FULL REPORT

Following the Paper Trail

Overcoming Market Barriers to Environmentally Preferable Paper

AURORA INSTITUTE

Reach for Unbleached! Foundation

WRITTEN BY: Emily McNair **SENIOR RESEARCHER:** Alistair MacDonald

SENIOR PROJECT ADVISORS: Delores Broten and Gil Yaron

EXTERNAL REVIEWER: Professor Patricia Marchak

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CHAPTER ONE

Introduction

Following the Paper Trail

Photocopy and office paper are a staple product of our society. Despite growing awareness about the environmental impacts of paper production in Canada and the advent of more environmentally benign production methods, environmentally preferable papers (EPP) continue to represent only a tiny fraction of the office paper market. Estimates in the United States indicate that EPP has become a niche product with approximately 6 to 7 per cent of market share.

While there have been no market studies relating to paper consumption released publicly in Canada, it is clear that the Canadian market for environmentally preferable office papers remains relatively small as well. However, surveys have shown that Canadian consumers have repeatedly expressed willingness to pay premiums for products manufactured with a reduced impact on the environment. According to a 2001 Institute for Media, Policy and Civil Society survey, 74 per cent of British Columbians would purchase an environmentally friendly product even if it were more expensive (IMPACS 2001). More recently, POLLARA (Canada's largest public opinion and marketing research firm) found that 76 per cent of Canadians would purchase books printed on EPP at a constant 5 to 10 per cent premium (POLLARA 2002:4).

Perhaps more significant for the Canadian producers of office paper are the new purchasing guidelines of Staples Ltd., the office supplies giant. Following a two year "Paper Campaign" organized by a coalition of citizen groups and nonprofit organizations, Staples has developed a policy to phase out the purchasing of paper products that originate in endangered forests (including Canada's boreal forests) and to increase post-consumer recycled content in their overall paper purchases to a minimum of 30 per cent) (ForestEthics 2002). With mounting pressure from citizen groups, other large retailers may soon seek to follow Staples' lead.

Awareness about EPP has also been bolstered by its high profile use in the publishing sector. Canadian book publisher, Raincoast Books recently created a stir within the international publishing industry when it elected to print the latest Harry Potter novel, the *Order of the Phoenix*, on 100 per cent post-consumer recycled paper. Although utilizing EPP added approximately 3 per cent to the printing costs for the book, at 935,000 copies, it has been the largest run Raincoast Books has ever published on recycled paper (Fowlie 2002).

J.K. Rowling, the well known author of the series, was very supportive of the shift to recycled paper, as are many other leading writers; "Alice Munro stopped the presses on her latest book to switch to recycled paper, and new titles by Barbara Gowdy and Margaret Atwood have followed suit" (Fowlie 2002). In addition, 36 large book publishers in Canada have switched, or are in the process of switching, to papers that are free of ancient or endangered forest fibre. Forty-one US book publishers have made similar commitments and European publishers are likely to do so as well.

The issue for this study is that consumer interest in environmentally preferable products has not translated into increased demand for recycled and chlorine-free office papers. Printing and writing papers represent the fastest growing and highest value added sector of the Canadian paper industry, increasing sales by 11.4 per cent in 2000 (FPAC). However, EPP remains a niche market. With continual closures of Canadian mills and a steady decline of both jobs and profits, the pulp and paper industry has been slow to innovate and diversify its products. Despite the dwindling supply of timber and latent consumer demand for environmentally responsible products, our reliance on fibres produced from virgin wood pulp and utilization of chlorine dioxide for bleaching persists.

The focus of this report is an exploration of the barriers to the production, distribution and consumption of environmentally preferable paper (EPP) in Canada . The Reach for Unbleached! Foundation, in partnership with the Aurora Institute and with the support of Industry Canada's Office of Consumer Affairs, have undertaken this assessment of the barriers to market growth of EPP in Canada in order to put forward a series of recommendations for removing these barriers and expanding the market share of EPP office papers.

The primary objective of this exploration is to recommend approaches that will spur production and demand for EPPs. By following the Paper Trail – the stages through which paper passes from the creation of pulp and making of paper through distribution, consumption and recovery for re-pulping – this report explores the structure of the office paper industry and market and identifies the challenges and potential for EPPs.

Setting the Stage

The pulp and paper industry plays an integral role in the global and Canadian economies. "The sector's global annual revenue today, from its over 300 million tons of products, exceeds 500 billion dollars" (CPBIS 2003). Canadian pulp and paper mills, along with their associated forestry operations, form the economic backbone of roughly 350 communities (FPAC). However, despite its economic prominence the pulp and paper industry of North America faces considerable criticism for its environmental record.

The Canadian industry defends itself by citing its investment of six billion dollars towards environmental upgrades since 1990 (FPAC). While use of elemental chlorine – one of the worst toxic offenders of the industry – has been all but eliminated, and water consumption has decreased, there remains ample evidence of the industry's ongoing damage to the environment (see Appendix A for research in this area). The pulp and paper industry remains the third largest industrial polluter in Canada (Broten & Ritchlin 1999). Pulp and paper companies were the primary producers of the 8.5 million kg of chemicals spewed into British Columbia's atmosphere in 2000 (Read 2003). However, their environmental record has been only one of the industry's problems in recent years.

Over the last several years the pulp and paper industry has been hit hard by economic downturns and price fluctuations in the global market. Between 2000 and 2001 the shipments of Canadian pulp and paper

slipped by 6 per cent, primarily due to shrinkage in the export market. While the industry posted C$3 billion in 2000, 2001 profits dropped as low as C$800 million (Grandmont 2002). Canada's newsprint producers were hardest hit by the losses. Over the course of 2002, newsprint producers "continue[d] to suffer from lackluster demand…newsprint prices were in a trough for most of 2002…These price problems occurred despite efforts by major producers to control inventories" (Ferguson 2003).

In spite of industry's difficulties, the promising market for printing and writing papers, and the seeming willingness of consumers to use their dollars to support environmentally preferable products, environmentally preferable printing and writing papers remain but a tiny portion of the Canadian paper market. It is this curious contradiction between consumer interests and the failure of EPPs to gain a foothold in the Canadian marketplace that this report seeks to address.

Recommendations for change in the pulp and paper sector are certainly not new. Since the early 1980s industry analysis has shown that Canadian manufacturers are rapidly losing their comparative advantages in the global marketplace. Documenting these changes in the late 1980s, Patricia Marchak observes that "much of the debate over forestry in BC is based on the false assumption that the industry will continue indefinitely as the major economic activity of the region" (1991:4).

In 1996, the World Business Council for Sustainable Development commissioned a study of the global pulp and paper industry. The recommendations that emerged from *Towards a Sustainable Paper Industry* proposed market-based instruments and incentives for increasing recycled content, responsible forest management and the production of paper with minimal pollution (WBCSD 1996). The report recommended collaborative approaches and stressed the importance of enabling the public and corporate buyers to make informed purchasing choices. Many of these recommendations remain relevant to today's industry.

Ultimately, the solutions to the profound challenge ahead – the shifting of consumer awareness and the transformation of the industry's lifeblood – require transparency amongst stakeholders and a concerted collective effort. In her 1997 book The *US Paper Industry and Sustainable Production*, Maureen Smith warns against employing a "black box approach to industrial dynamics"(8). Embracing any singular solution as the panacea for the environmental and economic challenges of the pulp and paper industry, will inevitably give rise to a whole new host of problems. Heeding this warning, *Following the Paper Trail* attempts to encompass the complexity of the modern production and market systems and shies away from simplistic solutions.

Defining Environmentally Preferable Paper

The study adopts the definition of environmentally preferable paper (EPP) arrived at by environmental non-governmental organizations at a summit on paper in 2002. *A Common Vision,* a document produced by the summit, defines EPP as paper with at least two of the following three characteristics:

- Significant (at least 30 per cent) post-consumer recycled content;
- Bleaching technologies with no chlorinated substances (totally chlorine free); and
- Forest Stewardship Council-certified forest management on virgin fibre sources.

Research Methods

In order to ensure that this report meets its broad objectives, several research methods have been employed. The first step was an extensive literature review to identify the key issues around barriers to market growth of EPP. This literature review encompassed books, journal articles, previous surveys and reports and media materials. This process involved reviewing both the global context and the framework for regulation of pulp and paper production in Canada. Through this process, the report developed an analysis of best practices in shifting production and consumer demand. Examples of successful initiatives around the world are discussed throughout the report.

To gain insight into the full range of perspectives, the project conducted informal discussions and interviews with more than 100 individuals. These consisted of 55 focused interviews between December 2002 and March 2003 with stakeholders located throughout the Paper Trail including:

- Sales and marketing representatives for producers;
- Resellers, converters and retailers of paper products;
- Large scale paper purchasers and purchasing policy analysts and
- Individuals involved in the paper recovery system and/or the certification of paper products and production processes.

In order to gain feedback from a range of consumers, two different polls were conducted. The first was an online survey of bulk and institutional paper purchasers to provide information about purchasing priorities, policies and practices. The survey was sent to almost 5000 members of the Purchasing Management Association of Canada (PMAC). The response rate was relatively low, with only 139 responses received, but the PMAC survey responses provide a broad representation of purchasing managers from across the country.[1]

Between January 14th and 16th 2003, Ipsos-Reid conducted an omnibus poll of 1005 Canadians assessing consumer attitudes and paper purchasing habits. This material provides substantial information about household consumer attitudes toward purchasing office paper and EPPs.[2] Finally, discussions and feedback from the eleven-member multi-stakeholder Advisory Group inform all elements of this report.

Report Structure

The report begins by outlining background information about the pulp and paper industry in two separate chapters. The first chapter provides necessary background information about technical processes such as pulping and bleaching, with particular attention paid to the environmental impacts perspective. Chapter 2 provides a snapshot of the modern Canadian pulp and paper industry with a focus on how the industry functions on a technical level.

Chapter 3 provides a contextualization of the Canadian pulp and paper market within the global industry. It also provides historical background in order to trace the evolution of the industry. The chapter discusses the extent to which the Canadian industry and market exist within a global situation with respect to ownership and economic competition as well as the production of environmentally preferable products.

Chapters 4 through 7 address barriers to EPPs along four parts of the Paper Trail and provide a series of recommendations which are summarized in Chapter 8. Chapter 4 addresses barriers to the production side

of EPP. Chapter 5 provides the same approach to exploring barriers for distributors and Chapter 6 examines barriers to consumption of EPPs. Chapter 7 examines the barriers to, and potential for improvement of, paper recovery and the incorporation of alternative fibres into EPP production in Canada. Each of these chapters follows the same format, in providing explanations of current barriers to the production, distribution, and consumption of EPP and then offering a series of recommendations for creating change.

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CHAPTER TWO

Producing Pulp and Paper

The Processes and their Implications

The two key processes at the heart of the Paper Trail are the creation of pulp and the making of paper. While this study traces the barriers (and potential for expansion) in the Canadian market for EPP, it is the production stage that results in the most profound impacts on ecosystem and human health. The production phase is also where the most significant changes are required in order to facilitate a market shift to EPPs.

Since its inception, the technologies of production in the Canadian pulp and paper industry have been transformed. Over the past half century, efforts have focused on reducing labour requirements, integration of sawmills to provide direct fibre supplies, and a gradual shift from mechanical to chemical to thermomechanical and to chemi-thermomechanical processes. However, these changes have been based on two core premises; that capital-intensive operations are good because they eliminate labour costs and that wood will forever remain the primary source of pulp. (Marchak, 1999). In their article assessing the potential for the rejuvenation of the flagging pulp and paper industry, Leaver and Scott argue that investors are interested in industries that are innovating and growing and that the pulp and paper industry's history of incremental improvements to existing technologies has not been sufficient to ensure its long term economic well-being (2003:3).

The one area where innovation has occurred in recent years is that of environmental technology. However, while most European mills have developed and implemented these new environmental technologies (see Box 2.0), Canadian mills lag far behind. Even with investments of $6 billion dollars on environmental upgrading and ongoing efforts to improve mill capacity for utilizing recycled content, Canadian industry continues to utilize environmentally damaging processes and to produce primarily low-grade papers with low market values (FPAC).

More generally, the growing market for printing and writing papers aside, lack of capacity for the production of fine papers in most of the country is a consequence of the small aggregate market within Canada and foreign demand for pulp, rather than value-added products. This last factor is exacerbated by tariff regimes that impose no tariffs on low-grade pulps and stiff tariffs on finished manufactured products (Marchak, 1995).

What follows is an abbreviated explanation of the range of production methods used within the pulp and paper industry, as well as their impacts on the environment. Information about pulping recovered papers and the distinctions between types of bleaching processes, including totally chlorine free produc-

tion, are provided. This explanation of the elements of production provides important contextual information for this report's recommendations for improving Canadian markets for EPPs.

Making Pulp

Pulp is the fibrous raw material that makes up the bulk of a finished sheet of paper. Pulp may be made from products as diverse as timber, recovered paper, agricultural byproducts, cloth rags, sugar bagasse, and vegetable materials. The North American paper industry has typically utilized wood pulp (25 per cent from round wood, 75 per cent from wood waste or recovered paper) for paper production, although in recent years recovered wastepaper has gained importance. Some North American producers are also beginning to experiment with alternative products like kenaf, hemp and wheat straw.[3]

The process of creating wood pulp involves several stages.[4] The three primary compounds found in wood are cellulose, hemicelluloses and lignin. In order to create paper products, lignin, an adhesive that holds the other compounds together, must be removed (Christie and McEachern 2000:11). With some variation, the primary means for creating pulp are mechanical pulping, chemical pulping and chemi-thermomechanical pulping.

Mills utilize the pulping method (and raw material) most appropriate for the grade of paper they are producing. Different fibres are suited to creating different grades of paper. For example, in the case of copying paper "hardwood fibre is used as the bulk with softwood fibre added to impart mechanical strength. Newsprint is manufactured with mechanical or recycled fibre; with a small component of softwood fibre to impart strengthening properties" (Johnston et al 1996).

In mechanical pulping the raw materials are separated into individual fibres using high temperatures and refiners or grinders. Mechanical pulping produces what the industry refers to as "high yield pulp" because it yields between 85 per cent and 95 per cent of the wood as fibre (Canadian Pulp and Paper Association). However, mechanical pulping is extremely energy intensive, using between 1,900 and 2,900 kilowatt hours of energy for each tonne of pulp produced (Christie and McEachern 2000:11). The pulp produced is generally suitable for newsprint and is of lower brightness and strength than pulp created through other methods.

In chemical pulping processes, fibres are separated through the mixing of wood chips and chemicals in a "digester" – a heated pressure vessel (Smith 1997:115). The chemicals used in this process can contain a number of air pollutants including: formaldehyde, methanol, acetaldehyde and methyl ethyl ketone (US Environmental Protection Agency 1997). The chemicals break down both the adhesive lignin and hemicellulose, leading to a loss of 40-50 per cent of the weight of the pulp (Smith 1997:115). The remaining "sludge" is burned to generate energy to drive the processes or dumped into landfills. Chemical pulping processes require more water and bleaching than mechanical pulping. The two most common kinds of chemical pulping are *kraft and sulfite pulping*.

Kraft pulping involves a solution of sodium hydroxide and sodium sulfide to dissolve the lignin. The pulp produced is extremely strong, dark in colour and requires more bleaching than any other type of pulp. While kraft pulping does have the potential for the recovery of chemicals and energy used during production, Environment Canada has found that BC kraft mills "discharge about 641 billion litres of liquid effluent each year" (Broten & Richlin 1999:2). *Sulfite pulping* uses an acidic solution of sulfur dioxide and alkaline oxides. This process creates a pulp that is brighter and therefore only requires half the bleaching chemicals of kraft pulp.

Chemical pulp has stronger fibres than mechanical pulp and comprises a significant portion of pulp used in the production of printing and writing papers. Consequently, chemical pulps are typically more valuable than the mechanical variety, which constitutes almost half of Canada's pulp production.

Canada is also the world's largest producer of *chemi-thermomechanical pulp* (Christie and McEachearn 2000:11). In this method of pulping, de-barked logs are chipped and then heated to high temperatures to soften them before they are passed through grindstones in order to separate the fibres (Inveresk 2003B). A mild solution of sodium sulfide or hydrogen peroxide is used to pre-treat the chips. This process is energy intensive and due to the chemicals involved, chemi-thermomechanical pulping has the potential to cause significant damage to the environment. However, new technologies can reduce the environmental impact by limiting the amount of effluent.

As a last, interim step before the pulp is bleached, it is washed to remove dissolved lignin and chemicals. "The washing process occurs at high temperatures which generates a large volume of exhaust gases containing hazardous pollutants which are released into the atmosphere. The liquid that results from the washing process contains lignin as well as the chemicals used to separate the lignin from the cellulose" (US Environmental Protection Agency 1997).

All pulping methods have negative environmental impacts through the consumption of water and energy and the generation of pollutants that are discharged into the air and water or on land. The energy requirements of pulping are not only damaging to the environment, but may prove to be "the industry's Achilles heel" because "even those [mills] that produce large amounts of their energy requirements by burning black liquor, waste wood and bark, will in time face [non-fossil fuel] carbon dioxide and other emission limitations" (Leaver & Scott 2003:2).

In addition, Canadian mills are estimated to use between 50,000 and 100,000 cubic metres of wastewater each day and in 1997, the industry reported that they also release "almost 2,000 tonnes of chemicals into Canadian waters: more than twice the amount released by the mining, metals or chemicals industries" (Christie and McEachearn 2000:3).

Mills in Canada are also estimated to produce an average of 40 oven-dry tonnes of sludge each day (Broten & Ritchlin 1999:3). This sludge may be landfilled or burned, the ash from on-site incinerators and dregs (build up that is purged) enters the air, settles on land and may enter the food chain. The air pollutants produced in pulp production include a number of chemicals associated with human health consequences including cancer, respiratory and cardiovascular ailments and reproductive and nervous system damage (US Environmental Protection Agency 1997).

Pulping Recovered Paper

Recovered paper must also undergo a pulping process in order to be recycled and made into new paper products. In order to recycle paper, recovered paper is turned into a "pulp slurry" which is screened, cleaned, de-inked and fed into the mills with any other fibres being used. "Recovered fibre [demands] extensive cleaning [and mills have] incorporated a variety of technologies, including screens, detergents and centrifugal pumps" (Hart & Manson 1996:8).

De-inking removes a range of compounds from the pulp through processes that vary according to the desired final product. De-inked pulp is produced through the removal of most of the printing ink from the recovered paper through a combination of mechanical action and chemicals. De-inking may take place during bleaching, screening, flotation or centrifugal filtration.

Concerns have been raised about the environmental impacts of de-inking which, although primarily a mechanical process, does lead to the production of effluent (Smith 1997:209). When recovered paper is processed, reusable fibres must be separated from ink, dye, toner and adhesive. These residues form a sludge that is often toxic and must be disposed of. Many de-inking facilities use either washing or flotation methods. Through washing, approximately 80 per cent of the original fibre is recovered with the remaining 20 per cent left behind as part of the sludge (Inveresk 2003A). Flotation yields about 90-95 per cent recovery but tends to be less thorough.

De-inking technology has been steadily improving and new methods with greatly reduced environmental impacts are now being utilized, minimizing concerns regarding the process itself. To assist in the separation of toner from fibre, enzymes can be incorporated into toner and when printing it is possible to use resins that dissolve more easily in the pulping process. Although it requires specific customization for the required uses, enzymatic de-inking (cellulases) has proven effective in industrial tests in Europe.[5] Through this process, enzymes are used in the place of chemicals, reducing much of the toxicity of de-inking.

Magnetic de-inking is another potential alternative. In Canada, the toner of laser printers and 35 per cent of copiers contains magnetite. Using a magnetic separator drum can separate this toner and, in combination with enzymatic de-inking, is effective and a great deal more environmentally benign. "The combination of toner ink agglomeration and magnetic separation has been proposed for office papers. In laboratory studies, a single pass of agglomerated ink through magnetic separator resulted in 91 per cent ink removal with a 7 per cent fibre loss" (Borchardt 2003:3).

While proponents of virgin fibre pulp have argued that utilizing recovered paper has negative environmental implications, studies have shown that the negative impacts are considerably reduced in comparison to traditional virgin fibre production methods. Examining 16 different areas, the 1995 Paper Task Force found that "ton-for-ton, 100 per cent recycled paper made from de-inked used office paper is preferable (for most parameters) or comparable (for three parameters) to 100 per cent virgin paper" (89). Not only did the recycled paper perform well in many measurements, it came out far ahead in categories such as the production of greenhouse gases, solid waste and particulates.

Unsurprisingly, the process of recycling paper consumes considerably less energy than is required to turn trees into pulp. Reprocessing is estimated to require only 10-40 per cent of the energy used to create pulp from timber (Magazine Paper Project). Within the Task Force Study, the only areas where recycled paper production had greater impact on the environment was through "purchased and fossil-fuel derived energy, where the recycled system exceeds the virgin system by 17 per cent and 19 per cent respectively" (Paper Task Force 1995:89). This may be in part due to virgin mills accounting for some of their energy needs through the burning of waste fibre and energy co-generation through the burning of trees (Interview #43). While de-inking mills require larger quantities of purchased energy, they still use less overall energy.

The Bleaching Process

Pulp that requires whiteness is typically bleached with a mixture of chemicals and enzymes in order to whiten the fibres. It is during this process that chlorinated compounds have traditionally been used, producing some of the most hazardous pollution associated with the industry.[6] The type of chlorine used in the bleaching process varies in its toxicity. The most toxic, *elemental chlorine*, has been phased out of most mills in North America[7] and replaced by a process called elemental chlorine free (ECF) which substitutes elemental chlorine with *chlorine dioxide*. The advantages of utilizing chlorine dioxide are bright pulp, good strength properties and a considerable reduction in the AOX of discharged effluents (Johnston et al 1996).[8]

Making matters somewhat confusing, ECF may be used for a variety of different processes to whiten paper. Variations in the technologies of different mills mean that a range of ECF processes are employed. The distinctions are important because the environmental implications of ECF processes also vary. Most mills in North America that are described as ECF, have simply switched from elemental chlorine to 100 per cent chlorine dioxide substitution. There are however, some ECF mills that include oxygen delignification, the use of less harmful ozone or peroxide in the bleaching sequence, and possibly even some bleach effluent recycling. These more advanced ECF processes reduce consumption of energy and chemicals, but still use chlorine dioxide in the final stages of bleaching.

Even with the documented improvements brought about by a transition to chlorine dioxide, a number of studies show that the surrounding ecology is still severely disrupted (see Appendix A for list of relevant studies). Chlorine derivative chemicals are still producing AOX and creating chloroform and dioxins (Culver). One of the major problems is the impact on fish and aquatic life, particularly in their growth and reproductive capacity.

