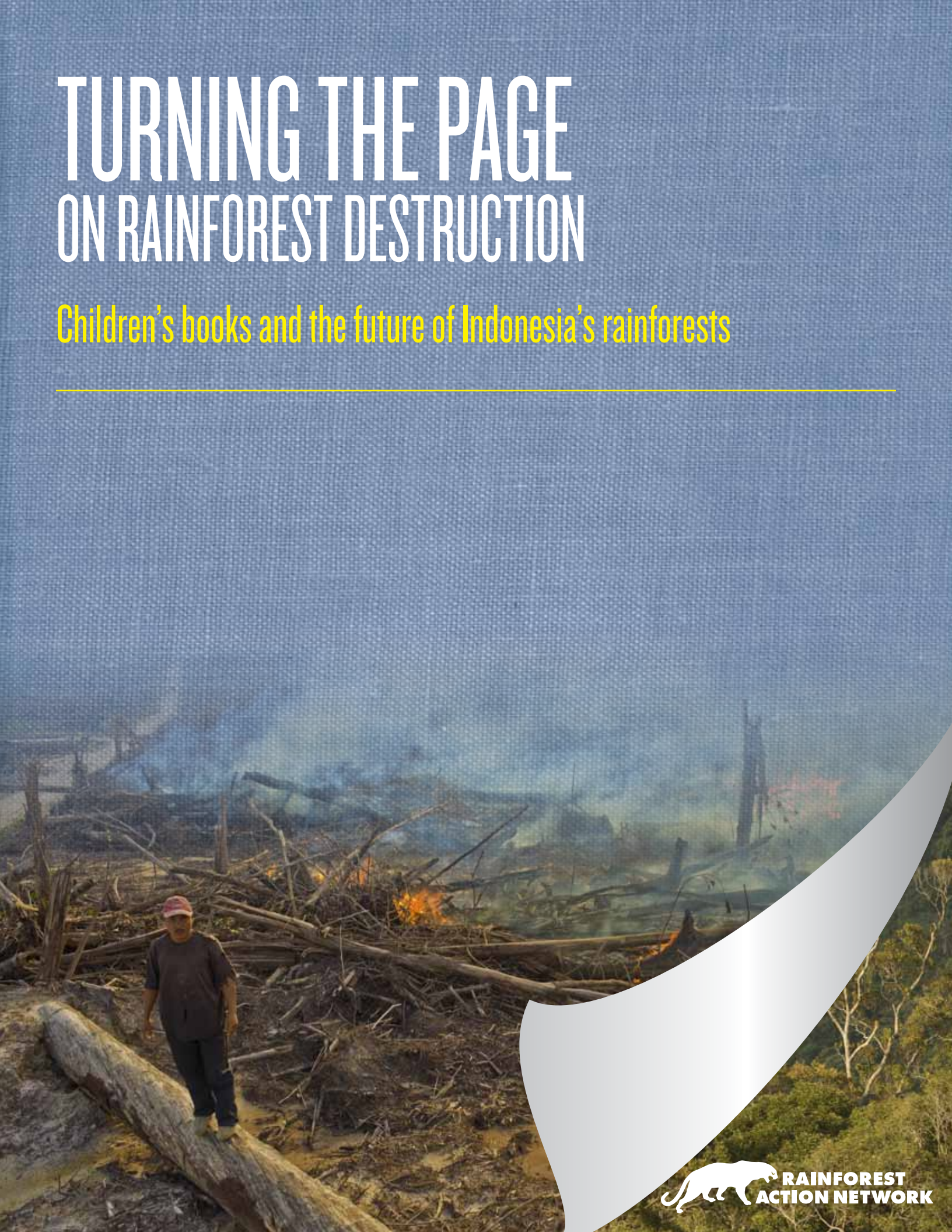
TURNING THE PAGE
ON RAINFOREST DESTRUCTION

Children's books and the future of Indonesia's rainforests



RAINFOREST ACTION NETWORK

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3
INTRODUCTION 6
INDONESIA'S FORESTS 7
RAINFOREST PAPER IN CHILDREN'S BOOKS 8
INDONESIA'S PULP AND PAPER INDUSTRY 10
WHY U.S. PUBLISHERS ARE FAILING INDONESIA'S FORESTS 15
STRATEGIES FOR CHANGE 18
CONCLUSION 21
ENDNOTES 22

