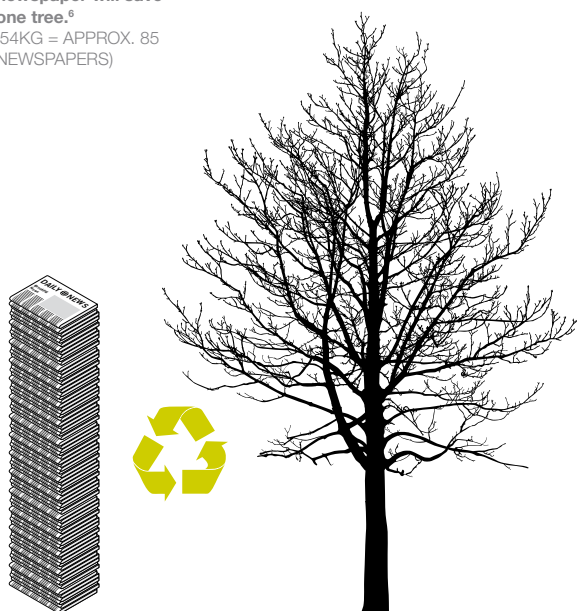
"China has the fastest growth rate at the moment, with current consumption standing at 34kg per capita, per year. If China's paper usage per capita ever becomes equal to that of Europe and North America (up to 320kg per capita, per year) it would require a doubling in the world production of paper.

In the mainstream industry, the fiber from which paper of all kinds is made has become a serious issue. This has mostly

come about due to increasing environmental concern, rising raw material prices and competition for, and restrictions on, natural resources. With the integration of more environmental initiatives, there is now considerable interest in increasing the usage of fibers other than wood pulp, as well as increasing filler content in printing paper.

However, this remains a more complex issue than it would seem. Alternative sources of fibre are being explored for the future, but many still involve paying a price environmentally. Competition for bio-resources and productive land for >

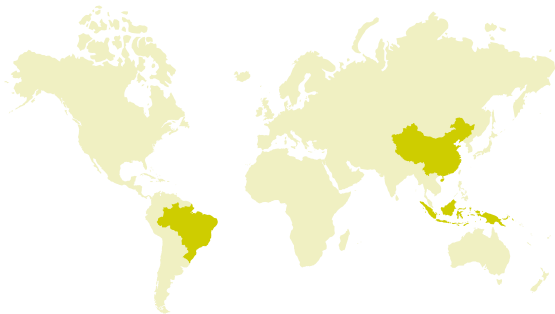
**Recycling 54kg of newspaper will save one tree.<sup>6</sup>**  
(54KG = APPROX. 85 NEWSPAPERS)



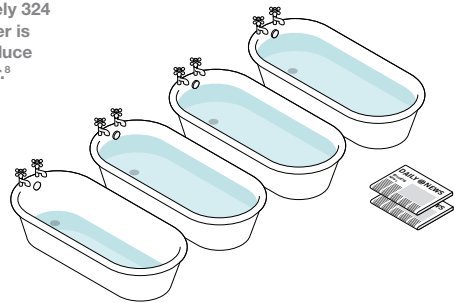
## Footnotes:

1. nce.gc.ca
2. paperonline.org
3. ForesSTAT, FAO
4. Paper Industry Association Council
5. Worldwatch Institute
6. Government of Canada, Digital Collections
7. The Economist
8. Environment Canada
9. Environmental Defense Paper Calculator

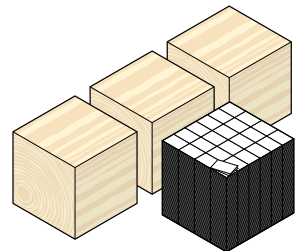
Over the past decade investment banks have invested around \$40 billion in pulp mills. By 2015, some industry analysts foresee more than \$50 billion investment, much of it in Brazil, China and Indonesia.<sup>7</sup>



Approximately 324 liters of water is used to produce 1kg of paper.<sup>8</sup>



It takes 3 tons of wood to produce 1 ton of copy paper.<sup>9</sup>



> bio-energy production is another important consideration. One of the big unanswered questions in the industry is how to supply enough fiber to meet the huge demand as economically as possible, but also in a truly environmentally-friendly and sustainable way.

“Eka Chemicals is very active in exploring interesting new options for raw materials,” notes Larsson. “Paper can be produced from a wide variety of raw materials such as straw, reed and bamboo. In China, pulp made from straw and reed used to be common in the small, traditional paper mills. However, this proved to be environmentally-unfriendly and has since decreased. Our focus now is very much on the environment and

sustainability. We are putting a lot of our R&D resources into various projects, such as looking at ways to increase the filler content in printing paper; increasing the strength in paper board while decreasing the amount of fibers; and decreasing energy consumption during the production of mechanical pulp.”

Whatever use people may have for paper, there’s a strong chance that Eka Chemicals supplies a product essential for its manufacture. That includes familiar items, as well as a few unexpected ones. Reveals Larsson: “One of the most unusual manufacturing processes we are involved in is the food industry for the production of casings for sausages, where our very clean, wet strength resins are used.” Ubiquitous indeed. **A**