Therefore, despite the investment in ECF technologies, the environmental impacts of Canadian pulp and paper mills remain a serious concern. Environment Canada's recently released National Assessment of Pulp and Paper Environmental Effects finds that:

> *On a national scale, the benthic invertebrate surveys most commonly revealed a eutrophication response pattern as a result of exposure to pulp mill effluent…Effects were also observed on fish downstream effluent, with the overall response pattern being one of combined metabolic disruption and nutrient enrichment…Although effluent quality has vastly improved since the 1992 Pulp and Paper Effluent Regulations…mills continue to have an impact on fish and their habitats* (Environment Canada 2003:27).

Impacts are also experienced by employees in mills. The CEP's national policy statement contends that "Every environmental risk that pulp mills pose to their neighbours is also a health and safety issue for CEP members inside the mill. In particular, gassings of workers by chlorine or chlorine dioxide, or deadly contact with sulphuric acid or other dangerous chemicals, is a daily threat for workers requiring highly sophisticated safety procedures and constant vigilance." (CEP, p.24)

The lightening processes that do not use chlorine-based compounds for whitening typically substitute *oxygen-based compounds* and are known as TCF (totally chlorine free). Totally chlorine free processes generally utilize oxygen, ozone and hydrogen peroxide for bleaching and these processes remain a vital transition point for further reducing environment impacts.

TOTALLY CHLORINE FREE

Millar Western's Meadow Lake Mill

Recognized by Environment Canada as a "Canadian Success Story", Millar Western's mill in Meadow Lake Saskatchewan has set a number of precedents for its Canadian counterparts. Operational in 1992, the mill was the first in the world to successfully implement a zero-liquid effluent discharge system and is also totally chlorine free – "the Meadow Lake mill generates no chlorinated dioxins, chlorinated furans or other chlorinated organics" (Environment Canada 2000).

Meadow Lake produces bleached chemi-thermomechanical pulp but consumes about 10 times less fresh water than conventional mills of its kind (40 times less than kraft mills). Hydrogen peroxide is used to bleach the pulp. Production costs have been found to be comparable to other mills. Meadow Lake received ISO 14001 certification in 1998, following on the heels of Millar Weston's Whitecourt Alberta mill which was the second mill in North America to receive certification in 1996.

At the same time, there are concerns that AOX is only one of several chemicals which contribute to the toxicity of pulp and paper effluent. Addressing this concern would most likely require that effluents be collected, recycled and thus diverted back into the production cycle, a process that has historically been seen as being problematic: (Johnston; CEP, p. 24; Interview #43).

> *Since chlorine and chlorine-chemical bleaching agents produce an effluent high in chloride they cannot be readily processed through the recovery cycle. The chloride ion, as hydrochloric acid is highly corrosive, gives the potential for leakage from the boiler tubes and the risk of serious explosion if water reaches the melt of minerals in the bottom of the boiler* (Johnston from McDonough 1992).

Chlorine derivative bleaching creates complications for transition and lightening processes. Processes without chlorine derivatives have greater potential for closed loop technologies that recycle chemicals used in the production process. While there are numerous mills around the world utilizing such technology, very few Canadian mills are among them. Unfortunately, determining the exact number of mills that use or have the capability of using closed loop technologies is difficult because of the lack of reporting. TCF processes are an important interim step for mills planning to move toward zero effluent or to minimize their negative impacts on human health and the environment.

Making Paper[9]

Papermaking on an industrial scale is a complex process. When pulp mills are located close to paper mills (the mills are integrated) liquid pulp can be pumped directly into the paper mill. In other cases, it is necessary to strain the pulp, dry it, and pack it into bales for shipment (Inveresk 2003B).

In order to create paper, a mixture of water and the paper are mixed together into a slurry in a "head box" (the combination of pulps varies depending on the paper product). At that point, the water must be removed (the mixture is 99 per cent water) and through gravity, vacuums and centrifugal force, 85 per cent of this water is drained from the paper mixture and put through the stages of pressing and drying. Through pressing and drying – heated drying cylinders – still more water is removed. Finally, the calendar stage – polished iron rollers – smoothes the paper and provides the correct thickness. Paper is then rolled onto reels and cut to the required size.

There are a range of paper end-products, separated into different paper grades. Paper grades include (in order from least valuable per unit to most valuable)[10]:

- Paperboard – the largest use of paper including ingredients used in a variety of cardboard boxes and gypsum paper;
- Packaging paper – sackpaper, craft paper, construction paper, packaging papers;
- Newsprint – typically unbleached and used in the production of newspapers;
- Tissue Paper – includes a variety of sanitary products; and
- Printing and Writing Papers – includes office papers, magazines and books.

Of the above grades, Canada is most heavily invested in newsprint and is a global exporter of both wood pulp and of newsprint.[11] Printing and writing papers represent a relatively small proportion of Canadian paper production. This is partially attributable to the fact that most office papers are produced through a chemical pulping process, rather than a mechanical one and because the mechanical pulping technologies used in Canada have historically been more appropriate to producing low grade papers.

Conclusions

Canada has some examples of innovation within the pulp and paper industry, but most of the technologies used to produce pulp and paper remain conventional and have seen minimal changes in recent years. These traditional processes of production provide a partial explanation for the limited quantities of EPP being marketed in Canada.

Industry submits that investment is driven by demand for the product and the ability to achieve sufficient returns (Interview #20). Yet even when investing in technological change, the pulp and paper industry has opted for approaches that do not lend themselves to the production of EPPs. This lack of investment in environmental initiatives has not only limited industry's ability to evolve further (to closed loop technologies); it has also hindered their capacity to meet the growing consumer demand for EPPs.

At the same time, the pulp and paper industry is also facing the challenges of a changing market. The Canadian pulp and paper industry primarily produces pulp and lower grade papers such as newsprint. Canada's position as the world's largest exporter in two low value-added areas of the industry – market pulp and newsprint – does not situate the industry well in times of economic fluctuation (PPPC 2002).

Those companies in eastern Canada that produce higher value printing and writing papers are better positioned to create new and innovative products that meet a growing demand for office and specialty papers. However overall, the pattern of exporting minimally processed products has led to criticism that the Canadian pulp and paper industry is falling into the same "staples trap" as the forestry industry (Marchak, 1993; Peerla 2000:10).

The next chapter progresses from the technical side of the Canadian pulp and paper industry, to locating Canada within the context of the global market. In a rapidly changing market, Canada's pulp and paper industry may find that investing in the production of EPPs is not only environmentally responsible, but also economically sound.

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CHAPTER THREE

Situating Canada Within the Global Market

It is impossible to isolate the Canadian pulp and paper industry from the global context. Understanding how changes in the global market are impacting Canada's industry is central to developing a healthier paper sector. While the market share of EPPs is a reflection of the industry's environmental sustainability, the economic health of the industry is vital to its long term survival. The ability of the pulp and paper industry to generate secure jobs for Canadians and to contribute to the well-being of Canadian communities is an integral part of overall sustainability.

Historically, Canada has been a major player in forestry and consequently pulp and paper production. However, for the last two decades transnational corporations have increasingly dominated the industry and competition has grown fierce as new countries have entered the market. Consolidation and mill closures have become regular occurrences in an industry plagued by price uncertainties and overcapacity. At the same time, demand has continued to grow at a rapid rate – primarily due to growing markets in Asia and Latin America. In these parts of the world, global investors have seen the opportunity to expand both production and consumption of paper products (Lang 1996).

Another rapidly expanding area of the global pulp and paper market is recovered paper. Canada is not an exporter of recovered paper, but rather one of the world's largest importers – primarily from the United States. In 2002, industry imported 1.6 million tonnes of waste paper and paperboard for recycling into Canada (Natural Resources Canada 2003). A number of nations have found a substantial and affordable source of fibre in recovered paper, but Canada's small and relatively dispersed population (and a 44 per cent recovery rate) is unable to provide sufficient recovered paper to the immense pulp and paper industry. This leaves Canadian producers vulnerable to global price fluctuations in recovered fibre.[12]

The Canadian industry has been influenced by a number of factors including its own history, global trends, and the changing priorities of Canadian citizens and governments – particularly with regard to environmental concerns. While Canada is still one of the largest exporters of pulp, the changing nature of the entire pulp and paper industry indicates that it is time to reconsider how to maintain the long-term viability of this cornerstone of the Canadian economy.

Historical Background

The pulp and paper industry is one of Canada's oldest, with the first mill opening in Lower Canada (St. Andrew's) in 1803 and mills in Upper Canada and the Maritimes becoming operational over the next fifteen years (FPAC). By 1851, Canada had ten mills in Upper and Lower Canada. Prior to Confederation, these mills used rags, not wood pulp, to produce paper.

Canada's early role innovating the technologies of paper production was established when "Charles Fenerty, a Nova Scotian…[was] the first [in the Western Hemisphere] to make a sheet of paper from wood, and to use grindstone for reducing wood to pulp in 1841" (Sinclair 1988:34). The first mill in the Americas to produce pulp with the mechanical process, located in Valleyfield Quebec, became operational in 1866 (ibid:34). The first mills in the hemisphere to utilize chemical processes (both sulphite and kraft) were located in Ontario and Quebec.

The pulp and paper industry in Canada quickly gathered momentum which extended through into the 1980s. Therefore, while there were 21 mills in operation in Canada in 1871, by 1931 there were 103 mills with 26,669 employees and by 1981 there were 144 mills with 87, 882 employees (Sinclair 1988: 36). Through the 1960s there was expansion within the industry throughout the world – demand was growing at approximately 5 percent each year and Canada was providing both the US and European nations with pulp and newsprint (Thompson and Kennedy 1996:2). During the 1970s, with the liberalization of trade and a drop in demand growth to 2 percent, the growth of the Canadian industry slowed (ibid: 2).

The 1970s also saw the beginning of changes in ownership patterns within the industry "from predominantly family owned businesses to professionally managed transnational corporations via merger or takeover acquisitions…and it was predominantly North American and Scandinavian companies which came to dominate international activity" (Thompson and Kennedy 1996:2). It was at this time that the boom and bust nature of the paper production industry became apparent, a cycle that has continued through to today. The industry has consistently responded to increases in demand, with over investment in capacity leading to a situation where oversupply (and excess capacity) is a chronic problem.

These global patterns have been directly reflected in the Canadian pulp and paper industry. Up until the 1970s, relatively small regional companies dominated the industry. However, with the power of large global corporations that emerged in the 1980s, the landscape of Canada's forestry and pulp and paper sectors changed significantly and saw continual changes in ownership.

The trend of consolidation is, in part, a response to the growing number of markets and producers competing in the global economy, but is also a way "to address the chronic overcapacity and fragmentation that have plagued the industry for years" (Abramovitz & Mattoon 1999: 18). Recent large scale consolidations in Canada, including the 2001 purchase of Pacifica Papers by Norske Canada and the 2003 announcement of a merger of Tembec and Domtar's solid wood products (with direct implications for pulp fibre supply), indicate that consolidation is the continued direction of the industry.[13]

Consolidation trends have arguably been to the detriment of the Canadian pulp and paper industry which, in response to global price fluctuations, has become "obsessed with mergers, spin-offs and various financial market acrobatics" (Payne 2000:i). In 2000, Brian Payne, Vice President of the Communications, Energy and Paperworkers Union for the Western Region, observed that "the BC pulp and paper industry is in ownership chaos. There are few, if any companies with a plan for the future because they are overwhelmingly focused on their impending sale to someone else" (ibid).

The trend of consolidation is reflected at the global level. Since 1990, 55 differentiated companies in North America and Europe have become the assets of just seven corporations (Salomon Smith Barney

2002). The major Canadian-based players in these mergers have been Abitibi-Consolidated and Tembec, but other international companies such as Weyerhaeuser and Stora Enso have also played a role in the consolidation of Canadian pulp and paper operations.

A Shrinking Supply of Jobs

Over the past two decades, while the profits in the pulp and paper business have typically been boom and bust, the supply of jobs has been steadily decreasing. While industry representatives continue to emphasize the importance of forestry and pulp and paper within the Canadian economy, both areas have seen declining levels of employment. Employment in the Canadian pulp and paper industry peaked in 1981 and by 1985 seven mills had closed and 10,000 jobs had been eliminated (Sinclair 1988:36).

With a financial squeeze in the last two decades, one of the primary responses of the Canadian pulp and paper industry has been to shut down mills that are not proving to be sufficiently profitable. More often than not, corporate takeovers have led to direct and rapid job losses. For example, when New Zealand-based Fletcher Challenge took over Crown Zellerbach Canada and BC Forest Products, "the 12,000 people that were brought together by the merger…[became] less than 3,000" within less than ten years (Wilson 1997).

Within the province of British Columbia, the last five years have seen the loss of 13,000 jobs, 27 permanent closures of mills and a drop in annual provincial revenues by one third (Meissner 2003). By reducing the capacity of an industry that has had far more ability to produce pulp than fibre or markets, corporations hoped to cut their losses. In David Peerla's report about the specific challenges of the British Columbia pulp and paper industry, he observes that industry's disinvestment policy has been the primary reason for job loss (2000).

Growing Competition and Shrinking Profits

Currently there are very few new mills being built in North America. This is partially a reflection of the reduced fibre sources in some parts of the United States and Canada (due to over-logging) and indicates existing overcapacity in the industry. The situation has also been exacerbated by the aforementioned growth of pulping capacity in other parts of the world. With a massive increase in fibre generating ability through fast growing plantation trees, countries such as Brazil and Indonesia and are creating further competition for Canadian exports.

Indonesia, for example, offers a text book example of how new entrants to the pulp and paper market have rapidly developed supremacy over product pricing. While Indonesia was producing modest amounts of pulp in the early 1990s, the country's pulp exports expanded from 111 thousand tonnes in 1992, to 1.3 million tonnes in 1998 (Peerla 2000:16). The industry has continued to grow exponentially and although still representing a relatively small portion of the global market, David Peerla observes that

> *the Indonesians have had a major influence on prices for pulp through unbeatable costs. BC's aging mills face a future in which they are forced to compete with greenfield mills in emerging countries that can produce more than 2,400 tonnes per day. Clearly, size matters in the new global pulp market (ibid:16).*

The fast growth of fibre sources of warmer climates, particularly trees such as radiata pine and eucalyptus, allow the agricultural plantation model to be applied in countries such as Chile, New Zealand, Brazil

and Vietnam. Much of the growth in Asian production levels, as well in the Latin American paper sector, is attributable to global investment. "With the advantages of massive brand new mills, cheaper fibre and labour, and in some cases, weaker environmental restrictions, production costs for many Asian and Latin American mills are so low that they can easily compete in export markets" (Abramovitz & Mattoon 1999: 16).

Canada has lost its price advantage in the export of softwood kraft market pulps for printing and writing papers to hardwood kraft market pulps from southern latitudes (Peerla 2000:5). Consequently, Canada struggles as a global player in the production of conventional printing and writing papers. Although the proportion of production dedicated to printing and writing papers is growing – up to 31 per cent of Canadian paper production capacity in 2001 – it still comprises a much smaller percentage of the world's total than Canada's wood pulp and newsprint industry and virtually all of it is concentrated in Ontario and Quebec (Lockwood & Post 2002).

Canada remains strongest as an exporter of relatively low grade products for which the aging mill infrastructure is better suited (Government of Quebec 2001). These papers tend to have a lower market value and are more vulnerable to global price fluctuations. Market pulp value fell, in real terms, from an average of $650 (US) in 1972, to about $550 in 1992 (Woodbridge, Reed & Associates 1988). In more recent global trends, the prices of these products continue to suffer (PricewaterhouseCoopers 2001).

The aging Canadian infrastructure has led to considerable criticism about disinvestment in the pulp and paper industry. A comparison conducted during the 1980s found that Canadian machinery was outdated and relatively unproductive in comparison with the more modern technologies being adopted by the Scandinavian competition (Sinclair 1988: 43-53). Observers of the industry have also long contended that diversification to include a stronger emphasis on value-added papers such as printing and writing papers is important to long-term sustainability (Woodbridge, Reed & Associates 1988). Some have suggested that it is equally important that the Canadian industry "act now to develop new ecologically certified pulp and paper products or face a dismal future of more mills closings and an increasingly difficult struggle to win sales and market share" (Peerla 2000: 22).

While Canada's reliance on minimally processed products is a disadvantage, even the wealthiest of those invested in the global pulp and paper industry have seen profits shrink over the past ten years. PricewaterhouseCoopers' 1998 and 2002 reports on the state of the industry reflect a consistent pattern of large corporations reporting reduced net earnings.

There are many different explanations for the lagging profits. Norske Canada's most recent shareholder update claimed that the "our pulp business was…affected by the weaker US dollar as well as the SARS outbreak in Asia and a drawdown of inventory by Chinese buyers. Pulp prices, which had been gaining strength earlier this year, weakened late in the quarter in the face of softening demand and rising Norscan inventories" (Horner 2003). The reality is that the industry in North America, generally managed entirely for shareholder profits, has become increasingly fragile in the face of price fluctuations, global trends and consumer concerns.

Environmental Regulations and Policies

Aside from transitions in ownership in the industry, recent years have also seen significant changes in technology and approach, due mainly to growing public concerns with the environmental impacts of pulp and paper production. Environmental policy can have a number of manifestations – Canada generally utilizes regulation in order to place restrictions on those substances or activities deemed to be most damaging. As will be discussed further in the following section, some nations have implemented policies that involve mutual goals and targets throughout the Paper Trail.

In those countries that have responded to pulp and paper pollution with regulation, the ability of industry to adapt has been varied. While North American industry representatives have tended to be vocally opposed to regulations and have not attempted to exceed (or even in some cases to meet) regulatory standards, some nations have seen rapid innovation and efforts to revolutionize the industry. "Germany, Austria, Switzerland and the Scandinavian countries have been quick to respond to the environmentalists' pressure for chlorine-free processes and more recycled content…Industry in the United States has been slower to adjust despite facing the pressure of fifty environmental groups campaigning for a change" (Thompson and Kennedy 1996:4).

A significant distinction between the North American industry's defensive response to criticism from the public and the European industry's attempts to substantially alter their environmental impacts is the desire to respond to the consumer. It has been argued that those in the industry that are becoming more responsive to the end-user will form the backbone of the future pulp and paper industry (Moore 2003).

Another distinction is how regulations are developed and whether they are incentive-based. Many of the countries with the best environmental technologies, producing the bulk of the EPPs, are those utilizing incentive-based policies. In his assessment of how pulp and paper companies will remain competitive, Dr. Graham Moore argues that

> *for the industry to effectively meet environmental policies and regulations, it needs to have a far better dialogue with governments and other policy-makers to ensure that policies implemented are flexible and are incentive- rather than punishment-based. Incorporating economic measures into environmental policy can provide some of these incentive possibilities, and can lead to implementation of creative solutions that meet the combination of economic, environmental and societal challenges facing the industry* (Moore 2003).

Today the innovators may be found in Europe, specifically amongst the other major exporters of paper products: Finland, Germany and Sweden. The governments of these nations are taking significant responsibility (often in partnership with industry) to ensure that the pulp and paper industry is reducing its impact on water, air and human health. While Canada may have made progress in its regulation of pulp mills, like the United States, the industry continues to lag behind much of Europe in environmental technologies and market share of EPPs.

Canadian Regulations

Canadian regulation of the pulp and paper industry has had an impact on the levels of certain pollutants, primarily those entering the water. However, while mills have adjusted their technology – in particular by eliminating chlorine gas – government has failed to enforce many of its existing regulations to a sufficient degree. In the cases of British Columbia and Quebec, where provinces have harmonized their regulations with the federal government, there has been lack of clarity about which jurisdiction is responsible for the enforcement. As such, there has been minimal prosecution of violations of the law (Metcalfe 2002:12).

It is important to acknowledge that some industry representatives argue that the government regulations are an integral aspect of its ability to remain competitive and to gain the trust of consumers. "A 1994 survey of Canadian industry found that 95 per cent of respondents felt that regulation was the most important motivating factor in managing environmental issues. More recently, a 1997 survey of environmental directors of pulp and paper mills in Canada revealed that 70 per cent saw government regulations as the most influential source of pressure" (Metcalfe 2002:18).

The federal government has been providing regulation of the pulp and paper industry since 1971 when effluent regulations were passed into law. These regulations were augmented by "air emission guidelines for the [industry] in 1979" (Sinclair 1998:174). In order to modernize and clarify the regulations the federal government introduced a three part regulatory scheme in 1992. The first two provisions were process-related changes[14], while the third, part of the Pulp and Paper Effluent Regulations, "imposed limits and controls on the effluent and required regular monitoring and reporting of effluent composition and toxicity" (Christie and McEachern 2000: 20).

The Pulp and Paper Effluent Regulations have endured considerable criticism not only for their limited measures of damage to the environment (with a focus on lethality in fish, as opposed to systemic measures for negative impacts on ecosystem health) but also because they do not impose absolute limits on emissions and instead tie permissible emission levels to mill production rates. This means that "although the regulations set limits, a mill with a very high production rate is still permitted to discharge very large amounts of organic and other solid pollution" (ibid: 20).

In addition to weaknesses with regulation, Sierra Legal Defence Fund has reported that there have been repeated violations of the law, with no consequences for the offending mills. "Between 1995 and June 1998, six of the worst offending mills reported a combined totality of 1,726 violations" (ibid: 27). In 1997, it was found that 24 per cent of mills were still using chlorine for whitening (Metcalfe 2002: 19). Recent studies of air quality in BC, suggest that it may be that mills are now causing more damage to air quality, as chemicals are released into the atmosphere instead of the water (Read 2003).

It is difficult to reconcile these finding with Environment Canada's recent news release, congratulating the industry for the immense improvement in their environmental record. Canadian federal Minister of Environment, David Anderson, has stated that "the impressive achievements over the last ten years by the pulp and paper industry are a true environmental success story and a good example of what we can accom-

plish when we work together to better our environment" (Environment Canada 2003). Some of the improvements listed by the government include: the reduction of the release of chlorinated dioxins and furans by 99 per cent and the reduction of the use of products that contain the toxic substances nonylphenol and ethoxylates by 99.8 per cent (ibid).

The middle ground is an acknowledgement that, while many mills have implemented measures to reduce the pollutants regulated by government, there remain others that are in continual violation of the law. In addition, the regulations remain insufficient to motivate systemic change in paper production methods. Instead the improvements remain incremental and do not reflect a sustainable approach to product creation.