EXECUTIVE SUMMARY

From stopping littering to addressing climate change, stories found in children's books often help instill the first concepts of environmental stewardship. Ironically, a growing number of these books are made from paper linked to the destruction of Indonesia's rainforests. Independent laboratory testing commissioned by Rainforest Action Network found wood fiber linked to the clearing and conversion of Indonesia's rainforests in the paper of some of America's favorite children's books.

Five out of the top ten American children's book publishers have public environmental and paper procurement policies that pledge to reduce the companies' impact on the climate, protect endangered forests, increase the use of recycled and FSC certified fiber and maximize resource efficiency. However, despite these important policy commitments, wood fiber from Indonesia is ending up in children's books.

Unchecked by government or industry, pulp and paper companies are razing natural rainforests on the Indonesian islands of Borneo and Sumatra and replacing them with acacia pulp wood plantations. This expansion of the pulp sector directly threatens endangered species like tigers, elephants and orangutans with extinction in Sumatra. It is causing ongoing conflicts with local communities whose lands, livelihoods and rights are being usurped, and it is causing massive greenhouse gas emissions from rainforest loss and drainage of carbon-rich peatlands. Driven by global demand for pulp and paper that favors "low-cost" producers, the enormous emissions from the destruction of Indonesia's rainforests and peatlands have vaulted the country into the rank of the world's third largest greenhouse gas emitter after China and the U.S. Moreover, at least half of the logging in Indonesia takes place illegally.[1] These factors combine to make Indonesia among the most risky of supplier nations.

9 / 10

publishers are selling books wtih paper that threatens Indonesia's rainforests

With the rapid growth of book printing and manufacturing being outsourced to China, the U.S. book industry has become increasingly vulnerable to controversial paper sources entering its supply chain. China is the top importer of Indonesian pulp and paper and much of the Chinese paper industry is linked to or controlled by highly controversial Indonesian pulp and paper suppliers, Asia Pulp and Paper (APP) and Asia Pacific Resources International (APRIL), which together account for 80 percent of Indonesia's production.[2] From 2000-2008, Chinese sales of children's picture books to the U.S. ballooned by more than 290 percent, averaging an increase of more than 35 percent per year.[3]

In order to investigate the prevalence of controversial wood sources likely coming from Indonesia's rainforests in the U.S. children's book market, Rainforest Action Network had 30 children's books that were manufactured in China tested by an independent laboratory to ascertain whether they contained fiber from acacia plantations or rainforests. The sample included three randomly selected color children's books printed on glossy or coated paper in China from each of the top ten U.S. children's publishers. Through our research Rainforest Action Network found that:

- **Sixty percent** of children's books tested contained paper with controversial wood fiber linked to Indonesian rainforest destruction.
- **Nine of the ten** leading publishers of children's books are selling books manufactured on paper that threatens Indonesia's rainforests.
- Publishers with paper policies and climate commitments had a **similar percentage** of books containing controversial fiber to publishers without policies.
- Industry paper policies and best practices are **currently lacking the capacity** or failing to screen out fiber that is sourced from endangered forests or from controversial sources and suppliers.

Although our sample was relatively small and selected at random, it is notable that more than half of the books and nine of 10 book publishers had fiber linked to Indonesian rainforest destruction in their books. It is highly likely indicative of a larger trend in the publishing industry. Without urgent action to remedy these problems, fiber linked to Indonesian rainforest destruction will continue to find its way into American children's books.