Conclusions

Understanding how Canadian-based producers of pulp and paper fit within the larger global context is essential to developing sound recommendations for expansion of the EPP market. Currently it is difficult to distinguish how Canadian paper products are unique. Multinational corporations manage the bulk of production with limited concern about environmental impacts, meeting consumer demands or providing jobs for Canadians. Indeed the Canadian industry is facing massive layoffs and profit reductions due to global price fluctuations and overcapacity. The products that most Canadian mills generate are neither unique nor as profitable as more highly processed papers.

Producing a paper that is unique within North America – namely EPPs – would generate a niche market to provide protection from some of the above challenges. Considering the current difficulties facing Canadian-based producers –diversification would be an economically sound choice. In addition, there is a vocal and growing contingent of consumers that are committed to buying a high-value printing and writing paper products (see chapter 6).

Associating Canadian producers with EPPs would allow Canada to differentiate its product in the marketplace and would carve out a more stable base for local jobs. Chapter 4 will identify and analyze the current barriers to the production, as well as analyzing why producers in Canada have not embraced the opportunity to develop a market niche with EPPs.

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CHAPTER FOUR

Production Barriers to Environmentally Friendly Paper

[I]*t is necessary to understand the structure of the industry to influence its use of material and reduced the burdens it places on the environment.* — Smith 1997:13

Although the Canadian pulp and paper sector has seen a steady decline in profits, it remains a highly profitable industry (with over 12 billion dollars in exports in newsprint and pulp in 2002) and a substantial employer of Canadians (Natural Resources Canada 2003). The paper industry employed 109,200 Canadians in 2002 and the entire forest sector (including paper) employed 361,400 people (ibid). The links between pulp and paper and other sectors (forestry, chemicals, paper distribution) extend the impacts of the industry. An industry with such a strong presence in Canada also has significant influence on the health and well-being of many Canadians.

Producers of pulp and paper in Canada include companies with head offices located in Canada, such as Domtar, Cascades, Fraser Papers, Abitibi-Consolidated and Canfor. In addition, a number of large companies with pulp and paper operations in Canada are headquartered in other countries – Weyerhaeuser (US), International Paper (US) and NorkeCanada (partially owned by the Norwegian company Norke Skog).

As pulp and paper has become a global industry, it has also become less attached to any particular place or community. For this reason, it is difficult to critique how the industry has functioned in Canada, without recognizing that decisions are made on an increasingly larger scale – with shareholders and the bottom-line of companies around the globe in mind. It is also important to recognize the role that corporate culture has played in the decision-making process of individual companies and the pulp and paper industry generally in Canada. This culture is particularly relevant in examining the barriers to EPP production in this country.

Corporate culture refers both to the psychology of a particular company and to approaches and attitudes of an entire industry. As with individual humans, corporations react as much to their perceived concerns and challenges as they do to actual phenomena. Therefore, while some of the cultural barriers faced by corporations are shaped by their internal structures and their interrelationships, because companies are deeply embedded in the broader cultural fabric of society, they are also influenced by contextual

barriers. These contextual factors range in scope from politics and global relationships to the choices of consumers and are often so immense that it may be difficult for individual corporations to affect change.

In Canada, the corporate culture of the pulp and paper industry is linked to the history of fibre sourcing and production prerogatives in Canada and characterized by a sense of comfort with a commodity product. Many pulp companies are offshoots of timber corporations, whose primary focus has been on the commodity dimensional lumber sector for over 100 years. Those firms that started as paper companies often did so in the late 19th century, and have a century or more of reliance on wood products as the bulk of their fibre mix (Sinclair 1988:41).

The industry has also remained focussed on the extraction and minimal processing of timber resources which has traditionally been a natural source of comparative advantage for corporations operating in Canada and the United States. The natural comparative advantages of corporations in Canada and the United States have traditionally involved for strong economic returns and enabled the economy of the pulp and paper industry to remain steady up until the 1980s. At the same time, the success that corporations enjoyed in these traditional activities allowed North American corporations to remain blind to the need for innovation (Marchak 1991:4).

The faltering of the comparative advantage of Canadian corporations (further detailed in Chapter 3) is exposing the weaknesses of companies that have not diversified or modernized. As Maureen Smith observes "despite occasional proclamations that the revolution has already occurred, the industry in the mid-1990s is in fact capitalized, organized, mechanized and supplied in much the same ways that it has been throughout the latter half of the twentieth century. It supplies products that are largely indistinguishable from those it has supplied for many decades…" (1997:16). In contrast, the Communications, Energy and Paperworkers Union of Canada's *National Forest Policy for a Sustainable Economy* emphasizes the need for change, noting that value-added products including "…niche commodity grades such as TCF pulp and paper are the best option for maximizing economic benefits from our forest resource within sustainable limits." (CEP, p.27)

With the exception of the southern United States, where fast growing fibre and modern, integrated mills remain highly competitive, the North American softwood pulp and paper industry has reacted defensively to the challenges of the contemporary market. (Marchak 1991:5). Rather than exploring alternative means of improving their returns, executives have typically blamed timber costs, taxation levels, labour and energy costs and exchange rates.

The interviews and research completed to develop this chapter reveal that North American producers are subject to a broad range of competing pressures. While the paper industry was born from a culture concerned primarily with engineering and technological improvements, it is now dominated by a bottom-line (profit motivated) culture (Interview #22). For the North American paper industry to survive modern challenges it will need to shift its identity again and become a consumer and marketing driven industry.

The barriers that will be discussed in this chapter are as follows:

- Traditional structural relationships
- Capital intensiveness, rapid profits and risk aversion
- Insufficient support for innovation
- Producer perceptions of consumer interests
- Globalization and consolidation
- Conversion to ECF technology

The chapter will conclude with a series of *Recommendations for Action* that address the challenges and issues raised in the barriers. Ultimately, the production barriers to EPPs are the same barriers affecting the economic viability of the entire pulp and paper industry. Although there is a strong business case to create a niche for Canadian produced EPPs, the changes required are (in part) blocked by perceptions and traditional ways of functioning within the industry.

Change is essential for the North American paper industry to move forward and compete globally. However, for this transition to be successful, change must occur at all stages of the Paper Trail. As will be discussed in the proceeding chapters, distributors, government and consumers must all shift toward a position of support for change in the paper production industry.

Barrier 1: Traditional Structural Relationships

> *It is difficult to overstate the significance of how the forest products infrastructure and its linkages to external sectors supports and defines the corporate and organizational structure of the paper industry…taking the wood out of the paper may well be technologically feasible, but taking the paper industry out of the forest is something else entirely.* – Smith 1997:33

The Paper Trail begins with a myriad of relationships between those sectors involved in the production of paper. Through integration and historical relationships, the pulp and paper sector has been intertwined with forestry (raw material inputs), the chemicals industry (production inputs) and paper distribution companies (downstream product movement). These relationships bring with them the vested interests of the associated industries and have effectively institutionalized and maintained existing production technology, product lines, and material inputs.

Forestry Sector

The strongest linkages are understandably between the forest and the paper sectors. Since the 1870's, North American paper production has been closely tied to the forests and wood fibre continues to be the basis for the Canadian pulp and paper industry (Sinclair 1998). Table 1 illustrates the degree of integration between paper companies and timber companies.

Paper companies are often vertically integrated, and given that individual mill complexes may house both pulp and paper mills, this integration is particularly prevalent among pulp and paper companies. In the United States, pulp mills are largely developed as "on-site" feeders of raw materials to paper mills (some 80 per cent of pulp mills are physically integrated) (Smith 1997:26). Canada has more stand alone pulp mills, in part because wood pulp alone is a major export.

Table 1: Top 10 Paper Producers in Canada and the United States

(Integrated Forest Companies in italics)

Rank	United States (sales: 2001)	Canada (Sales: 2001)
1	*International Paper Co. ($26.3 billion US)*	*Abitibi Consolidated ($4.3 billion)*
2	*Georgia-Pacific Corp. ($25 billion)*	*Domtar ($2.8 billion)*
3	*Weyerhaeuser Co. ($17.5 billion)*[15]	Cascades ($2.1 billion)
4	Kimberly-Clark Corp. ($14.5 billion)	*Tembec ($1.7 billion)*
5	Proctor & Gamble (Paper) ($12 billion)	*Nexfor ($1.3 billion)*
6	Smurfit-Stone Container Corp. ($8.4 billion)	*Canfor ($1.3 billion)*
7	*Mead Westvaco Corp. ($8 billion)*	*West Fraser Timber ($1 billion)*
8	*Boise Cascades Corp. ($7.4 billion)*	*Norske Canada ($900 million)*
9	*Temple-Inland ($2.8 billion)*	*Slocan ($560 million)*
10	Sonoco ($2.6 billion)	*Doman ($500 million)*

Source: Price Waterhouse Coopers (2002). Global Forest & Paper Industry Survey. Vancouver: Price Waterhouse Coopers.

The Canadian paper sector remains closely tied to forestry through contractual relations and legal integration. The ongoing relationships between sources of forest fibre and pulp producers translate into a chain of industrial linkages that is difficult to alter. Smith comments that: "the vertical integration of the paper industry is much remarked, but the level of horizontal integration with other wood-based industries is less frequently mentioned. From an alternative materials use perspective – one interested in the substitution of wood by other fibre sources including both wastepaper and nonwoods – it…emphasizes the degree to which a complex and far-reaching infrastructure has been defined and elaborated by its relationship to a wood resource base" (1997:32).

These longstanding dependencies mean that substantial changes to the industry's processes are rarely viewed as an option in Canada. Integration has focused on the use of wood pulp, with pulp mills engineered for 100 per cent virgin fibre inputs from the design stage. Virtually all recycled papermaking capacity has come only by re-engineering existing (often older) mills (Interview #43). The relationships are further entrenched by the physical infrastructure required within the paper production industry (see Barrier 2 for more detail about capital intensiveness).

> "When we look at Canada, we see a big logging industry with interests against recycled paper"
>
> – European Recycled Paper Expert (Interview # 23)

Chemicals Industry

Although links between the chemicals industry and the pulp and paper sector are not as immediately apparent as those between pulp and paper and forestry, there is a history of longstanding economic ties and integration. Much of the rationale behind the large scale shift to ECF in North America may be explained by the vested interests of chemicals companies.

During the late 1980s and early 1990s, while European countries moved away from the use of chlorine derivatives entirely, the North American paper industry began its transition to chlorine dioxide (CHEM-info, 1997). This shift had much to do with the extent of investment in chlorine-based chemicals in North America (Smith 1997:140). While in 1990, European paper companies consumed approximately 4 per cent of the chlorine output of Western European chemicals companies, in the United States alone, the paper industry's consumption of chlorine made up 15 per cent of chlorine chemicals business (ibid: 135).

When pressures emerged for the pulp and paper industry to adopt chlorine-free technologies, North American chemicals companies joined forces in organizations such as the Alliance for Environmental Technology (AET), a Washington DC-based group which has included Canadian chemicals companies within its membership. In jurisdictions such as Maine, where legislation was proposed to eliminate paper mill dioxins, forestry companies and AET collaborated on campaigns to discredit TCF paper as a viable alternative (NRCM).

At the time of these lobbying campaigns, the chemical producers involved were selling over 1,000,000 tons of sodium chlorate annually to the ECF mills across North America, over 60 per cent of the North American sales of sodium chlorate. On its current website, AET claims that "ECF uses very selective chemicals which produce superior quality at the high brightness the market demands. Today's TCF uses less selective chemicals and consequently many producers have been unable to produce comparable quality at high brightness. Damage to certain fibre qualities may compromise the end use." (AET).

In some cases, the links between paper production and chemicals companies have involved direct integration. It was only in 1997 that Weyerhaeuser Canada completed its sale of Saskatoon Chemicals to a subsidiary of Sterling Chemicals Holdings Inc. However, along with the sale came the agreement that "Weyerhaeuser's pulp mills in Prince Albert and Kamloops [would] continue to purchase about 50 percent of Saskatoon Chemicals' output" (Puget Sound Business Journal 1997).

As Maureen Smith observed, this deal reflects the extension of integrated links that exist in the wood-based products industry. Ownership ties and strong business allegiances are clearly a factor in the decision of North American mills to adopt chlorine derivatives instead of moving toward TCF and closed loop technologies.

Paper Distributors

In many cases, large resellers (and increasingly retailers) are also part of the conglomerate companies involved in forestry and pulp and paper. Major resellers such as Unisource and Domtar are owned, or partially owned, by giants in the pulp and paper industry. In addition, there is a well established pattern of doing business which places the large scale distributors of paper in the role of customer.

With customers that are wholesalers, producers have focused their bottom line on volume of distribution, rather than creating products for the general consumer. As such, product differentiation and customer service have never been a major concern and there has been little incentive for the paper producers to innovate within their corporate culture and to address these issues.

The U.S. based Boise Cascades has entered into the retail (rather than reseller) market to a greater degree than other paper and forest products companies. Boise not only owns the Canadian chain Grand and Toy, but also recently announced it will purchase the American retail chain Office Max (Boise). Both chains sell paper and paper products as a significant portion of their businesses, guaranteeing Boise a place in the market. Although Grand and Toy is exclusively a Canadian chain, it was purchased by the American-based company and provides the main channel for Boise paper products in Canada (Interview #39).

Barrier 2: Capital Intensiveness, Rapid Profits and Risk Aversion

The issues of capital intensiveness, the need for immediate profitability, and risk aversion are linked within a single chain of consequences and collectively these form the heart of the corporate culture of large scale paper production in North America. So long as pulp and paper corporations hinge on massive investments in infrastructure and are simultaneously striving to ensure rapid profits for shareholders, there will be challenges with corporate responsibility.

The pulp and paper industry has some of the most capital intensive production complexes in the world. Costs for a new integrated pulp and paper complex can reach over $1 billion US. As Smith explains:

> *Existing pulp and paper manufacturers typically have several hundred million to a billion dollars invested in each of one to a dozen or more large efficient facilities, which must operate more or less continuously at near capacity…They cannot easily modify such facilities unless the existing capital investment has been fully depreciated* (1997:42).

The investment in current operating systems means there is an inherent aversion to reinvestment, even when this is what is required for mills to remain competitive. Peerla has noted that the lack of investment – in disinvestment in British Columbia pulp and paper industry (also attributable to reliance on volume of product rather than value-added products) has led to the demise of the industry's competitiveness (2000).

Due to its history and structure, the North American paper production industry is typically focused on a rapid payback time for investors. Immediate demands for profitability, a small national market and regressive tariff policies make it difficult to support innovations in technology or investment in research and development for value-added products. This is reflected in the amount of money spent on research and development in the pulp and paper industries. For example, while the average for most manufacturing sectors is four to five percent, the pulp and paper sector in the United States has spent only 1 per cent of its sales on research (Abramovitz & Matton 1999:58).

Typically, Canada has invested slightly more in research and development than its American counterpart. However, the elimination of federal research and development funding previously available under the Trudeau Liberal government has had a negative effect on this funding. In addition, as the Director of the Pulp and Paper Centre at the University of British Columbia observes, the slump in profits has led to a decreased investment in in-house research, increased pressure on Pulp and Paper Research Institute of Canada (PAPRICAN)[16] to provide applied research, and a "hold tight" perspective on education and research (Kerekes 2001).

This response is not only a reflection of high capital costs but also of the vulnerability of the industry to price elasticity and fluctuations in the economy. While office-grade papers are relatively insulated in comparison with newsprint and pulp papers, companies are not well protected from price shocks.

A combination of corporate culture, vulnerability to the global market and high infrastructure expenses, cause the industry to be highly risk averse. One product manager of a large American company observes that due to concerns about making changes in the costly operation systems: "there was a lot of what I call inertia because the organization, which is a large organization…was not programmed essentially, it was an engineering culture and so it was very risk averse" (Interview #22).

In the North American paper sector, risk appears to be defined as any process which involves new investment in infrastructure, changing raw material inputs, or research and development for products that are unfamiliar, unproven, or lack an existing market share. There exists a "management paradigm that [is] steeped in the construction of large complex, technical systems for the mass production of paper, thereby achieving economies of scale. The industry's world view has thus been long term in focus, technically and production efficiency oriented and, by design, risk-averse" (CPBIS 2003). Ultimately, this has meant that EPPs are deemed too risky for investment.

Barrier 3: Insufficient Support for Innovation

> *Many steps have been taken to minimize waste and improve eco-efficiency but the world does not have environmental problems because of a lack of environmental technology, services or systems. We have environmental problems because available solutions are not used effectively.*
> — David Anderson, Canadian Minister of Environment 2000

When examining how countries have been successful in transitioning pulp and paper production toward EPPs, a consistent factor has been that the innovators were motivated not so much by good will or conscience, but by the awareness that this choice made good business sense. The potential role of both government and industry itself in encouraging innovation reveals a significant gap in North American approaches to innovation in generating environmental products and technologies.

Innovation can be encouraged through regulation and incentive-based policies. The current government emphasis on the subsidizing of conventional approaches in the timber and pulp and paper industries in Canada does not encourage positive change. Provincial and federal governments in Canada have subsidized virtually every level in the production chain including: road building for timber access; exemptions from environmental laws; tax breaks for corporations; and below-cost timber sales from government owned lands.[17]

In other jurisdictions, the taxation system has served as a powerful vehicle for promoting change in the means of production in the industry. The Netherlands, for example, adopted the approach of gradual increases in taxes on water pollution. These taxes have effectively "prodded the industry to adopt cleaner technologies which in turn have led to major improvements in water quality. Producers who neglected to innovate and just passed the cost of the taxes on to consumers, found that customers switched to less expensive and less-polluting products" (Abramovitz & Mattoon 1999:56).

This system has led to outcomes different from those common in Canada, where companies attempting to innovate cannot survive financially and those producing conventional and environmentally damaging products have artificially inexpensive products through the externalization of costs. Overall reform of government policies, including the refusal to allow international trade agreements to control decisions about allowable impacts, is essential to ensuring that corporations are motivated to change their methods.

A number of European countries have also found incentive-based policies to be extremely effective. According to the director of the Confederation of European Paper Industries, industry in Europe has

made a substantial commitment to improving both its environmental performance and its economic efficiency (*Arwidson 2002)*. Some of the motivation for investment in environmental technologies is company based and some is due to national or regional regulations:

> *There will be incentives for responsible companies and industries, and tougher penalties for those who do not improve their environmental work. Targets will be set for a range of environmental performances, with opportunities to negotiate and flexibility in meeting them. Against this background, the industry must commit itself to reducing its environmental impact, leaving a smaller footprint* (ibid).

A combination of industry's recognition of the importance of investment in innovation and government support of this innovation (through both incentives and enforced legislation) has meant that a number of European countries are on the way to a healthy and sustainable paper sector.

Barrier 4: Producer Perceptions of Consumer Interests

> *My opinion on why recycled paper has not gained higher market share across different categories? The market just doesn't give a break to recycled papers. There is no accepted premium for recycled content papers by the average customer… Any change will be consumer driven,* [and will require changing] *perspectives to allow a premium for these papers. That is the bottom line!* — Technical Manager, Canadian Paper Mill (Interview #18)

The perception that consumers are simply not interested in recycled or chlorine free papers is a serious barrier to investment in production of EPP. Repeatedly in the interviews conducted by the Aurora Institute, producers expressed their opinion that the lack of demand for EPPs was the primary reason they had not yet achieved a more substantial market share.

Susan Kinsella of Conservatree confirms the perception that consumption of recycled content paper in the United States has actually decreased over the past 10 years. She observes that "a dozen recycled paper mills and three de-inking mills have closed within the past year and a half" (2002:1). This drop has occurred in the face of better quality and higher capacity and Kinsella warns that consumers must start to buy more recycled content or producers will lose faith entirely in the possibilities for these product changes.

With the bulk of their products going across the border, Canadian-based producers must be concerned with patterns of American consumption. How-

A recent project initiated in Quebec provides an example of how government could better support innovative practices. In May of 2002, Tembec Inc. began a substantial conversion of a former Abitibi-Consolidated mill in Chandler, Quebec (Pulp & Paper 2002). The mill will produce coated paper rather than newsprint.

Because the Gaspe region has a staggering rate of unemployment (over 20 per cent) the Quebec government is providing considerable subsidization of the project, including $90 million ($21 million of which will be interest free). A government of Quebec economic development company will also have a 25 per cent interest in the new mill. Yet there are no plans to change methods of production to include environmental technologies. Such a circumstance, where government is directly subsidizing development, is an excellent opportunity to support not only economic sustainability, but also environmental sustainability.

ever, it is difficult to ascertain the extent to which a lag in demand is attributable to the barriers faced by consumers (more in Chapter 6). With no promotional marketing campaigns, with high premiums, and with limited accessibility, it would be difficult to argue that EPPs have had a fair chance in the marketplace.

Despite these challenges, Home Depot and Staples are altering their purchasing policies to better reflect the interests of their customers. In their study of corporate purchasers, the Reach for Unbleached! Foundation "found a waiting market, frustrated by a lack of available products"(Broten and Ritchlin 1999). Among the customers that expressed an interest in TCF paper products were city governments (Chicago and Seattle), state governments (Oregon, Maine, Minnesota), credit unions and companies such as Kinkos and McDonalds.

Perhaps the biggest handicap for EPPs has been the reluctance of producers to actively promote them. In interviews, a number of producers emphasized that the two primary determinants for consumer decisions are price and quality. However, there is ample evidence in the marketplace to suggest that retail consumers will pay premiums for products they perceive to be of high quality – particularly if human health is involved.[18] The spectacular and growing success of the organic foods market provides a model for how EPPs might fare if they were marketed in ways that emphasized their own, special attributes instead of being marketed in the same manner as regular papers that have artificially depressed prices and better economies of scale.

Europe provides an encouraging lesson in how quickly markets can change. "The explosive growth of totally chlorine free pulp has slowed, but not before gaining close to 25 per cent of European sales in less than a decade…The companies producing TCF pulp are the only ones that have increased European market share while the pulp market has otherwise been stagnant" (Broten & Ritchlin 1999).

Barrier 5: Globalization and Consolidation

> *The growth of pulp and paper producers around the world has fundamentally altered the structure of the industry. Swedish, Finnish, American and Canadian companies are internationalizing their operations, buying into established mills or creating joint venture "greenfield" mills wherever they can obtain new fibre resources* – Marchak 1991:15.

As discussed in Chapter 3, the forces of globalization and consolidation are powerful, and they have an impact on product development and marketing. Globalization has further had a severe impact on the competitiveness of the industry. Southern hemisphere producers have the advantage of fast growing plantation fibres and many European mills have already implemented (and thus absorbed the costs of) the technologies to produce EPPs.

While globalization has been stripping the competitive advantages of softwood pulp, it has also increased the value of recovered fibre. This affects the capacity of Canadian producers to consistently access the necessary raw materials for recycled paper production at a reasonable price. Recycled paper is now a commodity item with global price drivers (Greenbaum 2001). Within this market environment, product diversification has not been viewed by Canadian producers as economically advantageous.

In the increasingly competitive world of pulp and paper, a niche market is essential. Rather than seeking ways to innovate and create distinctive products, the North American industry has blamed globalization for the low margins, weak productivity and shrinking competitive advantage. New competitors have been viewed as the cause for mill closures, corporate instability and shrinking of profits in the sector. Yet the solutions sought have been traditional ones: less demanding environmental regulations, lower taxes and

increased corporate control over the means of production. These "solutions" have been notably ineffective in protecting the industry from hard times.

Along with globalization, we have seen the emergence of transnational corporations, large scale buy-outs, mergers and the forces of consolidation occurring on a global scale (Abramovitz & Mattoon 1999:18). One of the results of this consolidation is that large production complexes are generally less open to new product uptake and tend to focus on cutting the costs of existing processes and products rather than the development and marketing of new products. Capital for expansion is most often used either to tap new markets with old products, or to access raw materials in new regions.

As discussed in Barrier 1, consolidation also involves high levels of vertical and horizontal integration. This integration means that companies have vested interests in maintaining the status quo. At the same time, particularly because the paper business requires such massive investments, large scale producers retain control of much of the mechanisms of production. One independent (alternative fibre) paper producer observes that for small producers to gain access to the means of production (such as paper mills) they require support from large scale producers who ultimately do not feel that it is in their best interests to support alternative paper production (Interview #3).

By gaining a stranglehold on production, consolidation also directly influences the amount of choice available to consumers. It is difficult for consumers to express their preferences for alternatives if they are unable to access them without significant effort, or if the cost differential is such that these papers are not able to compete.

Barrier 6: Conversion to ECF Technology

As discussed in Chapter 2, during the early 1990s there was considerable public debate around the issue of the pulp industry's use of elemental chlorine. Organizations such as Greenpeace brought concerns about the environmental impacts of pulp and paper production to the forefront (Thornton & Weinberg, 1994; Sonnenfeld 2000). Much of the North American industry responded to these concerns by changing their bleaching chemicals from elemental chlorine to chlorine dioxide (ECF).

Early North American studies showed that conversion to ECF processes would involve lower capital costs than the adoption of totally chlorine free technology. This research played heavily in the decision-making processes of the pulp and paper industry (Aumann 2000). The decision has since been described as "a twenty year investment for a ten year technology" (Smith 1997:140). The change to TCF would have involved minimal extra expense, particularly if mills had invested in reaching as close to closed loop (zero emissions) as possible at the same time. Today, TCF pulp sells at the same price as chlorine dioxide bleached pulp (Interview #45). Closed loop production is proving to be a money-saver in the long run:

> *Pollution prevention by modifying plant processes is a more cost-effective approach than 'end of the pipe' wastewater treatment. Louisiana Pacific has reduced wastewater flows, fresh water flows and reclaimed chemicals and waste heat formerly lost with the waste flows. Therefore, pollution prevention approaches cut operating costs* (Aumann 2000:3).

Unfortunately, because conversion to ECF technology has already been completed by the industry, the position on switching to chlorine free is all the more entrenched. While the industry continues to argue that this conversion has been sufficient to protect the environment, environmental watchdogs, scientists and citizen organizations remain concerned that the use of chlorine dioxide does not eliminate harmful chemicals.

With a few notable exceptions, the North American industry has remained uninterested in the elimination of chlorine derivatives from bleaching processes, focusing instead on building mills with chlorine dioxide capacity and huge secondary treatment facilities (Christie & McEachern 2000:11). Yet the reality is that "in addition to discharging zero chlorine products, an additional TCF benefit is the opportunity to implement the closed loop cycle option, which reduces fresh water usage and cuts bleach plant wastewater discharge to near zero. The conventional ECF bleaching offers wastewater reduction of only about 50 per cent..." (Aumann 2000:4).

Recommendations Regarding Production

1. Decrease vulnerability in the global market through product diversification and niche product development

   The production of low value paper products that lack in distinguishing characteristics will not provide the Canadian pulp and paper industry with long term viability. Investment in product diversification is necessary; meeting (and developing) the North American demand for EPP will contribute to the long term health of the industry.

2. Improve the economies of scale for environmentally preferable paper office papers so they are competitive with virgin and chlorine bleached products.

   Producers must make a substantial shift in production to EPP for the costs of production to drop and for EPP to compete effectively in the marketplace..

3. Develop a strong research and development partnership (government / industry) with a focus on environmental technology

   The export of environmental technologies can be economically valuable in itself. Canada must reassert itself as an innovator in the pulp and paper industry by encouraging the development of environmental technologies that can be applied in the industry for cost savings. Technological innovation that focuses on incremental improvements of environmentally hazardous processes should not be fundable.

4. Increase customer knowledge about EPPs and develop customer loyalty to identifiable products

   Industry and government must invest in developing a market for high quality "Made in Canada" paper products. Ensuring customer loyalty and knowledge about EPP requires consumer education and marketing. Investing in a marketing campaign that highlights how the Canadian industry is distinguishing itself and why EPPs are superior will generate consumer demand.

5. Integrate "alternative" fibres into "mainstream" production

   While recycled fibre is a partial solution to replacing unsustainable fibre sources (softwood timber), Canada lacks sufficient internal supply of recycled fibre. Heavy reliance on imported recycled fibre is not an economically sound solution (nor does it employ Canadians). A sound solution for producers is the increased use of Canadian grown environmentally preferable alternative fibres.

6. Develop strong incentives for producers to shift to environmentally preferable production

   Rather than focusing exclusively on the negative impacts of industry pollution, incentive-based policies are required. Economic incentives (such as tax breaks, subsidies and rewards for innovation) encourage producers to make change because they see the dollar value in altering their processes.

7. Phase in regulations that are based on maintaining whole ecosystem health; enforce these regulations

   As industry and government begin to refocus the pulp and paper industry on economic sustainability, stronger regulation must be phased in to protect the health of Canadians and Canadian ecosystems. For regulations to serve their purpose, they must be enforced. These regulations, like the incentives, should have monetary consequences for producers, and should be substantial enough to encourage environmentally preferable behaviour along the production, distribution and consumption chain. Incentives and investment in the sustainable economic development of the industry should considerably reduce industry violation of regulations.

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CHAPTER FIVE

Distribution Barriers to Environmentally Preferable Papers

We would certainly be looking at the paper manufacturers [to provide more information about environmentally preferable papers.] *But more so, it would be wholesalers – the people that we're purchasing from. I think it's incumbent upon them to get that information out.* – Purchasing Manager, Ontario School Board (Interview #9)

There are currently a number of barriers facing paper distributors – wholesale and retail – wishing to market EPP. Some of these barriers, like those facing producers, are derived from the corporate culture of the industry. Others are dependent upon producers and in some cases consumers because ultimately, distributors are the "middle men" – navigating between the producer and the consumer (VP of Sales and Marketing, Interview #7).

It is this intermediary role that has made distributors virtually invisible in much of the writing and research about the forestry and pulp and paper industries. Much has been said about the producers, but little discussion has taken place around how products actually reach the market. For that reason, the bulk of the evidence presented in this chapter is anecdotal – based on the experiences and knowledge of those working as paper distributors and collected through interviews for this report. The relationship between suppliers and both bulk consumers (printers, companies, government and other institutions) and individual consumers is an important aspect of the Paper Trail.

Despite an increase in direct 'mill to retailer' sales over the past decade, paper producers still treat paper resellers as their primary clientele (Hayhurst 2001). Indeed through processes of consolidation and vertical integration, distributors in North America are increasingly tied to producers – creating a chain of connection that dictates production priorities, even when consumers express interest in different kinds of products.

It is important to distinguish between paper *resellers* and paper *retailers*. *Resellers* buy in quantity from producers and market to bulk consumers and to retailers. They include large companies such as Unisource (partly owned by Georgia-Pacific Corp) Buntin Reid (owned by Domtar Inc) and Coast Paper (a subsidiary of an Australian-based company, Paperlinx).[19] Resellers do not add value to paper products; they warehouse them and provide a customer relations role for producers. There are often deeply embedded relationships between resellers and paper producers and traditional ties to producers with a focus on virgin fibre pulp help explain the reluctance of resellers to promote EPPs.

There is considerable diversity amongst *retail* suppliers who, while they may sell in bulk, also deal directly with end-users through stores. The most substantial retailers are the large [big box] outlets such as Office Depot, Staples, Grand & Toy, and Kinko's. These businesses have tended to focus on convenience and price when making their purchasing decisions (Interview #21). Alternative distributors such as independent retailers (Grassroots, Earth's General Store), wholesalers (Paper Choice Environmental Paper) and buying clubs (see Appendix B), though they represent a small portion of the current market, do satisfy a portion of consumers seeking environmentally responsible products. However, the alternative distributors remain comparatively difficult to access and the effort required on the behalf of consumers limits their appeal.

Barrier 7: Ties Between Resellers and Producers

There are varying degrees of connection between paper distributors and producers of pulp and paper. Many of the large resellers of paper in North America are linked through ownership to producers of pulp and paper. With many retailer suppliers there is a less direct connection. However, some retail chains, including Grand & Toy and Office Max, are also owned by forestry/pulp and paper companies (Boise Communications Dept. 2003).

The degree to which large scale resellers are economically tied to the producers of forestry products inevitably influences their degree of product diversification and interest in promoting of environmentally preferable products. As one Sales and Marketing VP explains: "We tend to promote the brand that the mills have or, alternatively, have them brand for us…If you are going to market 'Mike's Copy Paper' versus 'Xerox', you will have a tough time gaining the market awareness that Xerox already has" (Interview #7).

Two suppliers of paper in Canada, Domtar (Buntin Reid) and Unisource, are also companies that are deeply invested in other aspects of the industry. For example, "Domtar manages close to 36 million acres of forest land in Canada and the United States, and produces lumber and other wood products" (Domtar 2003). Similarly, Unisource is 40 per cent owned by Georgia Pacific Corp, which is a global corporation based in the United States that produces wood building products and chemicals utilized in the paper industry and is the second largest paper producer in the United States (Georgia Pacific 2003). In light of these interrelationships, it is hardly surprising that these distributors do not pay significant attention to recycled and chlorine free paper production.

Consolidation is also a factor in the types of papers carried and marketed by distributors. In June 2001, Vancouver-based Coast Paper was purchased by the Australian company Paperlinx Limited, a company focused on the global distribution of printing and office papers (Coast Paper 2003). As result, Coast paper is now vertically linked to a company with paper manufacturing operations and (in addition to other stock) now sells papers produced in Australia.

For resellers and distributors that are not formally integrated with producers, there are often close ties in other ways. The VP of Sales of one major distributor observes that "In our business we don't have anything but handshake agreements. We will buy many millions of dollars worth of paper a year from a dozen mills around the world and it's all done on an understanding that we will continue to buy in quantity and they will continue to produce with this range of pricing and service." (Interview #7).

These relationships between stakeholders are one of the central reasons for the neglect of the EPP market share. While most of the large scale paper producers do offer a line of recycled paper, these efforts remain minimal (and often difficult to access) in comparison to "mainstream" papers. In return for guaranteed sales, paper producers pass on control over advertising, pricing, product placement, and other resale issues, to distributors.

Domtar's recent efforts to improve their environmental record by adding a new paper line that is FSC certified may indicate, however, that producers/distributors are increasingly aware of consumer demands for environmental responsibility. Indeed, the Senior Vice President of Pulp and Paper Sales and Marketing for Domtar claims that "Behind this unique line of [FSC approved] paper lies a completely different way of developing new products: one that is entirely driven by our customers and our partners" (Kobrynsky 2002).

Barrier 8: A Focus on Marketing Traditional Office Papers

Much of the marketing of office paper is the responsibility of resellers and retailers. Paper advertising tends to focus on the qualities of virgin fibre papers, such as extreme brightness/whiteness and low cost. Within a market where these are the most widely lauded attributes of paper, EPPs are at a disadvantage. Unless marketing strategies are diversified to emphasize the attributes of EPPs, they cannot compete effectively.

One Sales and Marketing representative explains that "we'll stock [EPP] and promote it to those who want to buy it. We have not found a large enough audience that would have sufficient interest in volumes that would warrant us spending thousands of dollars putting together a promotion piece" (Interview #7). As a marketing approach, this is backward logic – without effective marketing, it is highly unlikely that the demand for EPPs will increase.

While distributors argue that the demand from consumers has been insufficient, promotion and advertising for virgin sourced bleached paper are the daily fare of the paper market. Although recycled totally chlorine free papers can be made bright enough for virtually all office and professional uses, they are generally not as bright as those made from virgin pulp and bleached with chlorine derivatives.[20] While EPPs can be made white enough for even the advertising industry, many of the marketers of office paper are convinced that the level of brightness required is ever increasing – so much so that one Sales and Marketing representative termed it a "fetish" (Interview #22).

This emphasis on distinctions between brightness levels that are almost indiscernible may also signify a response to growing global competition.

> *Many paper companies have felt that the brightness of a paper was a way to appeal to more customers so there has been a drive to push brightness higher and higher by different companies. White* [has] *huge appeal…it feels heavier, it looks important and that's important for, say, lawyer's offices and other organizations…*[Another] *major reason* [for this focus] *is that eucalyptus pulp from the south is easy to put very bright and with new pulps coming on line from the south…there's a real…challenge from the south* (Interview #22).

"The white issue is a marketing scam, primarily…Mills [were] struggling for a niche and brightness became one. This makes it harder on the recycled pulps because they are easier to make at lower brightness."

— Paper mill production technology expert (Interview #42)

"Brightness is primarily a marketing differentiator probably built more by the paper business itself, than for any other reason. This seems like something with no bearing on most common uses of office paper. In Germany, bright white paper is considered environmentally unfriendly and the copy centres have paper with a blue-ish tint."

— Paper company representative (Interview #01)

Rather than distinguishing their products and finding a niche, North American producers and distributors, are attempting to compete in an area where they lack the competitive advantage and where it is actually very difficult for the consumer to distinguish one product from another.

The question raised by current advertising is why distributors have not championed EPPs and tried to market them in a way that plays to product strengths. In a survey of members of the Purchasing Managers Association of Canada (PMAC) conducted by the Aurora Institute , nearly 30 per cent indicated that their supplier did not actively market recycled and/or chlorine-free office paper products to them and a further 20 per cent were not sure. Approximately 30 per cent indicated they received marketing information on recycled paper only; 21 per cent on both recycled and chlorine-free paper (see Appendix D, question 12).

There are exceptions to current marketing practices, as a representative for a large paper company explains:

> *Chlorine free and recycled has been found to be more successful in the United States, but they entirely chalked that up to the work of Archie Beaton* [from the Chlorine Free Products Association] *in advertising these things. The…* [paper line] *that they have as their high end recycled line is advertised by going to different pressure groups, going to trade shows, dealing closely with the CFPA which does its own advertising and sending out sample kits for people to try on the equipment* (Interview #25)

This explanation follows the logic that a product that is well promoted and marketed stands a much better chance of gaining market share. Yet according to interviews with major distributors, another deciding factor in the neglect of EPPs is that they are not viewed as sufficiently profitable. In interviews, the primary focus from distributors in terms of moving EPPs off the shelf was consistently the issue of price – distributors consider the premiums demanded for EPPs to be too high for customers to demand it in any quantity.

As a result of all of these factors, EPPs have been relegated to 'boutique' status in the minds of resellers, leading to weaker product positioning, lower advertising budgets and little incentive to price EPPs competitively.

Barrier 9: Pricing, Economies of Scale and Consumer Demand

> *The biggest issue – number one – is that recycled is the final and lowest criteria considered by general consumers* — Product Management/Marketing rep for large distributor (Interview #22)

In the past there were well-founded concerns about the quality of certain EPP brands. Often de-inking mills and recovery loops were not advanced enough to provide a consistent product that would win over customers (Kinsella 2001). Primary concerns related to the strength of papers, the whiteness and its functionality in office equipment. However, today the technology is advanced enough that the largest of North American pulp and paper corporations are integrating them into their production systems (Kenny 1999).

As discussed in Chapter 4, much of the concern about the quality of EPP is left-over from times when the technologies in producing the papers were not as well developed.[21] However, some retail distributors observe that consumers are still uncertain about the quality of EPPs and that this contributes to limited demand (Interview #39). The issues of consumer perceptions and demand will be discussed further in Chapter 6.

A more commonly perceived barrier amongst distributors is that of price. Retailers and resellers alike consistently argue that consumers are "simply not willing to pay the premium"[22] This becomes a problem for distributors, who are attempting to sell what are considered to be "specialty" products that cost more but do not have immediately apparent distinguishing characteristics.

A sales representative for recycled office product in the United States explains: "It is really a chicken and egg argument then. The industry will not change [without]… new demand and consumers will not line up to create demand until prices drop through added capacity and increased economies of scale" (Interview #36). This standoff places distributors in the middle ground again – with insufficient consumption and insufficient production to sell EPPs on a larger scale.

The problem begins with producers where "the amount of quality control necessary in small runs and lack of economy of scale adds to the cost" (Interview #22). The challenge of economies of scale is less of a concern for smaller scale manufacturers and small independent retailers who are successfully linking with one another to sell EPPs. In these relationships, a different scale of interest can be managed more effectively. Indeed one environmental products retailer observes that customers are extremely happy to find a store that provides EPPs (Interview #32). The same retailer suggests that in a small business there is an opportunity to educate customers while they are in the store.

This is not a role that larger distributors are willing to play in order to address demand. The Service Manager for a large retailer observed that:

> *The workers* [here] *are not given access to much more information than is written on the packaging of the paper. If customers are adamant with questions, the sales person can call a buyer back east, but even they do not often have the answers. Purchasers usually give up and either don't buy the paper, or more likely,* [feel that] *they tried their best and purchase whatever is available. Either way,* [the big box retailer] *doesn't care.* (Interview 21)

The current production scale for EPPs – small runs, which brings price premiums for customers – is perceived as a significant barrier for large resellers and retailers. However, the extent to which retailers themselves play a role in the premiums paid by customers remains unclear. Some of those interviewed insisted that premiums were entirely dictated by production costs and others suggested that distributors themselves were increasing the prices in order to make handling the smaller volume papers more potentially profitable.

Recommendations Regarding Distribution

8. Shift the marketing focus to the promotion of EPPs

   This means providing EPPs with the benefits of good advertising, including generating educational and promotional materials about EPPs, ensuring that product placement is high profile, stocking products regularly (to guarantee supply) and directing customers, particularly corporate and institution buyers, toward these products.

9. Educate management and staff of distributors about environmentally preferable papers so that, in turn, consumers may be educated.

   As discussed in Chapter 6, education of consumers is fundamental to shifting the market for EPPs. Distributors can play an important role because they have regular direct contact with customers.

10. Encourage producers to provide quality papers with a basic minimum level of environmental attributes

The only way to significantly alter the economies of scale of EPPs is through the purchasing of sufficient volumes. Distributors that make a commitment to EPPs can provide a huge boost for their production.

11. Stock papers from small and alternative paper producers

While perhaps an unlikely option for those distributors that are linked through ownership to large pulp and paper companies, in order for small EPP producers to survive, they too require access to consumers. By selling these papers, distributors can raise awareness with consumers about the range of options available.

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CHAPTER SIX

Consumer Barriers to Environmentally Preferable Papers

> *As with almost any other product, consumers of paper sit at the summit of a very complex network of activities. They have been buffeted by gales of well-intentioned, often conflicting or irreconcilable advice: buy recycled; buy tree free; buy TCF, ECF, CCF (clear-cut free); buy lower-brightness paper; buy lower-basis-weight paper (but not if it jams in the copiers, and/or buy new copiers); buy mechanical pulp content office paper (uses less trees); don't buy mechanical pulp-content office paper (complicates recycling programs); buy local; buy American; buy union; buy less; support innovative mills; support progressive distributors; boycott environmental villains; negotiate with your suppliers; negotiate with their suppliers etc.* — Smith 1997:250

Consumers are crucial stakeholders in the Paper Trail and are widely perceived to be responsible for driving change in the marketplace. Producers and distributors argue that without demand for EPPs, there will be no growth in market share. Similarly, Gleason observes that "a broad and sustained shift by major purchasers now will stabilize the market, reset the demand and production to spiral in a positive direction, and ultimately, encourage investments that expand the market" (2002:1). However, while consumers do play a pivotal role, change in the market will only come about through a broader effort involving the entire Paper Trail.

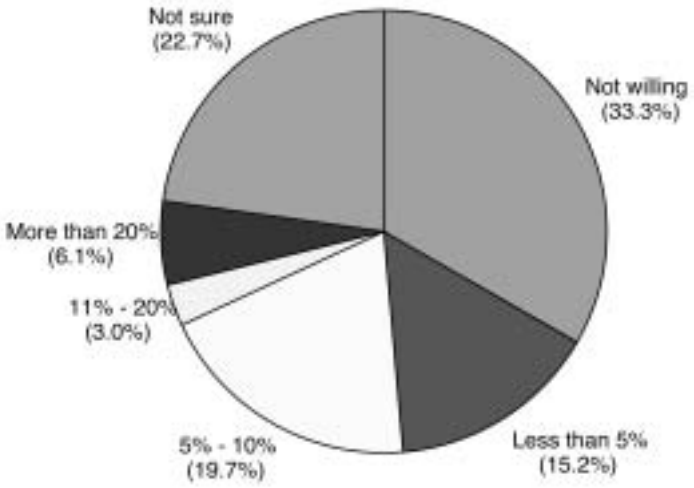
Trends in the consumption of printing and writing paper reflect the industry marketing strategy of developing products that are specific to particular office uses. "So, whereas in the past consumers simply bought copy paper, now suddenly we see copy paper, multipurpose paper, laser paper, ink jet paper, coated laser paper and several other permutations" (Conservatree 2000). These new incarnations of office paper marketed based on their degree of brightness do nothing to improve the market share of EPPs. Nonetheless, consumers are already having a positive impact.

As mentioned in Chapter 1, a growing number of those in the printing business are utilizing EPP. During the past three years there has been a growing trend within the Canadian book publishing industry towards EPPs. Thirty-six publishers have formally committed to eliminate their use of papers originating from ancient and endangered forests. In response to Canadian book publishers' requests, eight new publishing grade papers have been developed (Interview #46). The Association of Book Publishers of BC has gone so far as to produce a booklet to guide its members in purchasing EPP. The process of producing the publication has increased awareness with printers, publishers and mills across the country (2002:3). At the same time, large retailers such as Staples and Kinko's are changing their purchasing policies in response to consumer demand (ForestEthics 2002).