RECOMMENDATIONS

The results of RAN's fiber testing indicate that the current policies, due diligence procedures and procurement practices of leading publishers are failing to prevent fiber from rainforest destruction from finding its way into children's books. Noting the urgent need to prioritize action to address Indonesian rainforest destruction and mitigate climate change, Rainforest Action Network recommends that publishers:

Understand and Require Transparency in the Supply Chain

- Undertake supply chain due diligence including knowing your suppliers and, if applicable, tracing their suppliers back to the forest of origin. All suppliers should be able to disclose and verify the geographical origin, fiber content and the manufacturer(s) of papers used.
- Make a plan and timeline to phase out any products from High Conservation Value and Endangered Forests, high carbon forests, areas with social conflict and other controversial sources or suppliers. Adopt a precautionary approach by phasing out unknown sources and conducting regular fiber testing on paper used.
- Require overseas printers or other vendors making forest product procurement decisions for the company to understand and require transparency in the supply chain.

Eliminate Controversial Paper, Fiber and Suppliers

- Eliminate fiber and papers from high risk regions like Indonesia, High Conservation Value and Endangered Forests, high carbon forests or drained high carbon peatlands, areas with social conflict and other controversial sources[4] until key reforms have been adopted and independently verified.
- Sever all financial and supply chain ties with APP, APRIL and affiliated companies until key reforms have been adopted and independently verified.
- Require overseas printers or other vendors making forest product procurement decisions for the company to eliminate controversial paper, fiber and suppliers.

Adopt Best Practices and Source Environmentally and Socially Responsible Paper

- Maximize efficient use of paper and resources as part of efforts to reduce paper consumption.
- Maximize the recycled content in books and all paper used.
- Ensure that any fiber or paper used is from areas where the Free, Prior and Informed Consent of forest communities that have tenure or rights to the area has been given and from suppliers that respect international labor standards developed by the UN International Labor Organization.
- Ensure that any virgin tree fiber used originates from Forest Stewardship Council (FSC) certified forestry operations.
- Give preference to paper and paper products processed without chlorine or chlorine compounds (i.e. "processed chlorine free" or "totally chlorine free" papers).
- Require overseas printers or other vendors making paper procurement decisions to adopt best practices and source environmentally and socially responsible paper.

Become an Advocate for Solutions to Indonesian Rainforest and Endangered Forest Destruction

- Work with Rainforest Action Network to strengthen or develop a leadership environmental and procurement policy with an action plan including performance targets, timelines and public reporting commitments that will guide the company's procurement and supply chain actions.
- Educate and secure participation of employees in using and implementing the policy and include performance in meeting the company's environmental goals in annual performance reviews.
- Work with supply chain partners and stakeholders to research and develop more environmentally and socially responsible paper and reduced environmental footprint alternatives and options.
- Do outreach with peers, customers, policy makers, media and other influencers to advocate for the protection of Indonesian rainforests and other endangered forests and mitigating climate change.

INTRODUCTION

Many leading U.S. publishers have taken action to address their environmental and carbon footprint. Acknowledging their role as major paper consumers, a number of book publishers have implemented paper procurement policies intended to reduce their climate impacts, protect endangered forests, maximize their resource efficiency and increase their use of recycled and FSC certified fiber. According to Green Press Initiative, more than 140 publishers in the United States have environmental policies or commitments. Of the top ten American children's book publishers, five companies have public paper procurement policies.

Despite these efforts, fiber from areas that were once vibrant rainforests is slipping into children's books sold in the United States.

Fiber from areas that were once vibrant rainforests is slipping into children's books sold in the United States

This report examines how the growing demand by U.S. publishers for children's books printed in China is helping to drive the destruction of Indonesia's rainforests and forest communities and exacerbating climate change. Specifically, it investigates current supply chain practices that are exposing the U.S. book industry to irresponsible environmental and social practices and analyzes the U.S. children's book industry through the fiber testing of 30 children's color picture books printed on glossy or coated paper. Through our research Rainforest Action Network found that:

Sixty percent of children's books tested contained paper with controversial wood fiber linked to Indonesian rainforest destruction.

Nine of the ten leading publishers of children's books are selling books manufactured on paper that threatens Indonesian rainforests.

Publishers with paper policies and climate commitments had a similar percentage of books containing controversial fiber to publishers without policies.