These examples indicate an increasing consumer demand for EPPs but this demand has yet reached the level needed to create a fundamental shift in the industry. Moreover, widespread demand for EPPs will not materialize without consumer education. The environmental responsibility of production processes is only one issue for consumers to consider; survey results confirm that successful products must also be perceived to have high quality and competitive pricing. EPPs do have the advantage of a distinguishing quality in a marketplace of similar products.

Consumers of printing and writing papers fit into two categories, those who purchase paper for their workplace – often professional purchasers for government, schools or private companies – and those who buy paper for use in the home. The former will be referred to throughout this chapter as "bulk" or "institutional purchasers" and the latter as "household consumers". Information about household consumers was gathered through the Aurora Institute/Ipsos Reid omnibus survey (see Appendix C for complete survey results). For bulk purchasers, one-on-one interviews were conducted, along with a comprehensive on-line survey of 130 members of the Purchasing Management Association of Canada (PMAC) (see Appendix D for complete survey results).[23] Results of the surveys provided much of the information presented in this chapter. [24]

Figure 1: Premium Institutional Purchasers are Willing to Pay for EPP



The barriers to consumer purchasing of EPPs are identified below:

- Price premiums
- Lack of education about EPPs
- Insufficient labeling and product information
- Limited use of procurement policies

Barrier 10: Price Premiums

A significant barrier for consumer demand for EPPs is concern about high prices. The Aurora/Ipsos Reid survey of consumers revealed that price is a central issue in paper purchasing decisions. However, price tends to be more of a defining factor for bulk purchasers responsible for meeting budgetary constraints than for individual consumers.

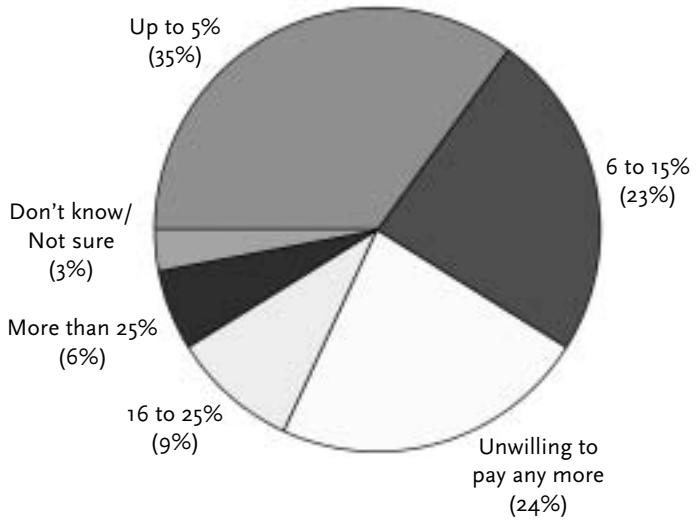
Approximately 44 per cent of both institutional and individual consumers surveyed who purchase computer and office paper indicated that price was the primary consideration in making paper selections and 50 per cent of institutional consumers stated that higher prices were the main reason for not purchasing recycled or chlorine free papers (see Figure 1 and Appendix D, question 23). As a publishing representative explains, "Price – it's the only barrier. If it [were] the same price, we would use nothing else" (Interview #12).

When asked whether they would be willing to pay more for EPPs, approximately 30 per cent of institutional purchasers stated that they were willing to pay at least a 5 per cent premium and 9 per cent of institutional purchasers were willing to pay over 10 per cent more for EPPs (see Appendix D, question 27). However, 22.7 per cent responded that they were not sure if they would pay more, which suggests that appropriate marketing might have a significant impact on overall EPP purchasing rates. Approximately the same number were unwilling to pay any extra premium at all, often due to fiscal constraints. According to the purchasing manager for a municipality in British Columbia, "When you take a climate such as BC, which has been hit economically, price-conscious consumers tend to speak with their budgets" (Interview #15).

While consumers are price conscious, the survey revealed that they are not particularly attached to brands or other identifying characteristics of paper.[25] For example, a significant number of those making bulk purchasing choices expressed ambivalence about the type of paper they procured and less than half of institutional purchasers could name 'their' brand, which leaves the door open for marketing EPPs.

In the case of household consumers, the findings of the Aurora Institute/Ipsos-Reid survey are remarkably similar to those of previous studies (IMPACS, 2001; Pollara, 2002). Of those Canadian households that purchase office papers, 73 per cent indicated willingness to pay a premium for EPPs. A significant 23 per cent indicated that they would pay up to 15 per cent more, while an additional 34 per cent stated that they would pay a 5 per cent premium. 24 per cent were unwilling to pay more for EPPs than for virgin fibre papers (see Figure 2 and responses to question 4 in Appendix C).

Figure 2: Premium Retail Consumers are Willing to Pay for EPP



The willingness of household consumers to pay more is confirmed by responses from professional procurers who indicated that, despite the cost savings imperative in their workplace, they would pay more when buying paper for personal use. These numbers are encouraging, particularly given that the price differential for papers containing recycled content is decreasing. In the United States, the price differential is reported to be in the range of 3-5 per cent (Gleason et al 2002:3). However, the fact remains that actual purchasing practices do not correspond with the preferences of purchasers when polled on the issue. The actual retail market appears to correspond more realistically with that segment of respondents that would pay more than 25 per cent for EPP. This may reflect other factors, such as lack of availability of EPPs in some shops, the difficulty of finding EPPs in other shops where regular papers have larger shelf space allocations, and other barriers discussed below.

Overall, the results of the PMAC survey point to challenges in engaging institutions and businesses to think about paper purchasing as more than mere dollars and cents. Buy-in from bulk purchasers is a crucial link in increasing the market share of EPPs. In addition to price, consumer myths about quality and availability of EPPs persist. 33.3 per cent of institutional purchasers consider quality to be very important when

considering whether or not to purchase EPPs (see Appendix D, question 14). It is well accepted today that, as a result of technical advances, there is no discernable difference in the quality of EPP and virgin papers. Similarly, papers with some percentage of recycled content and chlorine dioxide bleaching are readily available from most suppliers. Yet, consumer myths about these issues remain strong. Survey results indicate that marketers and technicians play a significant role in perpetuating these consumer myths (see Appendix D, question 21). 59.8 per cent of institutional purchaser respondents indicated that they had heard complaints about recycled and chlorine-free papers from office machine distributors, maintenance technicians or office paper suppliers.

Barrier 11: Lack of Consumer Education About EPPs

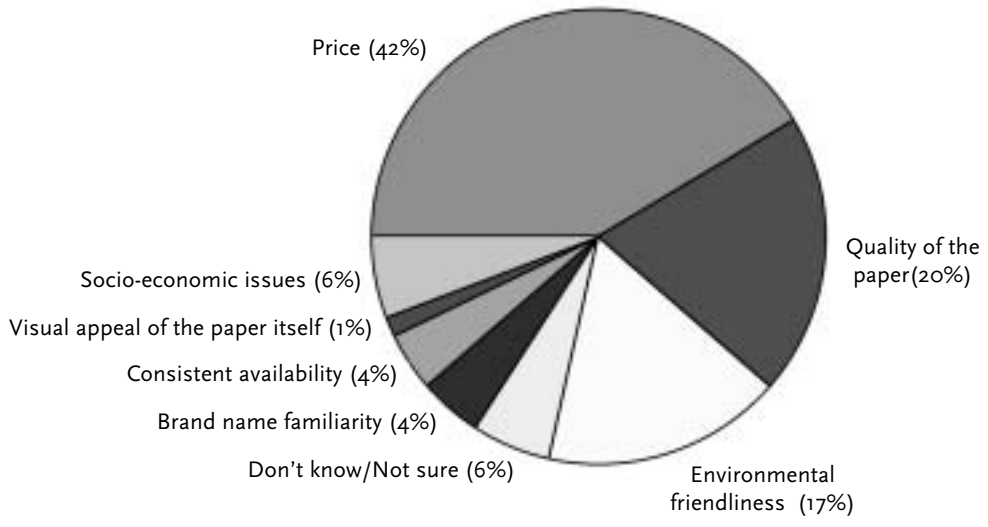
One of the recommendations discussed in Chapter 5, was the importance of ensuring that those selling EPP have knowledge of their products and can assist consumers in making informed decisions. Directly connected to this challenge is the problem of insufficient consumer education (Kinsella 2001).

Education with regard to EPPs does not refer exclusively to environmental attributes (or lack thereof). Rather, it is a broader issue addressing the importance of conscious and informed decision-making in the selection of consumer products. This means coping with significant disinformation – specifically about quality and environmental implications – when it comes to EPPs.

Repeated surveying of Canadian consumers suggests that they do prioritize environmental attributes of products when making their purchasing decisions. Yet the PMAC survey found that less than 10 per cent of institutional purchasers felt that recycled content was their top priority (see Appendix D, question 14). Similarly, only 17 per cent of household consumers felt that "environmental friendliness" was an important purchasing criteria of computer and office papers (see Figure 3 and Appendix C).

In light of these findings, the education of consumers seems all the more significant. Maureen Smith observes that, "ironically, although the connection between trees and paper is generally recognized by the public, it has long had a sort of mythic status – one rarely informed in terms of how much timber, from where, and for what products…Clearly, a connection needs to be clarified" (Smith 1997: 4).

Figure 3: Most Important Issue for Retail Consumers When Purchasing EPPs



Those areas of the market that have seen substantial shifts in consumption (again the organic food industry is a good example) are those that have been clearly linked with their environmental impacts. For obvious reasons, the pulp and paper industry has not advertised EPPs in ways that alert consumers to the harmful side-effects of their other, larger product lines. A third of institutional respondents believe that industry, including retailers and printers, should promote and advertise EPP more (see Appendix D, question 35). This lack of promotion also puts the industry on the defensive, even when some producers are making an effort. As a representative of an industry association explains,

> *One of the major reasons that recycled paper hasn't grown as a market is that there has been little celebration by or of the industry of its efforts in this regard…Though we could fill BC place once a month with our paper recovery system, we haven't done anything to show the consumer that the paper they send to the curb each week actually will come back to them in a newspaper in 3-6 weeks time. That would show them that the system is actually working* (Interview #20).

There are exceptions to this lack of information. A purchaser for a British Columbia municipality observes that "one company…has been able to put together a table saying that if you buy 1 ton or 2 or 3 tons of this paper that you are saving X amount of trees and Y units of energy. So, this company is trying to show that if you buy at this level you can make a difference" (Interview #15). This kind of information is advantageous for the consumer, but also benefits the producer because it is positive public relations for their company and their product.

If consumers do not make a direct and immediate link between their choice of product and an outcome, they are unlikely to be moved to change their purchasing behaviours. It would appear that many purchasers of paper are not even aware of what they are buying, let alone what its impacts might be: between 30 per cent and 40 per cent of institutional consumers surveyed were unsure whether there was any discernable difference between recycled and standard office papers in terms of quality of printing and photocopying, paper dust, or general appearance (see Appendix D, question 24).

There also appears to be a lack of awareness among consumers with respect to the environmental qualities of the paper they purchase. Approximately 37 per cent of institutional procurers could not say what percentage of their office papers contained a minimum of 30 per cent recycled content (see Appendix D, question 19). Of those who indicated that they know whether their paper contains recycled content, 25.4 per cent of institutional respondents claimed to be purchasing paper with 50 per cent or more post-consumer recycled content. Retail consumers exhibit even less awareness, with 61 per cent stating that they purchase paper with more than 20 per cent post consumer recycled content (see question 2 in Appendix C). These claims are not substantiated by sales or, in the case of institutional purchasers, with the recycled content of many of the widely available office papers.

Susan Kinsella offers several potential explanations for the discrepancies between consumer perceptions and market realities, one of which is that many consumers simply assume that most office papers already contain recycled content (2001). This observation is supported by the Aurora survey results. However, this perception does not reflect the reality of production, where although most companies make one or two types of paper with recycled content "most paper companies own many mills [and while] one or two might be making recycled…the rest are making a lot of virgin paper" (ibid). Other consumers simply assume that the market for recycled paper is healthy and that their purchases won't make a difference.

Survey findings suggest that many consumers are making purchasing decisions with limited information. However, for those consumers seeking information, it is difficult to find. As discussed in Barrier 12, industry jargon and labelling practices with regard to paper products do not generally alleviate consumer confusion.

While some responsibility for consumer education falls to industry, environmental non-governmental organizations (ENGOs) and government also have a role to play. Consumers looking for more detailed information about paper production and its implications have had a combination of too much information with very little clarity to assist them in making environmentally sound purchasing choices. A majority of institutional respondents feel that it is important for government and environmental organizations to educate buyers about EPP (see Appendix D, question 35).

A number of ENGOs have recognized this problem and generated a mutually agreeable set of goals in the document *A Common Vision* (Alliance for Environmental Vision et al 2002). The document is a turning point in efforts to alter the EPP market because although the document does not make reference to accountability measures such as third party auditing of post-consumer content, deinking and chain of custody for post-consumer fibre, or the pulping and paper making process, it does propose a collective effort to making change, (see Appendix E for text). In providing educational materials for consumers, consistency and reliability are paramount. An effort to develop constructive partnerships (between government, ENGOs and industry) would undoubtedly improve consumer knowledge.

Barrier 12: Insufficient Labelling and Product Information

> *The paper has to become more identifiable. EPPs have to be recognized because people don't have the time to do leg work on these things and they don't know who to trust.* — Provincial government policy analyst (Interview #4)

Along with the issue of education, comes the importance of clear product information about office papers. While not all paper producers are the same, many have failed to make EPPs obvious to the consumer, thus making it a challenge to understand what type of paper to purchase and what the relative environmental impacts of that paper might be.

In a description of their commitment to promote environmentally sound paper purchasing policies within their membership, the Association of Book Publishers of BC (ABPBC) notes that they had "no idea how complex the task would be. Identifying the actual recycled content of the papers was not always easy" (2002:3). This statement affirms that even if consumers are interested in purchasing EPP, they might encounter difficulties in the marketplace. The ABPBC's *ecokit* goes on to provide a substantial list of "terms [that] are indispensable for understanding how to choose environmentally friendly papers" (ibid:14). Without a guide like this, the average consumer faces a considerable challenge in making an informed purchasing decision.

While certification programs have the potential to be an important resource both for producers and for consumers, it is extremely important that certification be reliable and that consumers be able to identify legitimate programs. As the number of certification programs grows, there is a danger that certification will fail to assist consumers in distinguishing between products (Abramovitz & Mattoon 1999: 48). In addition, it is increasingly difficult for consumers to discern how different certification programs work and what they mean.

Currently, despite an array of competing certification schemes covering various aspects of the pulp and paper and forest production chain, there is no single (i.e. reliable, third-party independent) certification system for paper products in Canada that sufficiently addresses all of the important elements of EPP

production. The federal government's Environmental Choice Program currently provides the most recognized standard for printing and writing papers. However, unlike similar retail certification schemes in Europe, Environmental Choice's certification guidelines do not specify minimum recycled content requirements and are not recognized or understood by consumers.[26]

Credible efforts intended to provide independently verified reporting on a number of paper production criteria, such as the Environmental Profile Data Sheet (EPDS) developed for the Canadian Pulp and Paper Association by TerraChoice Environmental Services Inc., (Herbert 2000), have had negligible market penetration and recognition. At the same time, forest certification programs such as the Forest Certification Council (FSC), Sustainable Forestry Initiative (SFI) and Canadian Standards Association (CSA) focus on environmentally responsible forestry and do not assist the consumer with recycled content, alternative fibres or bleaching processes.

To venture further into a discussion of certification is beyond the scope of this report, suffice it to say that the certification of products is only relevant when consumers have knowledge about, and confidence in, the certification system and its requirements.

In addition to certification and labelling, environmental organizations, industry and government have not been successful at messaging about the environmental benefits of EPP to consumers. The purchasing decisions of a majority of retail consumers (85 per cent) could be influenced by greater information regarding the various environmental benefits of EPPs (see Appendix C, question 3). While there is no single environmental issue that concerns consumers of paper, respondents indicated that their willingness to purchase EPPs could be influenced by clearer environmental messaging.

Barrier 13: Limited Use of Procurement Policies

Paper purchasing represents more than 10 per cent of the office supply costs of a majority of respondent businesses and institutions. However, as a staple commodity, it appears to receive little attention. In their 1998 report about creating a sustainable paper cycle, the International Institute for Environment and Development recommends that bulk purchasers "integrate paper consumption levels and specifications into environmental management policies and systems, carrying out audits of their paper use" (1998). Most (i.e. 70.5 per cent) of institutional purchasers do not have a written procurement policy that specifies the use of recycled and/or chlorine-free paper in the criteria which guides their decisions (see Appendix D, question 13). Only 15.9 per cent of respondents have policies that refer to recycled content and a paltry 5 per cent include mention of chlorine-free.

Seventeen per cent of purchasers have general guidelines that are provided in corporate social responsibility codes. However, few bulk purchasers appear to be receiving the kind of guidance that a sustainability focused procurement policy would provide.

PCF Certification

Rolland Inc.'s New Life DP 100 copy paper was the first copy paper to receive the Processed Chlorine Free (PCF) certification mark from the Chlorine Free Products Association (CFPA). The paper is made from 80 per cent recycled content, 60 per cent post-consumer waste, 20 per cent virgin content, and is totally chlorine free. The CFPA's TCF/PCF Certification Mark requires paper to contain amounts of recovered and post-consumer fibres that contain at least 30 per cent PCW, pulp that is totally chlorine-free, and have not been r-bleached with chlorine-containing compounds (CFPA 1998).

In the broader context, it is the bulk purchasers who possess the buying power to create change in the pulp and paper industry. Government (local, provincial and federal) has a particular responsibility to set an example and to support sustainable production practices. The survey findings indicate that household consumers strongly believe that government has a leadership role to play in supporting consumer education and procurement of EPPs. 77 per cent of household consumers feel that government should be setting an example through EPP purchasing and 38 per cent feel that the Canadian government should purchase EPP at all times (see Appendix C, question 5).[27] A significant number of institutional consumers also believe that government should mandate EPP purchasing by public organizations and increasing production by producers (see Appendix D, question 35).

Although some governments have taken great strides in this area[28], others are either lagging far behind or have failed to create policy that is consistently applied. A federal government representative stated that "government has to really make a difference on the demand side, rather than the supply side. They need to recentralize purchasing, educate their staff; let them know that the quality difference is a myth now, that the price points are close" (Interview #33).

The government of Manitoba has managed to convert virtually all of its office paper usage to paper containing recycled content (see sidebar "A Model in Manitoba – Government Procurement Policy").[29] The policy was only an initial step in ensuring that all areas of government shifted their consumption patterns and the change has been incremental, working first with voluntary compliance and then delving into means for ensuring that the initial commitment translated into substantial and widespread changes in procurement activities. This is a model that could apply to all sectors.

A Model in Manitoba – Government Procurement Policy

In December of 2000, the Manitoba government adopted the Sustainable Development Procurement Guidelines (Government of Manitoba 2002). The guidelines include basic environmental principles such as resource and energy conservation, pollution prevention and waste reduction and diversion.

Prior to these efforts, the Manitoba Conservation Department had used recycled paper for a number of years. However, the overall government consumption level was less than 1 per cent in 2000. In 2001, through education and voluntary compliance, the use of recycled paper increased to 9.4 per cent. In April of 2002, the government Procurement Council issued a directive recommending departmental adherence to sustainability obligations within the Sustainable Development Act.

The Procurement Council's directive included information about revising printing protocols to support double-sided printing in order to offset premiums and to reduce overall consumption. By December of 2002, the rate of recycled paper use had increased to 60 per cent across the government. In January of 2003, the Minister of Transportation and Government Services mandated the exclusive use of recycled copy paper resulting in a sharp increase to 98 per cent recycled paper consumption.

Recommendations Regarding Consumers

12. Establish standards for product labelling to ensure that consumers can easily ascertain environmental information about the paper they are purchasing

    Regulations for the labeling of paper would assist consumers in making informed decisions about paper products. Information about the type of fibre and bleaching processes used must be mandatory, including the amount of post-consumer recycled fibre. This information should be consistently formatted on paper packaging so it is easy to locate. In addition, the information should be provided with advertising and marketing for office papers.

13. Request EPP from suppliers and producers

    Consumers should communicate their preference for environmentally responsible papers. If the kind of paper consumers wish to purchase is not available (for example, chlorine free paper), it is important for suppliers and producers to know this. Concerns about the availability and affordability of EPPs can be expressed in positive terms – by describing what kind of paper would be preferable.

14. Adopt procurement policies that support EPPs

    By implementing supportive procurement policies, bulk paper purchasers, particularly government and other public institutions (such as health and educational facilities), have the power to create a substantial shift in the economies of scale for EPP. These policies must be applied broadly to all departments, and should include targets (with accountability) that increase over time.

15. Strengthen Paper Trail partnerships and explore non-traditional approaches to promoting EPPs

    A range of partnerships is necessary to ensure that EPPs gain a significant market share. Environmental non-governmental organizations (ENGOs) and citizen organizations must work together to provide consistent information for consumers and to focus consumer education. Partnerships across the Paper Trail, including government and industry, are necessary to create broad change. ENGO involvement in service provision and policy development would be a step in the right direction..

16. Develop and promote a legitimate and widely recognized certification system for EPPs

    One of the possibilities for strong partnerships is through a third-party certification program for EPP. The Enviro-Choice label would be a legitimate option, but a renewed effort to develop acceptable guidelines for the certification of paper is required. The guidelines should include stringent requirements for recycled /alternative fibre content, bleaching processes, and sustainable sourcing for wood pulp. The certification system must be governed by an independent third party and well publicized so that consumers can recognize and purchase certified papers with confidence..

17. Link corporate social responsibility with the procurement of EPP

    As part of educational initiatives, the setting of a good example is always helpful. Government and ENGOs can provide recognition for organizations and distributors committed to EPP as a practical way to promote good purchasing practices. Some within the industry believe that the Fortune 1000 companies will become the largest growth market for environmentally preferable products because these companies wish to be viewed as supporting corporate responsibility.