Industry paper policies and best practices are currently lacking the capacity or failing to screen out fiber that is sourced from endangered forests or controversial sources and suppliers.

INDONESIA'S FORESTS

WHAT'S AT STAKE?

Indonesia is the world's largest archipelago – almost 18,000 islands spreading between the Pacific and Indian Oceans – and houses the world's third largest stand of tropical rainforests, after the Amazon and Congo basins.

Indonesia's forests are a hotspot of world diversity, home to hundreds of distinct cultures. Millions of people depend on Indonesia's forests for their livelihoods and cultural identity. In 2000, Indonesia's forestry ministry stated that 30 million people rely directly on the forest for their livelihoods.[5] The cultural value of rainforests to forest dependent communities is unquantifiable, but undoubtedly the benefits the forests provide are worth billions of dollars.

With only slightly more than one percent of the Earth's land area, Indonesia's archipelago is also a biological treasure trove. The rainforests of Indonesia contain a staggering portion of the world's plant and animal species – including 11 percent of the world's plant species, 10 percent of its mammal species, and 16 percent of its bird species.[6] This diversity includes some of the world's most iconic endangered species including orangutans, Sumatran tigers, Sumatran rhinoceroses and Sumatran elephants. And, there is still much to be discovered. The Indonesian Ministry of the Environment estimates that more than half of Indonesia's species are still unrecorded.[7]

Indonesia's forests also provide a variety of environmental services, including soil retention, watershed protection and carbon storage. In fact, Indonesia has some of the most carbon-rich forests and peat lands in the world and therefore, from a climate perspective, some of the most globally important forests to protect.

However, Indonesia's rainforests are being lost at an unprecedented rate. Today, just under half of Indonesia's original forest-cover remains and the remaining forests are under threat as international demand for cheap commodities like paper continues to incentivize deforestation. The Indonesian Ministries of Forestry and Agriculture and their counterparts in industry have plans to convert up to 70 million additional acres of natural rainforest and peat lands into commodity plantations over the next decade, making Indonesia the most critical region to stop tropical forest destruction and prevent climate change.[8]

RAINFOREST PAPER IN CHILDREN'S BOOKS

The publishing industry is considered progressive — at the forefront of conveying the ideas and values that shape our culture. However, despite environmental commitments and policies by more than 140 publishers in the United States, fiber linked to the destruction of Indonesia's rainforests is finding its way into many U.S. publishers' supply chains, often through their overseas printers. Rainforest Action Network analyzed the prevalence of Indonesian fiber in U.S. children's books through the fiber testing of 30 children's picture books as well as through the investigation of current trends in printing, paper manufacturing, and supply chain practices. This analysis provides foundation to explain how and why a forward-looking industry like the publishing industry could be contributing to the loss of some of the most endangered forests in the world and what might be done to change it.

> Nine of the top ten U.S. children's book publishers had at least one in three books test positive for tropical wood fibers linked to the clearing and conversion of Indonesia's rainforests

CHILDREN'S BOOKS FIBER TESTING: METHODS AND RESULTS

In order to investigate the incidence of tropical wood types and Indonesian fiber in U.S. children's books, Rainforest Action Network randomly selected three children's books, all of which were in color, printed on coated paper and manufactured in China, from each of the top ten U.S. children's book publishers.[9] The books were sent to Integrated Paper Services (IPS) laboratory in Appleton, Wisconsin, where their papers were analyzed to determine their wood fiber composition. Over the course of November 2009 to April 2010, thirty books were tested by IPS laboratory for this study. Each sample was analyzed for tropical wood types, including tree species that occur in natural tropical forests and plantation-grown acacia.

In total, 18 of 30 books, or 60 percent, tested positive for significant percentages of tropical wood types. In 18 of 18 samples that tested positive, acacia fiber was found. In four of the 18 samples that tested positive, mixed tropical hardwoods fiber, or fiber from natural tropical forests, was also found. See the table on page 9 for details.