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CHAPTER SEVEN

Barriers to Recovered and Alternative Fibre Supply

In line with the 'polluter pays' principle all actors in the paper recycling chain should share the responsibility for high collection and recycling rates and recyclability of paper and board products. This includes converters, printers, packers/fillers, publishers, manufacturers of adhesives, inks etc., distributors, local authorities, final consumers and recovered paper collectors. It also includes the policy framework, which should be consistent, stable and supporting. The paper industry alone cannot provide constant improvements in paper recycling – support from the whole recycling chain is needed. — Hyvarinen 2003

When envisioning the transition to a healthy paper sector, the recovery system – the recycling of paper – is frequently viewed as one of the primary solutions. Recycling programs throughout Canada have been successful and have gained broad participation: in 2000, the recovery rate in Canada was estimated at 43.3 per cent (NRC 2003). This chapter will examine the weaknesses in the recovery loop in Canada and how this aspect of the Paper Trail might be strengthened.

While at one time paper reused in paper production was referred to as "wastepaper", it is now seen as "recovered paper" and is a valuable commodity in the global market. In some countries, recovered paper is the primary source of fibre. For example, in Japan , with pressure from Japanese consumers and a shrinking fibre supply, the Japanese paper production industry set the goal of utilizing 56 per cent recycled fibre by 2000; they were able to meet the target in 1999 (Japanese Information Network 2000). Similarly, in Europe, recovered paper makes up 50 per cent of total fibre consumption and fillers represent 13 per cent, with wood pulp contributing less than 40 per cent of paper content (Diesen 1998).

In North America, the percentage of recovered paper used by pulp and paper companies has been increasing slowly. Recovered paper now provides about 25 per cent of the fibre supply for all Canadian-made paper (FPAC) although it comprises only 5-7 per cent of printing and writing paper content – between 5 and 7 percent (AET).

There are a number of challenges in the current paper recovery system, which represent barriers for producing more EPPs in Canada. First, the Canadian recovered paper market is dependent on imported recovered fibre. With a small and widely distributed population, Canada cannot feed a sufficient amount of recovered paper fibre to its substantial paper industry. As a result, in 2002, Canada was the second largest importer of American recovered paper (after China) – importing 23 per cent of American recovered paper exports (Moore 2003:24). Second, problems with collection and contaminants are holding back growth in

the amount of paper re-entering production. Third, reliance on imported materials leaves Canada vulnerable to price fluctuations and changes in the global marketplace.

It is important in discussions of recovered paper, not to lose sight of the reality that with increasing levels of production, export and consumption, recovery alone will not address the challenges of reducing wood use (Smith 1997:173). Particularly in Canada's case, recycling is only one way to resolve Canada's barriers to creating a sustainable supply of fibre. A viable alternative for the supply of Canadian-made EPPs is the cultivation and harvest of alternative fibres. However, the use of alternative fibres remains exceedingly marginal in the Canadian industry.

Significantly reducing the use of wood fibre in paper manufacture is still a major challenge to the North American vision of paper production. Nonetheless, the lengthy history of exploiting the forest resources of Canada requires dramatic change if the pulp and paper industry is to become sustainable. Many areas already suffer from extensive over logging and those that remain are ecologically valuable and difficult for industry to access. The development of options for alternative fibres and improvement of the recovery process will assist in increasing the amount of EPP available in Canada.

The following barriers will be discussed in detail below:

- Limited recovery rates and recovered fibre quality
- Lack of regulation requiring reuse
- Perceptions of post-consumer fibre as "waste"
- Imports dependency and price fluctuation
- Alternative fibres are not viewed as a viable alternative
- Alternative fibres require investment and time to become competitive

Barrier 14: Limited Recovery Rates and Recovered Fibre Quality

While Canada's overall paper recovery rate sits at 43 per cent, the Forestry Producers Association of Canada estimates that the nation is recycling only 15 per cent of its printing and writing papers, a statistic that reflects poorly on Canada's current recovery systems (FPAC). There are initiatives to increase the amount of recovery and to draw a connection between the production and recovery steps of the paper trail. For example, in Ontario, the new *Waste Diversion Act* obligates all producers (of printed paper products) to pay 50 per cent of the net cost of the Ontario blue box program (Stewardship Ontario 2003).[30]

However, Canada remains at a distinct disadvantage due to the relatively sparsely populated nature of the population. In contrast to more densely populated countries, *collection and transportation* outside of urban areas is often fragmented and challenging. Some areas, such as Nunavut, have only recently implemented recycling programs, in part due to the logistical challenges involved (Murphy 2002). According to an industry association representative, there is a maximum distance over which the transport of recovered paper to mills is feasible – somewhere between 500 and 700 miles (Interview #20). Once the distance exceeds this threshold, he believes it becomes prohibitive to ship fibre – particularly if it is in relatively small quantities (ibid).

In the case of remote locales, improving the cost effectiveness and efficiency of transporting collected recovered fibre is an issue. But, of more concern to the overall health of the recovery system, is resolving

the challenges in urban Canada. Here the biggest issue is increasing the overall amount of paper entering the recovery system and ensuring that the degree of *contamination* (primarily from foodstuffs) is kept to a minimum. A representative from an industry paper stewardship organization explains:

> *Quality issues are one of the barriers. The paper industry needs high quality fibre and they do not want you bringing in products that end up in their residual streams in their plants or affect the quality of the paper. Also recovery…because the industry has to import a fair amount of paper…and they would like to get it from the urban forests here in Canada* (Interview # 19)

As a result, while there have been increases in collection levels in Canada, there remain substantial challenges with improving recovery and reducing contamination and specifically in the recycling of high grade papers. Many citizens remain unaware of the broad range of paper grades they can recycle (Alberni Environmental Coalition). Therefore, although some of the necessary improvements for increasing recovery of paper may be related to collection processes, education of the public remains a central issue.

Barrier 15: Lack of Policy/Regulation Addressing Reuse

Policy and regulation represent powerful tools for increasing recovery rates. One tool that has proven effective in some Canadian locales is "pay as you throw" programs that educate the public about, and then enforce, the amounts and types of waste that are acceptable to landfill and what materials must be redirected to recovery (Interview #19). Yet overall, policy and regulation has been underutilized in Canada as a tool for creating change in the recovery system, both on the production and the recovery ends.

While it is difficult to identify the exact recipe for success in countries with higher rates of recovery, some countries, such as Germany, have implemented "aggressive legislation" to ensure that the issue of recovered fibre is taken seriously (Abramovitz 1999:39). This approach has been a resounding success, growing from the creation of a Packaging Ordinance in 1991, which requires all producers and distributors of packaging material to ensure that it is recycled.[31] A somewhat different approach may be found in the Netherlands, which has effectively utilized voluntary agreements between government and industry to meet recovery targets (Abramovitz 1999:40). In the United States, municipal requirements that newspapers contain minimum recycled content levels were instrumental in motivating change within the sector and the success of urban curbside recycling programs.

The European example reveals the importance of cooperation between all the stakeholders of the Paper Trail. With the combined efforts of industry, government, ENGOs and consumers, the average recovery rate in Europe now sits at 51 per cent with the highest rate of 70 per cent in Germany and the lowest, at 38 per cent, in Italy (CEPI 2001). In addition, the European Recovered Paper Association has set a target of a 56 per cent average by 2005 (CEPI 2000). The result of the European targets has been an effort by individual countries to achieve and exceed these targets.

Another area of the Canadian industry that is weakened by a lack of policy and/or regulation is the tracing of the recovery loop. Without transparency from paper producers, it is difficult to assess the degree to which, and how, recovered papers are being utilized. As an industry analyst from an ethical investment group explains "One thing that bothers me is that there is no data being compiled on a mill-by-mill level about the capacity to utilize recycled fibre, and what percentage of the whole that is. That would make it so much [easier] for us to make recycled content part of our rating system" (Interview #11).

The lack of clarity from the industry means that it is difficult to monitor the progress of Canadian mills and to assure consumers that recovered paper is being used at all. Again the Confederation of European

Paper Industries provides a strong model, calling for the improvement of monitoring and data collection in paper recycling. The Confederation has created the European Recovered Paper Council in order to "follow the progress and fulfillment of the European [Paper] Declaration in an open and transparent way" (CEPI 2000)

If mills were required to disclose usage of recovered fibre and if consumers were better informed about the direct linkages between paper recovery, paper production and the loop back to consumption, EPPs would undoubtedly find a growing niche in the Canadian market.

Barrier 16: Perceptions of Post-Consumer Fibre as "Waste"

> *If you collect waste, then the implication is that the material is unwanted and needs to be disposed of, whether that is to manufacturing or to landfill. On the other hand if you view the material as a resource, it needs extracting from the waste stream at as high quality as possible in order to meet the requirements of the manufacturing. Recycling becomes a manufacturing, not a disposal method* — UK recycled paper expert, Interview #23

Although perspectives are changing, there is still a broad misconception among Canadians about the value of recovered paper. In North America, the management of recycling paper has typically been referred to as "waste management" and transforming this approach to one of "resource management" would involve a shift – particularly amongst government and consumers. As Maureen Smith points out, the entire system of measurement for the success of paper recycling in North America has been skewed by the waste perspective: "recovery rates standing alone as the measure of recycling progress are grounded in a waste-management view of recycling because they do not disclose anything about what happens to the wastepaper that is recovered" (1997:160).

For Canadian paper producers who import from the United States, the status of recovered paper as a commodity can scarcely be ignored. Yet continuing perceptions of recovered fibre (and its products) as inherently inferior to virgin wood fibre creates an unequal view of how recovered fibre ought to be valued within the marketplace. The Confederation of European Paper Industries has had an ongoing debate about the distinction between paper as waste and paper as a "secondary resource." The concern has focused around the profoundly different valuation of waste versus raw material that will be processed in manufacturing (CEPI 2002).

Following from the perception that recovered paper is waste, , is the belief that it can only be reprocessed into lower grade products. The view of recovered paper as an inferior input will not assist the integration of greater quantities of recovered paper into the production of printing and writing papers. Indeed, there are some challenges in using recovered fibre for printing and writing papers. For example, when paper is recycled, some of the longer (and therefore stronger) fibres are shortened, which means that they lose their flexibility and bonding ability (Ferguson 2001). However, if recycled pulp is combined with even a small proportion of stronger pulp, the deficiencies become less of a factor. Moreover, recycled fibre has advantages in that it drains faster than virgin pulp, requires less refining, can be co-refined with other pulps without difficulty and can improve paper bulk and opacity (Ferguson 2001: 181).[32]

Despite these advantages, fine papers tend to be downgraded into lower quality papers when they are reused. Therefore, in order for recovered paper to become a more substantial part of the paper market in

Canada, it is vital that the stakeholders within the Paper Trail come to view recovered paper as a valuable resource.

Barrier 17: Imports Dependency and Price Fluctuations

One of the primary barriers to the integration of greater quantities of recovered paper into Canada's production system lies in the fact that about 40 per cent of recovered paper is imported from the United States (NRC 2003). Although Canada has considerable work to do before it has harnessed the potential of its recovery programs, there are still the fundamental limitations of population. As one paper mill technology expert explains "50-100 years ago, the Canadian North was the ideal place to build a pulp mill. Now [because of population] it is someplace, if not exactly the Bronx, than similar to that idea" (Interview #42).

Therefore, while countries with dense urban centres begin to utilize the rich resource of their own recovered paper, Canada faces a situation where the bulk of recovered fibre must be purchased from the global market. While in recent years, the global market price for recovered paper has been comparatively low (to the point where some collectors are facing financial difficulties) but the market is volatile and can shift quickly (Magnaghi 2000).[33] Initially, the price fluctuation problem stemmed from an unstable supply, as collection programs attempted to become established (Abramovitz 1999:41). As local governments and businesses have adopted long-term recycling programs this, in combination with an increase in mill capacity, has led to a more stable supply in North America (ibid). However, Canada, as a large scale importer, continues to compete for fibre in an unstable market.

The global demand for recovered fibre continues to increase with the growing demand for paper (Abramovitz 1999: 6). While North American and European consumption of recovered paper dropped slightly between 2000 and 2001, the Asian market increased by almost 4 million tons, which represents a substantial amount of recycled pulp (Magnaghi 2002). During this same period of time, prices for recovered paper were actually in a slump but the prices can increase quickly and unexpectedly.

The interdependence of recovered paper consumers and recovered paper collectors has yet to affect price stabilization. Magnaghi observes that it is important for the relationship between these parts of the Paper Trail to be sufficiently formalized, so that both may be assured of an increase in stability. One of the challenges is to eliminate both speculation and a lack of commitment from producers to regular purchasing and collectors to consistent supply. He states that

> *at both sides one can find operators who either seem to be unable to organize their plans of supply, or people who speculate...The speculators are in their great majority mere brokers. Their speculative attitude has an impact on serious collectors who prefer reasonable stability. On the other hand, some recovered paper consumers are immediately ready to depress the price levels as low as they can…Such attitudes create brisk and severe fluctuations on the market, consequently creating conflict* (2002:7).

Barrier 18: Alternative Fibres are not Viewed as a Viable Alternative

> *There is so much fibre available in Saskatchewan alone that they could actually produce as much fibre as the entire Canadian industry requires…According to my statistics,* [there] *is as much fibre as is being utilized by the Canadian sector at the present time in a given year. In addition, if Canada had an agri-pulp strategy* [the use of agricultural by-products to feed the pulp industry]*, 25 per cent of the 65 million ton reduction in greenhouse gas emissions required by Kyoto would be accomplished.*
> — Independent Producer, Interview #3

The pulping of wood is a relatively recent phenomenon. Before the technology existed for pulping wood many other materials were used to create paper. As Maureen Smith observed, "the use of nonwoods as a fibre source for making paper predates the use of wood by roughly nineteen centuries" and several countries are still dependent on nonwoods for their fibre supply. China, for example, relies upon nonwoods for approximately 60 per centof its supply. Overall, non-wood fibres constitute a mere 7 per cent of the global fibre supply for paper and of this, 97 per cent is being produced in the developing world (Abramovitz 1999:43). Nonetheless, it is important to recognize that the conversion to nonwood fibre sources is an option worth serious consideration (ibid:89).

In the context of the North American market, however, changing the sourcing for paper fibre has yet to receive serious consideration from producers or from government in Canada (Independent paper producer, Interview #3). Regardless of the relative newness of wood pulp, wood has become the exclusive source of pulp for most North American producers. The economic potential of pulp sources that can be grown annually (potentially in partnership with a struggling agriculture industry), harvested and pulped without the massive inputs of the current wood pulp industry is indisputable.[34] As Dan Imhoff observes "like the organic farming community, which has created a safer, more sustainable alternative to industrial agriculture, tree-free paper companies have been working against enormous odds to redefine the terms for paper production" (1999:14). Yet this possibility and all of its implications have yet to make it onto the political agenda in Canada.

The inertia with respect to nonwood fibres is largely due to the fact that the forestry industry with paper is deeply embedded in the economic identity of Canada. Given the current levels of investment in the wood pulp industry (documented in Chapter 4) it will take a concerted effort on the part of government, ENGOs, community economic development advocates and consumers, to encourage the Canadian industry to move in a new direction. Therefore, for alternative fibres to be taken seriously, great challenges still lie ahead.

The challenge of gaining the interest of mainstream industry aside, hope springs from a small but growing body of research which points to the potential of alternative fibres. A recent feasibility study from the Manitoba Rural Adaptation Council had a myriad of objectives, from recycling agricultural waste and reducing burning of this waste, to developing "a new and sustainable industry in Manitoba that adds value for farmers, creates a new export product and benefits the local economy while positively affecting the environment" (MRAC 2002). What began as a feasibility study has become the Prairie Pulp and Paper Company, a fledging business working to build a customer base for paper products made using wheat and oat straw.

Barrier 19: Alternative Fibres Require Investment and Time to Become Competitive

> *It is one thing to proselytize about a new era of tree-free paper production. It's another to face up to the manufacturing challenges, current economic realities and potential ecological implications of large-scale tree free production.* — Imhoff 1999:14

> *Although increasingly vigorous debate is beginning to be waged around a range of potential environmental and economic benefits associated with nonwoods use in papermaking, it is strikingly characterized by the huge vacuum in supporting contemporary research.* — Smith 1997: 97

The current pulp and paper production system in North American is literally a well-oiled machine. The systems of production are all adapted to utilizing wood fibre and large corporations have invested billions of dollars in refining these processes for maximum volume of production (Imhoff 1999).

The technologies required for pulping alternative fibres are different and would require adaptation of, and innovation in, technology. For example, while nonwood fibres do not contain very much lignin (the adhesive in wood that has to be removed for pulping), they do contain other substances that must be removed or broken down (Abramovitz 1997: 44). In addition, research is required to determine how to grow crops in the most productive and ecologically sound manner. As a result, it is no wonder that, in the face of the massive wood pulping industry, small scale producers and tentative experiments with alternative fibres have not been able to effectively enter the market.

Funding is already being provided for alternative fibre research in other countries, again primarily in Europe. Hemp mill projects have been considered in both the UK and the Netherlands and in 1990, the Dutch Ministry of Agriculture undertook a "four-year study on the use of hemp in pulp and paper production" (Smith 1997: 95).

In a study of the economic viability of utilizing hemp fibre in various industries, the Manitoba Rural Adaptation Council concludes that "there is an opportunity for the hemp industry as long as it can manage the three main hurdles that lie in its path: consistency, quality and quantity. All hemp plants produce fibre, but can differ from region to region or from field to field" (MRAC 2000). With the suitable redirection of funds and energy into resolving these issues, MRAC seems confident that hemp fibre has great potential for the paper industry.

Such studies provide an initial starting point, but more research and small scale projects would need to take place before there can be any consideration of a large scale shift. A transformation of any magnitude in the marketplace would take longer still. However, this is precisely the kind of incremental approach that is required to create a sustainable alternative to the current situation. Nurturing a strong market, with educated consumers is also a vital element in integrating alternative fibres into paper production (Imhoff 1999:16).

Recommendations Regarding Recovered and Alternative Fibres

18. Build partnerships and joint responsibility for increasing effective paper recovery

For paper recovery systems in Canada to reach their maximum levels, the entire Paper Trail must share the responsibility. Public education is a pivotal part of increasing the amount of paper entering the recovery stream and reducing the degree of contamination. Industry and government must share the costs of implementing effective paper recycling programs. ENGOs may have an important role in implementation and education. Developing real partnerships, with sharing of information and resources and joint development of strategies among the various players, would help to increase effective paper recovery.

19. Implement policy and/or regulation with targets for the improvement of paper recovery; monitor progress

All three levels of government can take steps to assist in the transition to more EPPs. Whether by adopting regulation, creating voluntary (but binding) agreements, or through the kind of shared cost approach being utilized in Ontario, it is time for the recovery of paper to be enshrined within policy and regulation that includes targets and is monitored for progress.

20. Educate the public about recovered and alternative fibres

ENGOs, government and industry are all responsible for ensuring that the public understands the value of recovered paper and participates fully in recycling programs. Consumption of the final product (EPPs) is also a missing link in the recovery loop. Educational initiatives around the potential for alternative fibres would help to create a positive marketing environment.

21. Develop stability of supply and demand for recovered fibre within Canada.

Canadian paper producers need reliable sources of recovered fibre. Commitments between Canadian suppliers and processors of recovered paper are an important way for both to have some guarantees for stability. The paper recovered in Canada should stay within Canada to feed local mills and provide, at fair price, for both collectors and paper producers.

22. Fund research and development of alternative fibre production and pulping

To develop a truly sustainable Canadian pulp and paper industry, homegrown alternative fibre sources must be utilized. Significant research and development is required in this area before a transition of fibre sources can be expected to occur. Research and development funds should be redirected from traditional wood pulping technologies to the area of alternative fibres. Government and industry need to contribute funds to these efforts, which should include pilot projects that allow for industrial application of research.

23. Recognize that there will be no single fibre source for EPP papers

In the same way that nurturing the market for EPPs will require the collective effort of all stakeholders, so too will the development of truly environmentally responsible paper require a combination of inputs. Ultimately, Canadian EPPs may find their own unique combination of fibres, likely a combination of recovered fibre, agricultural residues or industrial crops and a small proportion of softwood pulp.

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CHAPTER EIGHT

Conclusion and Summary of Recommendations

The current limitations of the production and marketability of EPPs in Canada are the joint responsibility of all of the stakeholders of the Paper Trail. For a number of years there has been an ongoing blame game, visible in the media and in the interviews conducted by the Aurora Institute for this study.

Industry proponents defend the status quo and attribute lack of production to global pressures and lack of demand. Consumer groups argue that EPPs are difficult to locate or are too expensive. Government attempts to stay on the fence between industry and ENGOs, defending the role of the pulp and paper sector in the Canadian economy and attempting to regulate it, all the while avoiding the challenge of moving industry in a truly sustainable direction.

Ultimately, the current state of affairs is reflective of a profound inertia that has settled into industry, the public and government. Those models that have been identified throughout this report, in Europe and Canada, reveal how quickly this inertia might lift and how immediate the transition might be with a concerted collective effort to change the traditional underpinnings of the Canadian paper economy.

While ENGOs have played their own role in the current difficulties by failing to work collectively and in some cases contributing to unnecessary polarization between stakeholders, the words of *A Common Vision* speak clearly to the possibility of a new approach.

> *We…come together to pursue informed and realistic goals for positively transforming paper production and consumption…We recognize the unique role that each organization plays in moving paper producers and consumers toward environmental and social sustainability…We agree to work together and with manufacturers, governments, suppliers, and purchasers to accomplish the above goals for creating a more environmentally and socially responsible system of paper production and consumption.*

The importance of a collective effort towards a common goal of creating a sustainable (environmentally, socially and economically) pulp and paper industry – cannot be overstimated. It may be daunting to think of the investment and commitment required to make such a transition but there are enough examples of success to prove that it is not far-fetched to envision a future where Canada has a global reputation as a producer of high quality environmentally preferable office papers.

Summary of Recommendations

Recommendations Regarding Production

1. Decrease vulnerability in the global market through product diversification and niche product development

   The production of low value paper products lacking in distinguishing characteristics will not provide the Canadian pulp and paper industry with long term viability. Investment in product diversification is necessary and meeting (and generating) the North American demand for environmentally preferable printing and writing paper will contribute to the long term health of the industry.

2. Improve the economies of scale for EPP office papers so that they are competitive with virgin and chlorine bleached products

   Producers must make a substantial shift in production to EPP for the costs of production to drop and for EPP to compete effectively in the marketplace.

3. Develop a strong research and development partnership (government / industry) with a focus on environmental technology

   The export of environmental technologies can be economically valuable in itself. Canada must reassert itself as an innovator in the pulp and paper industry by encouraging the development of environmental technologies which can then be applied in the industry for cost savings. Technological innovation that focuses on incremental improvements of environmentally hazardous processes should not be fundable.

4. Increase customer knowledge about EPPs and develop customer loyalty to identifiable products

   Industry and government must invest in developing a market for high quality "Made in Canada" paper products. Ensuring customer loyalty and knowledge about EPP requires consumer education and marketing. Investing in a marketing campaign that highlights how the Canadian industry is distinguishing itself and why EPPs are superior will help generate consumer demand.

5. Integrate "alternative" fibres into "mainstream" production

   While recycled fibre is a partial solution to replacing unsustainable fibre sources (softwood timber), Canada lacks a sufficient internal supply of recycled fibre. Heavy reliance on imported recycled fibre is not an economically sound solution (nor does it employ Canadians). The best and lowest cost solution for producers is the integration of Canadian grown environmentally preferable fibres. See Chapter 7 for more about alternative fibres.

6. Develop strong incentives for producers to shift to environmentally preferable production

   Rather than focusing exclusively on the negative impacts of industry pollution, incentive-based policies are required. Economic incentives (such as tax breaks, subsidies and rewards for innovation) encourage producers to make change because they see the dollar value in altering their processes. Following the recommendation of the CEP's National Policy, long term access to crown forests should be tied to investment plans to enhance value added production.

7. Phase-in regulations that are based on maintaining whole ecosystem health; enforce these regulations

   As industry and government begin to refocus the pulp and paper industry on economic sustainability, stronger regulation must be phased-in to protect the health of Canadians and Canadian ecosystems. For regulations to serve their purpose, they must be enforced. These regulations, like the incentives, should have monetary consequences for producers. Incentives and investment in the sustainable economic development of the industry should considerably reduce industry violation of regulations.

Recommendations Regarding Distribution

8. Shift marketing focus to the promotion of EPPs

   This means providing EPPs with all of the perks of good advertising including generating educational and promotional materials about EPPs, ensuring that product placement is high profile, stocking the products regularly (to guarantee supply) and directing customers, particularly corporate and institution buyers toward these products.

9. Educate management and staff of distributors about EPPs so that in turn, consumers may be educated

   As will be discussed in Chapter 6, education of consumers is fundamental to improving the market for EPPs. Distributors can play an important role because they have direct contact with customers on a regular basis.

10. Encourage producers to provide quality papers with a basic minimum level of environmental attributes

    The only way to significantly alter the economies of scale of EPPs is through the purchase of sufficient volumes. Distributors that make a commitment to EPPs can provide a huge boost for EPP production.

11. Stock papers from small and alternative paper producers

    Perhaps an unlikely option for those distributors that are linked through ownership to large pulp and paper companies, but in order for the small EPP producers to survive they require access to the consumer. By selling these papers distributors can raise awareness with consumers about the range of options available.

Recommendations Regarding Consumers

12. Establish standards for product labelling to ensure that consumers can easily ascertain environmental information about the paper they are purchasing

    Regulations for consistent labelling of paper would assist consumers in making informed decisions about paper products. Information about the type of fibre and bleaching processes used must be mandatory, including the amount of *post-consumer* recycled fibre. The information should be consistently formatted on paper packaging so it is easy to locate. In addition, the information should be provided with advertising and marketing for office papers.

13. Request EPP from suppliers and producers

Consumers must communicate their preference for environmentally responsible papers. If the kind of paper consumers wish to purchase is not available (for example, chlorine free paper) it is important for suppliers and producers to know this. Concerns about the availability and affordability of EPPs can be expressed in positive terms – by describing what kind of paper would be preferable.

14. Adopt procurement policies that support environmentally preferable papers

By implementing supportive procurement policies bulk purchasers of paper, particularly government and other public institutions (such as health and educational facilities), have the power to create a substantial shift in the economies of scale for EPP. These policies must be broadly applied to all departments, and should include targets (with accountability) that increase over time.

15. Strengthen Paper Trail partnerships and explore non-traditional approaches to promoting EPPs

A range of partnerships are necessary to ensure that EPPs gain a significant market share. ENGOs and citizen organizations must work together to provide consistent information for consumers and to focus consumer education. Ultimately, partnerships across the Paper Trail, including government and industry, are necessary to create broad change. ENGO involvement in service provision and policy development would be a step in the right direction.

16. Develop and promote a legitimate and widely recognized certification system for EPPs

One of the possibilities for strong partnerships is through a third-party certification program for EPP. The Enviro-Choice label would be a legitimate option, but a renewed effort to develop acceptable guidelines for the certification of paper is required. The guidelines should include stringent requirements for recycled /alternative fibre content, bleaching processes and sustainable sourcing for wood pulp. The certification system must be third party and well publicized so that consumers can recognize and purchase certified papers with confidence.

17. Link corporate social responsibility with the procurement of EPP

As part of educational initiatives, a good example is always helpful. Government and ENGOs can provide recognition for organizations and distributors committed to EPP as a practical way to promote good purchasing practices. Some within the industry believe that the Fortune 1000 companies will become the largest growth market for environmentally preferable products because these companies wish to be viewed as supporting corporate responsibility.

Recommendations Regarding Recovered and Alternative Fibres

18. Build partnerships and joint responsibility for increasing effective paper recovery

For paper recovery systems in Canada to reach their maximum levels, the entire Paper Trail must share the responsibility. Public education is a pivotal part of increasing the paper entering the recovery stream and reducing the degree of contamination. Industry and government must share the costs for implementing effective paper recycling programs. ENGOs may have an important role in implementation and education.

19. Implement policy and/or regulation with targets for the improvement of paper recovery – monitor progress

Whether provinces and local governments adopt regulation, voluntary (but binding) agreement or the kind of shared cost approach being utilized in Ontario, it is time for the recovery of paper to be enshrined within policy and regulation that includes targets and is monitored for progress.

20. Educate the public about recovered and alternative fibres

ENGOs, government and industry are all responsible for ensuring that the public understands the value of recovered paper and participates fully in recycling programs. Consumption of the final product (EPPs) is also a missing link in the recovery loop. Educational initiatives around the potential for alternative fibres would help to create a positive marketing environment.

21. Develop an integrated approach to supply and demand for recovered fibre within Canada

Commitments between Canadian suppliers and processors of recovered paper are an important way for both to have some guarantees for stability. The paper that is recovered in Canada should stay within Canada to feed local mills and be provided at a fair price for both collectors and paper producers.

22. Fund research and development of alternative fibre production and pulping

In order to develop a truly sustainable Canadian pulp and paper industry, homegrown alternative fibre sources must be utilized. Significant research and development is required in this area before a transition of fibre sources can be expected to occur. Research and development funds should be redirected from traditional wood pulping technologies, to the area of alternative fibres. Government and industry need to contribute funds to these efforts, which should include pilot projects that allow for industrial application of research.

23. Recognize that there will be no single fibre source for EPP papers

In the same way that nurturing the market for EPPs will require the collective effort of all stakeholders, so too will the development of truly environmentally responsible paper require a combination of inputs. Ultimately, Canadian EPPs may find their own unique combination of fibres, likely a combination of recovered fibre, agricultural residues or industrial crops and a small proportion of softwood pulp.

ENDNOTES

[1] French speaking Canadians were not surveyed, as the survey was only provided in English.

[2] Text and results of both the PMAC and Ipsos Reid surveys may be found in Appendices C and D respectively.

[3] The use of alternative fibres is hampered by a number of issues including erratic availability, labour intensiveness, different production process requirements and large land requirements. A discussion of these issues is beyond the scope of this report. However, alternative fibres are relevant to the development of healthy and sustainable paper sector and will therefore be discussed further in Chapter 7.

[4] For a detailed explanation of pulp processes please see Biermann, C.J. *Pulping and paper making*. Academic Press: San Diego, California. 1996; Smith, Maureen. *The US Paper Industry and Sustainable Production: An Argument for Restructuring*. MIT Press: Cambridge 1997.

[5] More information about the testing and implementation of enzymatic de-inking see VTT Biotechnology. *Enzymatic de-inking - environmentally friendly solution for recycling printed paper*. January 2001. http://www.vtt.fi/bel/results/enzymatic_deinking.htm

[6] Northern producers face additional challenges from southern countries, such as Brazil and Indonesia, who use lighter Eucalyptus trees as their fibre source, allowing for paper that is produced chlorine-free while still looking white.

[7] For more information about Canadian regulations addressing chlorine, see Chapter 3.

[8] AOX is Absorbable Organic Halides – Halides are highly reactive elements in the halogen family (fluorine, chlorine, bromine, and iodine) that bond easily with organic substances. This means that AOX enter with ease into the environment and consequently, the food chain. Chlorine is the most common halide present in a pulp mill and AOX testing generally measures chlorinated organic compounds, also called organochlorines (Broten & Richlin 1999:2).

[9] Information about making paper from NorskeCanada. "How we make paper." (Undated pamphlet); Inveresk PLC. 2003. "Manufacturing Paper." http://www.inveresk.co.uk/manpapr.htm

[10] The categories of printing and writing paper may be broken down considerably further, depending upon their intended uses.

[11] In 2002, Canada exported 11.8 million tonnes of wood pulp and 7.4 million tonnes of newsprint. (Natural Resources Canada. The State of Canada's Forests 2002-2003. http://www.nrcan.gc.ca/cfs-scf/national/what-quoi/sof/sof03/statistics_e.html)

[12] The challenges in Canada's recovery system are discussed in detail in Chapter 7.

[13] Information about mergers from Forest Products Association of Canada. *Paper and Wood: 2001 Annual Review*. p.7; Domtar. "Domtar and Tembec announce intention to creation second largest solid wood products company in Canada." http://www.domtar.com/Navigateur_Standard/NEWS/EN/HTML/2719_EN.asp

[14] The process-related changes meant that mills were required to alter bleaching processes to prevent the formation of dioxins and furans and that mills were required to ban defoamers and wood chips, leading to a further reduction in these types of chemicals (Christie and McEachern 2002:20).

[15] Weyerhaeuser data includes sales figures from Williamette, another US forestry firm that amalgamated with Weyerhaeuser in 2002.

[16] PAPRICAN is a non-for-profit industry research and educational organization whose stated mission is "to enhance the technical competitiveness of [its] member companies through research and education activities which support and supplement their own technical efforts."

[17] Government subsidization has been extensively documented elsewhere and will therefore not be discussed further within this document. More information may be found in: M'Gonigle, Michael and Ben Parfitt. *Forestopia: A Practical Guide to the New Forest Economy.*Madeira Park BC: Harbour Publishing. 1994.

[18] Institutional purchasers appear less willing to pay a premium for EPP. The PMAC survey found that 50 % of institutional purchasers were not willing to pay more than a 5 % premium. However, a significant 31.7 % were willing to pay between 5 – 10 % more for EPP. (see Appendix D, question 29). A mere 1 % indicated that they would stick with virgin fibre paper even if it were not cheaper than EPP, challenging the contention by many in the industry that institutional purchasers are concerned only about price.

[19] For more information about these resellers see the following websites: Georgia Pacific (http://www.gp.com/center/history/1990.html), Domtar (http://www.domtar.com/domtarprod/navigateur_standard/features/en/html/1784_en.asp), Coast Papers (http://www.coastpaper.com/About_Us/Corporate.htm).

[20] Mills in North America and Europe have successfully used totally chlorine free bleaching processes to a brightness level of over 85 %ISO. "This level is consistent with the typical 85-87 % brightness at the bulk of kraft pulp mills using chlorine or chlorine compounds…Most end uses do not benefit from higher brightness levels" (Culver).

[21] A representative of a large industry association commented that "you know ten years ago…they always used to talk about how the runability and the printability wasn't there in recycled content papers so you couldn't run the machines nearly as fast…Nobody talks about runability and printability when they talk about recycled content…so technology has increased now to the point where those aren't issues anymore" (Interview #20).

[22] Overall six distributors commented on the question of price, suggesting that this is considered by distributors to be a serious problem (Interviews: #7, 8, 21, 22, 37,39).

[23] The majority of PMAC survey respondents were large scale paper purchasers – 57.7 % of respondents are responsible for paper procurement for more than 100 employees and 44 % are purchasing for over 250 employees. Almost 40 % of the purchasers are overseeing the consumption of more than 1,000 cases of paper per annum (5,000 letter-sized sheets per case). The purchasers represented a broad range of sectors with 40 % from government and public sector institutions, 50 % from the private sector and 10 % from non-profit organizations. French speaking Canada is not represented in the PMAC survey sample. More details about survey and research methods are provided in Chapter 1

[24] Complete baseline data regarding retail and institutional office paper purchasing in Canada, particularly information regarding EPP purchasing, was not obtainable for this study, thus necessitating the surveys and interviews. The lack of such data is attributable in large part to the lack

of public reporting by companies, and lack of gathering information by bodies responsible for tracking market trends and behaviour, such as Statistics Canada.

[25] While there is limited concern about brands of paper, bulk purchasers do have loyalty to particular suppliers. Survey results found that 83 % of bulk purchasers buy over three quarters of their paper from a single supplier and two thirds of purchasers have been buying from their current supplier for more than three years (see Appendix D, question 10). In some cases this consistency reflects contractual agreements and in others simple convenience. Regardless of the reason, this points again to the pivotal role distributors can play in educating and influencing consumers.

[26] Environmental Choice does have certification criteria for finished paper products, but they are extremely low standards. For example, paper must have a minimum of 50 % recycled content, with at least 10 % post-consumer fibre. For the full list of criteria see www.environmentalchoice.com.

[27] The bulk purchasers tended to place more onus on producers and household consumers to promote change in paper consumption.

[28] President Clinton's Executive Order 13101 requires all paper consumed by U.S. federal agencies to contain 30 % recycled content with at least 20 % post-consumer waste (RCAGPP). While this has led to uniform purchasing of paper with recycled content, some have criticized the initiative because it has resulted in focusing production on paper with 30 % recycled content only.

[29] That chlorine is not part of the Manitoba policy is not so much due to lack of concern, but rather lack of awareness (Interview #4). The chlorine issue requires more attention and publicity in Canada; fibre sourcing has generally been better documented and understood within the media.

[30] As mentioned previously, collection rates are not necessarily an accurate reflection of actual recycling – the amount of paper that makes it back into production depends heavily upon the success of recovery efforts. A defining factor in creating a successful recovery program is the participation of government, citizens and industry.

[31] In addition to national targets, European countries are bound by the legislation of the EU Parliament, which recently passed a new recycling law (dealing with multiple materials). "The resolution calls on the 15 members of the EU to recover for recycling at least 60 percent of the packaging waste by the end of 2008" (Recycling Today 2003).

[32] Estimates vary about the amount of times a paper product may be recycled. For newsprint, the number may be three to four times and for higher grades of paper, containing greater proportions of kraft pulp, papers may be recyclable up to 12 times (Kinsella 2003).

[33] Challenges with maintaining a reasonable price for recovered paper in the face of decreasing prices for paper products affect the entire Paper Trail. When economies slow, the prices for paper (particularly low grade papers) generally drop. The economic chain reaction translates into correspondingly low prices for recovered paper, posing a threat to businesses focused on paper collection. "Such price swings threaten the stability of recycling programs, and point to the need to look at other funding mechanisms (like product stewardship) to ensure consistent programs and to keep paper from being landfilled during the down-cycles" (SWRC 2001).

It would be to the benefit of the recovery loop to integrate recovered fibre into higher grade papers (such as printing and writing papers) that tend to maintain stable prices. This would help to reduce the vulnerability of the collective system to price fluctuations.

[34] Smith breaks nonwood fibres down into four categories: agricultural residues, nonwood fibre (industrial) crops, wild plants and industrial / textile and cordage wastes. At this point, efforts to increase nonwood fibres in Europe and North American have focused on the first two.

APPENDIX A

Scientific Articles Addressing the Environmental Impacts of the Pulp and Paper Industry

Adams, S.M., et al. "Downstream gradients in bioindicator responses : point source contamination effects on fish health." *Canadian Journal of Fish Aquatic Sciences*, 53: 2177-2187. 1996.

Adams, S. Marshall, et al.,"Responses of Fish Populations and Communities to Pulp Mills Effluents : A Holistic Assessment." *Ecotoxicology and Environmental Safety*, 24: 347-360. 1992.

Easton et al. Genetic Toxicity of Pulp Mill Effluent on Juvenile Chinook Salmon Using Flow Cytometry. *Elsevier Science*, Vol. 35, #2-3. 1997.

Johnsen, Kjell, et al. "Experimental Field Exposure of Brown Trout to River Water Receiving Effluent from an Integrated Newsprint Mill." Ecotoxicology and Environmental Safety, 40:184-193. 1998.

Munkittrick, Kelly R., et al. "Survey of Receiving Water Environmental Impacts Associated with Discharges from Pulp Mills. 2. Gonad Size, Liver Size, Hepatic EROD Activity and Plasma Sex Steroid Levels in White Sucker." *Environmental Toxicology and Chemistry*. 13:7: 1089-1101. 1994

Munkittrick, K.R., et al., "An overview of recent studies on the potential of pulp mill effluents to alter reproductive parameters in fish." *Journal of Toxicology and Environmental Health*, Part B 1: 347-371. 1998.

Sodergren, A., et al. Bleached Pulp Mill Effluents: Composition Fate, and Effects n the Baltic Sea. *Report of the Environment / Cellulose II Project*. Swedish Environmental Protection Agency #4047. 1993.

Smits, S.E.G. et al. "Enhanced Antibody Responses in Mink Exposed to Dietary Bleached Kraft Pulp Effluent." *Environmental Toxicology and Chemistry*, 15:7: 1166-1177. 1996.

Smits, S.E.G. et al., "Physiology, Reproductive and Pathological Effects of Dietary Bleached Kraft Pulp Mill Effluent in Mink." *Environmental Toxicology and Chemistry*, 14:12: 2095-2105. 1995.

APPENDIX B

Buying Clubs

The buying club concept originated through the Reach for Unbleached! Foundation (RFU) in 1998 to stimulate demand for recycled, chlorine-free paper in the absence of industry efforts. The buying club concept is one example of efforts by environmental non-governmental organizations (ENGOs) to use market mechanisms to change industry behaviours and reduce the adverse environmental impacts of the pulp and paper industry. The venture brings interested buyers together to create a critical mass of consumers that can then purchase EPP in bulk at discounted prices.

- As a "social enterprise", buying clubs serve a number of purposes:
- Providing consumers with access to a continuous and dependable supply of EPP
- Minimizing the cost of EPP through bulk purchasing
- Generating a sustaining revenue source for the operating (non-profit) organizations
- Providing a mechanism for exploring the market potential of recycled papers

Currently, there are three buying clubs operating in North America. The *Reach for Unbleached! /Paper Choice Buying Club* was established in 1998 to provide access to environmentally preferable office paper (100 per cent PCW, TCF) for British Columbia consumers. The RFU Buying Club currently offers two brands of paper (New Life from Quebec-based Cascades and Envirographic from Wisconsin based Badger Papers) on a quarterly ordering cycle. RFU markets the paper and Paper Choice Environmental Papers (PC), a private sector partner, distributes it.

The other two buying clubs are based in the United States. The Washington, DC-based, *DC Chlorine-Free Buying Club (DCBC)* was founded jointly by the Resource Conservation Alliance and the Government Purchasing Project as an outgrowth of Ralph Nader's *Centre for Study of Responsive Law*, committed to using the purchasing power of the federal government in the US to stimulate growth in environmentally friendly products (Government Purchasing Project: 2002). According to DCBC, it has sold more than 50 tons of paper between 1999 and 2002. Recycled Office Products Inc. (ROP), a private sector corporation based out of Massachusetts serves as administrator and supplier for the DCBC. Currently, the DCBC distributes the Rolland New Life DP 100 office copy paper, the same paper line that the RFU/PC Buying Club has sold since its outset.

The *Recycled Products Purchasing Cooperative (RPPC)* is based out of California and is attempting to be the first truly national Buying Club. Its focus is on selling recycled (30 per cent or 100 per cent PCW), ECF papers *and* remanufactured toner cartridges. It also sells colored, odd-sized, continuous feed, and other specialty recycled papers, making it the only Buying Club in North America to diversify with success beyond office papers. The RPPC shares a strategic link with San Francisco-based New Leaf Papers, a mission-based business that is a key and growing distributor of environmentally-preferable papers. RPPC also provides an online ordering service for its customers.

Buying Clubs have faced challenges as a result of continuing resistance to change by producers, inability to achieve economies of scale, partially due to consumer allegiances to suppliers, and organizational capacity limitations. With the proper incentives and business approach, buying clubs have the potential to play a significant role as alternative distributors in stimulating market demand for EPP.

Aurora Institute/Ipsos-Reid Omnibus Survey Results

1. Which of the following things would you consider *most* important to your product choice when purchasing computer printer paper or other office paper?

	TOTAL	EDUCATION				INCOME			REGION TYPE		REGION						AGE			GENDER	
		<HS	HS	PostSec	UGrad	<$30K	$30-59K	$60K+	Rural	Urban	BC	AB	SK/MN	ON	QC	ATL	18-34	35-54	65+	Male	Female
Respondents	1005	111	278	304	288	270	295	272	170	663	154	101	100	300	250	100	326	411	229	466	539
per cent																					
Price	29	20	25	28	38	20	30	39	32	30	29	27	25	24	37	28	29	34	23	29	28
Quality of the paper	14	6	15	17	12	12	13	17	9	15	18	12	16	12	13	17	18	14	8	15	13
Environmental friendliness	12	8	10	13	12	13	10	10	9	11	12	13	95	15	9	5	11	12	9	10	13
Socio-economic issues	4	6	3	5	4	4	5	3	5	4	4	4	4	4	5	3	4	4	5	4	5
Brand name familiarity	3	2	3	3	3	3	3	3	2	2	3	4	1	4	2	3	4	2	3	3	3
Consistent availability	3	3	2	3	3	4	2	4	4	3	2	2	3	2	5	2	2	4	1	3	2
Visual appeal of the paper itself	1	—	1	1	2	1	1	2	0	2	3	2	1	0	2	2	2	2	0	2	1
Don't purchase computer printer paper or other office paper	31	46	38	25	22	38	33	18	34	29	27	31	39	34	23	38	27	24	43	30	31
DK/NS	4	8	3	4	4	5	2	4	6	3	3	5	3	5	5	3	3	4	6	4	4

2. Post-consumer recycled content is defined as the amount of content in a paper that has been recycled from the consumer waste stream. It is expressed as a percentage of the total fibres in a paper. Can you tell us the approximate percentage of post-consumer recycled content in the computer or office paper used in your household?