In our testing results, nine of the top ten U.S. children's book publishers had at least one in three books that tested positive for tropical wood fibers linked to the clearing and conversion of Indonesia's rainforests. For a number of these publishers, the presence of mixed tropical hardwoods and acacia fibers contravenes their own paper procurement policies. However, the incidence of tropical wood fibers in publishers' books without policies was also high. Of all ten publishers, only one was found to have no fibers linked to rainforest destruction in the three book sample.[10]

AN AMERICAN PROBLEM

PUBLISHER	POSITIVE FOR ACACIA			POSITIVE FOR MIXED TROPICAL HARDWOODS			PAPER POLICY?
	Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	
A							
B	10%	21%	13%			13%	
C	56%	34%	11%	43%		5%	•
D	52%	37%					
E	51%	9%					
F		TRACE	18%				
G	48%	45%					•
H	10%	12%	13%	8%			•
I	5%						•
J			13%				•

This study only analyzed one randomly selected page from the main body of each of the books. The wood fibers of the book covers and any other papers in the books were not analyzed. However, a similar study done by the WWF Germany suggests that book covers likely contain significant amounts of tropical wood types as well. Their study, which tested book papers and covers of 51 popular German children's books, found 19, or nearly 40 percent, to contain mixed tropical hardwoods.[11] Of the 19 books found to contain mixed tropical hardwoods, nine had mixed tropical hardwoods in their covers.[12] Their study did not include the results for acacia fibers.

INDONESIA'S PULP AND PAPER INDUSTRY

Indonesia's forest products industry is internationally renowned for its corruption and high rates of illegal logging as well as for its devastating impacts on biodiversity, forest communities and the climate. The pulp and paper sector uses approximately half the wood harvested in Indonesia and has become the fastest growing sector of Indonesia's forest products industry. However, most Indonesian pulp is being produced in unsustainable and sometimes illegal ways. This is true even of plantation fiber, which has its own set of negative impacts. For these reasons, all fiber sourced from Indonesia or from Indonesian suppliers should be considered highly controversial.

CONTROVERSIAL SUPPLIERS:

APP AND APRIL

The vast majority of Indonesia's pulp and paper is produced by two large and controversial suppliers: APP and APRIL. Together, they produce approximately 80 percent of Indonesia's pulp and paper, and over the past decade both have become notorious for their widespread, rapacious destruction of Indonesia's rainforests.[13] APP and APRIL both have aggressive land acquisition and expansion plans that would destroy natural rainforests in areas from South Sumatra, across Kalimantan to Papua, posing a direct threat to the last of Indonesia's rainforests.[14]

In addition to being environmentally unsustainable, Indonesia's two major paper producers have proven themselves financially unaccountable. In the early 2000s, after a series of debt-fueled land acquisitions and mill expansions, APP defaulted on $13.9 billion and APRIL on $4 billion.[15] In March 2001, APP announced a standstill on all debt repayments and was de-listed from the New York and Singapore stock exchanges.[16]

Neither APP nor APRIL meets the Forest Stewardship Council's (FSC) standards for environmental and social performance. The FSC, regarded as the most credible third party certification for forest products, "dissociated" itself from APP in 2007, citing "substantial publicly available information that suggests that APP is associated with destructive forestry practices."[17] Rainforest Alliance's Smart Wood, an independent certification body which had been conducting High Conservation Value Forest audits of some APP operations, also cut ties with APP due to failure to abide by their contract and stakeholder criticisms of the company's continued conversion of High Conservation Value Forests in Indonesia.[18] In April 2010, Rainforest Alliance's Smart Wood suspended APRIL's interim certification. The disciplinary action came after APRIL was found to have violated agreements with SmartWood and failed to meet FSC's controlled wood standard prohibiting the conversion of natural forests to plantations, the destruction of High Conservation Value Forests, including peatlands, and conflicts with forest dependent communities.[19]