	TOTAL	EDUCATION				INCOME			REGION TYPE		REGION						AGE			GENDER	
		<HS	HS	PostSec	UGrad	<$30K	$30-59K	$60K+	Rural	Urban	BC	AB	SK/MN	ON	QC	ATL	18-34	35-54	65+	Male	Female
Respondents	710	59	177	232	227	169	204	224	116	475	114	71	65	204	194	62	237	317	130	330	380
per cent																					
100 post-consumer recycled content	11	9	11	12	9	11	13	10	5	11	15	8	10	11	9	13	10	13	8	8	14
51 to less than 100	22	30	26	20	19	21	24	23	28	22	13	23	12	21	31	18	25	23	18	23	22
20 to 50	28	26	30	26	31	36	24	30	28	28	28	19	28	28	34	20	31	24	34	28	28
Some, but less than 20	8	10	7	11	6	10	9	7	8	9	13	15	12	4	7	7	10	7	7	10	6
No post-consumer recycled content	7	8	10	4	8	6	10	6	5	8	6	6	15	7	5	14	6	7	9	8	6
DK/NS	24	17	16	27	27	16	20	25	26	22	25	29	23	29	13	28	18	26	25	23	25

3. EPP products are those which are chlorine-free and which have a high level of recycled content. Sometimes people buy paper with environmental issues in mind. I'm going to read you a list of some of these issues. Please tell me which of the following issues would make you *most* likely to buy EPPs.

	TOTAL	EDUCATION				INCOME			REGION TYPE		REGION						AGE			GENDER	
		<HS	HS	PostSec	UGrad	<$30K	$30-59K	$60K+	Rural	Urban	BC	AB	SK/MN	ON	QC	ATL	18-34	35-54	65+	Male	Female
Respondents	710	59	177	232	227	169	204	224	116	475	114	71	65	204	194	62	237	317	130	330	380
per cent																					
To protect ecosystem integrity and habitat diversity	20	20	15	24	20	15	21	21	23	19	20	14	32	15	26	19	19	19	23	19	21
To reduce deforestation	20	11	20	25	18	21	21	20	18	21	13	12	22	12	36	14	26	18	16	21	18
To reduce air and water pollution	17	27	22	14	14	22	15	16	24	15	15	18	14	19	17	20	17	20	13	16	19
To lessen the impacts of landfilling waste products	14	11	16	11	16	12	15	14	12	14	20	20	6	17	7	11	12	15	15	13	15
Because chlorine is linked to human health problems	10	10	13	8	11	10	9	10	9	11	9	7	11	12	7	16	11	9	11	7	13
None of these issues would affect my purchasing choice	15	12	14	16	17	13	17	17	11	16	21	24	14	20	2	19	14	16	16	18	13
DK/NS	4	10	2	3	5	7	2	3	3	3	2	4	—	5	4	1	1	3	7	5	3

4. How much extra would you be willing to pay for "environmentally preferable paper products"?

	TOTAL	EDUCATION				INCOME			REGION TYPE		REGION						AGE			GENDER	
		<HS	HS	PostSec	UGrad	<$30K	$30-59K	$60K+	Rural	Urban	BC	AB	SK/MN	ON	QC	ATL	18-34	35-54	65+	Male	Female
Respondents	710	59	177	232	227	169	204	224	116	475	114	71	65	204	194	62	237	317	130	330	380
per cent																					
Unwilling to pay any more	24	29	29	26	18	22	24	23	29	24	20	21	24	28	24	25	16	29	26	28	21
Up to 5	34	34	35	34	34	37	34	34	36	34	33	43	28	34	36	26	34	35	33	27	42
6 to 15	23	9	21	23	29	24	24	26	20	24	26	18	27	19	26	24	28	19	24	25	20
16 to 25	9	13	6	11	9	9	10	10	10	10	12	9	9	9	7	15	14	7	9	10	9
More than 25	6	5	8	4	8	5	7	7	6	6	6	4	12	6	6	9	6	8	3	7	6
DK/NS	3	10	1	2	2	3	1	1	—	2	3	4	—	4	1	1	1	2	6	3	2

5. The Canadian government, at the federal, provincial and municipal levels, is a large consumer of paper products. Which of the following best reflects your views when it comes to the Canadian government and how they purchase paper?

	TOTAL	EDUCATION				INCOME			REGION TYPE		REGION						AGE			GENDER	
		<HS	HS	PostSec	UGrad	<$30K	$30-59K	$60K+	Rural	Urban	BC	AB	SK/MN	ON	QC	ATL	18-34	35-54	65+	Male	Female
Respondents	1005	111	278	304	288	270	295	272	170	663	154	101	100	300	250	100	326	411	229	466	539
per cent																					
The Canadian government should purchase the least expensive paper available	18	20	21	16	16	20	18	16	18	17	20	16	18	19	14	19	16	19	19	21	15
The Canadian government should make it a priority to purchase environmentally preferable paper product, even if they cost a little more	41	33	40	44	44	33	40	51	40	43	45	51	47	38	36	44	43	43	37	40	42
The Canadian government should purchase environmentally preferable paper at all times	36	32	36	38	35	40	40	31	35	36	28	26	32	35	46	33	40	34	33	34	38
DK/NS	5	16	3	3	6	7	2	2	7	4	6	7	3	7	3	4	2	4	11	6	5

APPENDIX D

Aurora Institute Survey of Institutional Office Paper Purchasers

The following are the results of an on-line survey conducted by the Aurora Institute of the purchasing habits, policies and preferences of members of the Purchasing Management Association of Canada (PMAC) in 2003. PMAC is the national, not-for-profit association and training agency for procurement and supply chain professionals in Canada. The Association has more than 7,000 members working in all sectors of the Canadian economy, including retail, manufacturing and transportation, distribution, government, natural resources and service sectors.

139 responses were received. Respondents answered 85 per cent of the questions on average. While the response rate was law, the results can be said to be broadly representative of the interests of a diverse group of large scale purchasing managers across the country. The survey consisted of four sections: respondent profiles, paper purchasing policies and practices, perceptions of environmentally-preferable papers, and strategies to effect market growth for EPPs.

1. Which of the following most closely describes your role in your organization?

Role	Raw Score	%
VP, Sourcing/Purchasing/Operations	3	2.2
Director of Purchasing	7	5.1
Purchasing Managers	39	28.5
Procurement Officer/Buyer	56	40.9
Staff person (non-management), responsible for purchasing	18	13.1
Sole proprietor	3	2.2
Other	11	8.0

2. What business/institutional sector is your organization involved in?

Sector	Raw Score	%
Government	25	18.8
Non-governmental/charitable organization	10	7.5
Small business	9	6.8
Large private sector office	21	15.8
Educational institution	16	12.0
Printer/paper converter – reseller	2	1.5
Goods manufacturer	20	15.0
Other	30	22.6

3. How many employees do you purchase office paper for?

Score	Number of Employees %	Raw
1-5	8	5.9
6-10	8	5.9
11-25	9	6.7
26-100	21	15.6
101-250	17	12.6
More than 250	59	43.7
Not applicable	13	9.6

4. What is the region of your place of work?

Region	Raw Score	%
British Columbia	35	25.9
Prairie Provinces	47	34.8
Ontario	32	23.7
Quebec	3	2.2
Maritime Provinces	6	4.4
Northern Territories	2	1.5
Other	10	7.4

PAPER PURCHASING PRACTICES

5. Are you the sole purchaser of large amounts of paper at your office?

Response	Raw Score	%
Yes	89	65.9
No	46	34.1

6. How is office paper purchasing managed by your office?

Management Method	Raw Score	%
On an ad hoc basis, by whoever	6	4.5
By department	35	26.5
Management buys	32	24.2
Sent to us by head office	2	2.3
Other	56	42.4

7. Please feel free to elaborate further on how office paper is purchased at your organization. For example, is it centralized or decentralize? (Written comments provided.)

8. What type of supplier is your largest office paper provider?

Type of supplier	Raw Score	%
Big box retailers (e.g. Staples, Office Depot)	38	29.0
Small independent retailers	8	6.1
Dedicated paper merchants/paper distributors	48	36.6
Paper producer (direct sales)	12	9.2
Head office of our organization	2	1.5

9. What percentage of your office paper is purchased from your largest supplier?

Percentage	Raw Score	%
Less than 25 %	7	5.6
26 % - 50 %	3	2.4
51 % - 75 %	11	8.9
76 % - 99 %	60	48.4
100 %	43	34.7

10. For how long has your organization purchased from your current paper supplier?

Length of Time	Raw Score	%
Less than a year	15	11.4
1-2 years	31	23.5
3-5 years	43	32.6
More than 5 years	40	30.3
Not sure	3	2.3

11. If you have changed paper suppliers in the past 5 years, can you give us the major reasons why? (Written comments provided.)

12. Does your supplier actively market recycled and/or chlorine-free paper to you?

Response	Raw Score	%
No	39	29.5
Yes, recycled and chlorine-free paper	28	21.2
Recycled paper only	39	29.5
Not sure	26	19.7

13. Does your organization have a procurement policy specifying the use of recycled and/or chlorine-free paper?

Response	Raw Score	%
No	93	71.0
Yes, recycled and chlorine-free paper	7	5.3
Recycled paper only	20	15.3
Not sure	11	8.4

14. Rating from 1 (highest priority) to 5 (lowest priority), what characteristics are prioritized by your paper procurement policy? If you don't have a procurement policy, use your own purchasing priorities. Please assess each characteristic independently.

Characteristic	1		2		3		4		5		NS	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
Lowest price	52	42.7	34	26.8	27	20.6	8	6.1	6	4.6	—	—
Highest % recycled content	12	9.2	12	9.2	34	26.2	22	16.9	43	33.1	7	5.4
Highest % chlorine free	5	3.8	4	3.1	26	19.8	23	17.6	51	38.9	22	16.8
Consistently available supply	65	49.2	37	28.0	13	9.8	5	3.8	10	7.6	2	1.5
Ease/Flexibility of delivery	53	41.1	42	32.6	15	11.6	10	7.8	8	6.2	1	0.8
Canadian made	17	12.9	22	16.7	31	23.5	17	12.9	41	31.1	4	3
No old growth forest fibre	9	6.9	2	1.5	21	16.2	18	13.8	54	41.5	26	20.0
Quality and utility in office machines	65	49.6	34	26.0	13	9.9	12	9.2	6	4.6	1	0.8
Visible appearance of papers	27	20.8	45	34.6	31	23.8	12	9.2	12	9.2	3	2.3
Union made	8	6.1	5	3.8	8	6.1	8	6.1	95	71.0	9	6.9

15. Please rank the following office paper types in the order of how much of an expense they are to your organization, from 1 (highest expense) to 6 (lowest expense).

Paper Types	1		2		3		4		5		6		7		NS	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
Bulk copy/ printing paper	75	59.5	27	21.4	7	5.6	1	0.8	3	2.4	4	3.2	4	3.2	5	4.8
Business forms	9	7.2	23	18.4	18	14.4	14	11.2	18	14.4	16	12.8	17	16.0	7	5.6
Small envelopes	2	1.6	19	15.2	23	18.4	23	18.4	22	17.6	18	14.4	13	10.4	2	1.6
Large (manila) envelopes	1	0.8	8	6.5	16	12.9	23	18.5	28	22.6	23	18.5	20	16.1	5	4.0
Business cards	3	2.4	6	4.9	13	10.6	19	15.4	24	19.5	25	20.3	29	23.6	4	3.3
Letterhead	7	5.6	21	16.8	27	21.6	19	15.2	24	19.2	14	11.2	8	6.4	5	4.0
Promotional materials	17	13.7	21	16.9	18	14.5	8	6.5	13	10.5	18	14.5	23	18.5	6	4.8

16. Paper purchases make up what percentage of your overall office supply costs?

Paper purchases as % of total office supply costs	Raw Score	%
0 % – 2.5 %	6	4.5
2.6 % - 5.0 %	11	8.3
6.0 % - 10.0 %	19	14.4
11 % - 20 %	20	15.2
More than 20 %	43	32.6
Not sure	33	25.0

17. How much office copy/printing paper (in 5000 sheet cases) does your organization purchase in a given month/quarter/year? (Written comments provided.)

18. Using the same timeline indicated in the previous question, what are the total costs of your office copy/printing paper purchases per month/quarter/year. (Written comments provided.)

19. What percentage of your current office copy/printing paper purchases contain *at least 30 %* post-consumer recycled content?

Percentage containing at least 30 % PCW	Raw Score	%
None	21	16.2
1.0 % - 5.0 %	11	8.5
6.0 % - 10.0 %	8	6.2
11.0 % - 20.0 %	9	6.9
21.0 % - 50.0 %	9	6.9
More than 50.0 %	24	18.5
Not sure	48	36.9

20. Please name the brand names of paper you purchase that has recycled content. Be as detailed as possible here, including recycled content levels if you know them. (Written comments provided.)

21. Please identify the sources of any complaints you have heard about the characteristics of recycled and chlorine-free papers. You may choose multiple responses here.

Sources of complaints	*Raw Score*	%
Co-workers	27	19.7
Other purchasing managers	11	8.0
Personal experience	17	12.4
Office paper suppliers	15	10.9
Office machine distributors	28	20.4
Office machine maintenance technicians	39	28.5
Paper industry literature or representatives	6	4.4
Other	11	8.0
No complaints	54	39.4

22. Please give a description of any specific concerns you have had with recycled office copy/writing paper. Be as detailed as possible. (Written comments provided.)

23. Please rank the following critiques according to their priority as potential reasons for you to *not* purchase recycled or chlorine-free papers. Rank from (1) most important to (6) least important. Click only once for each rank.

Critique	1		2		3		4		5		6		NS	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
Higher price	62	50.4	21	17.1	5	4.1	13	10.6	2	1.6	6	4.9	14	11.4
Not carried by office supplier	12	10.3	9	7.8	10	8.6	12	10.3	17	14.7	34	29.3	22	19.0
Not consistently available in large enough quantities	8	6.8	19	16.1	14	11.9	17	14.4	15	12.7	20	16.9	25	21.2
Weak performance in office machines	35	29.2	20	16.7	16	13.3	13	10.8	4	3.3	10	8.3	21	18.3
No evidence it is better for the environment	13	10.8	9	7.5	3	15.0	14	11.7	12	10.0	31	25.8	23	19.2
Non-attractive appearance of paper	19	15.8	23	19.2	14	11.7	12	10.0	15	12.5	17	14.2	20	16.7

24. For each statement, please indicate whether there is any discernible difference between recycled and non-recycled office paper, by clicking the most appropriate response. (VF = virgin fibre papers, RC = recycled content papers, NDD = no discernable difference, NS = not sure)

Response	VF		RC		NDD		NS	
	RS	%	RS	%	RS	%	RS	%
This type of paper makes for better quality of fine image printing	32	23.9	1	0.7	47	34.3	45	32.8
This type of paper makes for better quality photocopying	40	29.2	2	1.5	40	32.1	44	29.2
This type of paper is less apt to jam in office machines	46	33.6	1	0.7	32	23.4	46	33.6
This type of paper produces less paper dust	39	28.5	3	2.2	22	19.7	55	40.1
This type of paper is the most visually appealing to our customers	40	29.2	5	3.6	37	27.0	43	31.4

25. If you do purchase recycled paper, indicate the importance of each of the following factors in your choice to do so. (VI = very important, SI = somewhat important, NI = not important, NS = not sure)

Response	VI		SI		NI		NS	
	RS	%	RS	%	RS	%	RS	%
Personal commitment to recycling	39	44.8	33	37.9	8	9.2	7	8.0
Personal concern about environment	41	47.7	34	39.5	4	4.7	7	8.1
Organizational commitment to recycling	40	46.0	32	36.8	8	9.2	7	8.0
Organizational concern about environment	37	42.5	35	40.2	8	9.2	7	8.0
Written corporate policy requiring a certain amount of recycled content	18	20.9	19	22.1	29	33.7	20	23.3
Image issues with clientele	32	36.8	23	26.4	22	25.3	10	11.5
Pressure from in-house staff to change	13	14.9	29	33.3	33	37.9	12	13.8
Quality and utility vs. virgin fibre papers	29	33.3	26	29.9	15	17.2	17	19.5
Price vs. virgin fibre papers	43	50.0	23	26.7	8	9.3	12	14.0

26. Is your organization willing to pay extra for recycled/chlorine-free paper?

Response	Raw Score	%
Yes	24	18.9
No	56	44.1
Not sure	47	37.0

27. If your organization is willing to pay extra, how much is acceptable?

Response	Raw Score	%
Not willing	22	33.3
Less than 5 %	10	15.2
5.0 % - 10.0 %	13	19.7
11.0 % - 20.0 %	2	3.0
More than 20.0 %	4	6.1
Not sure	15	22.7

28. As an individual, are you willing to pay extra for recycled/chlorine-free paper?

Response	Raw Score	%
Yes	54	42.5
No	53	41.7
Not sure	20	15.7

29. If you are willing to pay extra, how much is acceptable?

Response	Raw Score	%
Less than 5 %	35	47.9
5.0 % - 10.0 %	23	31.5
11.0 % - 20.0 %	4	5.5
More than 20.0 %	3	4.1
Not sure	8	11.0

30. If cost were not an issue, would you choose recycled or other EPP over paper that don't have those attributes?

Response	Raw Score	%
Always	61	48.8
Sometimes	42	33.6
Never	1	0.8
Not sure	21	16.8

31. Please indicate in the space provided what considerations other than cost might hold you back from purchasing recycled/chlorine-free papers? (Written comments provided.)

32. In your estimation, by what percentage does recycled paper currently cost more than virgin fibre paper of a similar quality?

Response	Raw Score	%
Recycled papers are cheaper	5	4.0
No difference	5	4.0
Less than 5 %	13	10.5
5.0 % - 10.0 %	34	27.4
11.0 % - 20.0 %	23	18.5
More than 20.0 %	9	7.3
Not sure	35	28.2

33. In your estimation, what percentage of current office paper produced in North America have at least 30 % post-consumer recycled content?

Response	Raw Score	%
None	1	0.8
Less than 5 %	14	11.8
5.0 % - 10.0 %	22	18.5
11.0 % - 20.0 %	15	12.6
More than 20.0 %	16	13.4
Not sure	51	42.9

34. Assuming all other factors (e.g. price, quality) were equal, please *rank* the following environmentally preferable paper attributes in the order they would sway your purchasing choice, from (1) most important to (5) least important.

Attribute	1		2		3		4		5		NS	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
Ancient-forest free (No old growth forest fibre)	41	34.7	23	19.5	16	13.6	8	6.8	7	5.9	23	19.5
Certified chlorine-free	32	26.7	29	24.2	13	10.8	14	11.7	7	5.8	25	20.8
Independently certified forest practices for the fibre source	23	19.2	30	25.0	22	18.3	9	7.5	8	6.7	28	23.3
Tree-free (for example, agricultural waste or hemp) paper	22	18.5	21	17.6	19	16.0	10	8.4	17	14.3	30	25.2
High post-consumer recycled content	42	34.7	26	21.5	14	11.6	10	8.3	5	4.1	24	19.8

35. Rating from 1 to 5, where 1 is very important and 5 is not at all important, please indicate how important you think each of the following actions is for the promotion of EPP (here called EPP) in Canada. Note: This is not a ranking question. Assess each action independently.

Action	1		2		3		4		5		NS	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
Industry should modernize to make more EPP	37	30.6	36	29.8	26	21.5	8	6.6	5	4.1	9	7.4
Industry should include recycled content in all their paper	42	34.4	38	31.1	18	14.8	7	5.7	10	8.2	7	5.7
Industry should promote and advertise EPP more	42	34.4	32	26.2	19	15.6	13	10.8	10	8.2	6	4.9
Retailers and printers should stock more EPP	37	30.6	28	23.1	29	24.0	13	10.7	7	5.8	7	5.8
Retailers and printers should promote and advertise EPP more	41	33.6	28	23.0	22	18.0	17	13.9	9	7.4	5	4.1
Government should mandate EPP purchase by public organizations	35	28.9	18	14.9	21	17.4	16	13.2	26	21.5	5	4.1
Government should mandate more manufacture of EPP	27	22.9	14	11.9	28	23.7	20	16.9	23	19.5	6	5.1
Environmental/advocacy groups should educate buyers about EPP	29	24.4	34	28.6	25	21.0	17	14.3	10	8.4	4	3.4
Buyers should educate themselves about EPP	33	27.5	29	32.5	24	20.0	15	12.5	6	5.0	3	2.5
Government should educate buyers about EPP	26	21.7	29	24.2	27	22.5	15	12.5	20	16.7	3	2.5
Buyers should buy EPP even when costs are higher	11	9.2	14	11.8	20	16.8	22	18.5	44	37.0	8	6.7

36. Please rate the level of trust you would have, from 1 (high trust) to 5 (low trust), in information provided to you on EPP issues by the following groups. Note: This is not a ranking question. Assess each group independently.

Group	1		2		3		4		5		NS	
	RS	%	RS	%	RS	%	RS	%	RS	%	RS	%
Federal government ministry of environment	20	6.7	30	25.0	40	33.3	19	15.8	6	5.0	5	4.2
Federal government office of consumer affairs	17	14.3	36	30.3	33	27.7	21	17.6	5	4.2	7	5.9
Provincial government ministries	11	9.2	35	29.4	35	29.4	22	18.5	10	8.4	6	5.0
Environmental Non-Profit Organizations	19	16.0	25	21.0	38	31.9	21	17.6	13	10.9	3	2.5
Recycling Councils	26	21.8	33	27.7	24	28.6	17	14.3	5	4.2	4	3.2
Paper producers	5	4.2	35	29.2	28	31.7	25	20.8	15	12.5	2	1.7
Big box retailers/office suppliers	7	5.9	20	16.8	33	27.7	38	31.9	18	15.1	3	2.5
Purchaser Associations (e.g. PMAC)	43	35.8	41	34.2	22	18.3	9	7.5	2	1.7	3	2.5

37)In your opinion, what (if any. are the advantages for organizations that do buy recycled and other EPP products over organizations that do not? (Written comments provided.)

APPENDIX E

A Common Vision for Transforming the Paper Industry

Striving for Environmental and Social Sustainability

[Insert pdf document entitled "Common Vision Final"]

AURORA INSTITUTE

The Aurora Institute is a charitable, national, non-partisan organization. The mission of the Aurora Institute is to conduct innovative research and provide public education on the role and structure of public and private institutions in a democratic society. You can learn more about the Aurora Institute by visiting our website at www.aurora.ca.

Reach for Unbleached! Foundation

Reach for Unbleached! Foundation is a Canadian registered charity, working for clean air, clean water, and clean paper since 1991. Reach for Unbleached! empowers people to change the technology by which paper is manufactured, through consumer education and the use of accurate scientific information. We believe action by consumers is one of the most effective tools for a speedy end to toxic contamination of our air and water. You can learn more about Reach for Unbleached! by visiting www.rfu.org.

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