The Indonesian pulp and paper industry has continuously broken promises to their customers and environmental organizations. For example, the World Wildlife Fund (WWF) tried to work with APP in 2001 to develop a sustainable business model.[20] In 2004, after the company had repeatedly failed to make good on its promised commitments, WWF

concluded the collaboration was a failure and cut off all ties.[21] WWF tried to re-engage with APP again in 2006; however, there was no change in the company's philosophy and practices.[22]

The U.S. Department of Commerce is investigating APP for unfair trade practices including possible links to illegal logging. In March 2010, the investigation's preliminary findings were in favor of the plaintiffs, and the Department of Commerce imposed preliminary duties on $273 million (USD) of glossy paper imported from China and Indonesia because of unfair subsidies. The countervailing duties average 8.4 percent for China and 17.5 percent for Indonesia.[23]

Perhaps most telling, large paper consumers around the world have determined that APP and APRIL are unsatisfactory suppliers and that buying paper from APP and APRIL incurs too much risk for their business and their brands. In 2009, Finnish global paper giant UPM-Kymmene cancelled its estimated $55 million contract with APRIL.[24] In January 2008, Staples Inc., the largest U.S. office supply chain, joined a growing number of paper buyers that have ended their relationships with APP, saying that remaining a customer of APP was "at great peril to (its) brand."[25] Office Depot, Woolworths Ltd. (Australia), Fuji Xerox, Ricoh, Corporate Express, Metro Group, Tiffany and Co., Gucci Group, Target, and Unisource have also cancelled contracts with or cut ties with APP.[26]

CONTROVERSIAL FIBER:
RAINFOREST DESTRUCTION AND HIGH RISK PLANTATIONS

Indonesian fiber from rainforests and plantations is coming from a system of forest destruction that is unsustainable. It is devastating local communities, threatening elephant, tiger and orangutan populations with extinction, and emitting massive amounts of greenhouse gases.

> The vast majority of Indonesia's pulp and paper is produced by two large and controversial suppliers: APP and APRIL

Deforestation in Indonesia is largely the result of a corrupt political and economic system that regards natural resources, especially forests, as a source of revenue to be exploited for political ends and personal gain. Logging concessions covering more than half the country's total forest area were awarded by former Indonesian President Suharto's government, many of them to his relatives and political allies.[27] This is a pattern that continues today: cronyism in the forestry sector has left companies free to operate with little regard for community rights or livelihoods or for long-term sustainability of production. As a result, Indonesia's rainforests have been cleared on a massive scale and sold as cheap commodities to international markets with few benefits to the nation.

A SYSTEM OF RAINFOREST DESTRUCTION

Both APP and APRIL have made and broken commitments to the Indonesian government to become fiber self-reliant through establishing acacia plantations. After twenty years of pulp production and forestry operations, APP and APRIL have not planted sufficient pulp wood plantations to support their growing pulp-and-paper production capacity.[33] Lacking enough plantation-grown acacia to feed their mills and factories, APP and APRIL continue to use natural forests as feedstocks for their massive pulp mills.

Within this system, the creation of plantations has become an excuse to cut down more natural forests. It is estimated that Indonesia's pulp and paper industry still sources 40-60 percent of its fiber from clearing natural forests.[34] Industry land acquisition and mill expansion plans suggest this pattern will continue, encouraged by purchases of plantation fiber.

Illegal logging in Indonesia is commonplace, in part, as a result of the country's chronic structural imbalance between legal wood supply and demand caused by excessive mill capacity. Illegal logging, by definition, is not accurately documented, but estimates put the rate of illegal logging in Indonesia at over 50 percent.[28] Massive expansion in the plywood, pulp, and paper production sectors over the past decades has meant that demand for wood fiber far exceeds legal supplies. In the early 2000s, demand exceeded supply by as much as 35-40 million cubic meters per year.[29] Human Rights Watch estimates that Indonesia loses two billion U.S. dollars in tax revenue per year from illegal logging – enough to provide health care for 100 million Indonesians.[30]

PROBLEMS WITH PLANTATION FIBER

Indonesia's pulp and paper industry has grown extremely rapidly over the past two decades and along with it, so has the development of pulpwood plantations. Due to its low maintenance cost and high productivity in the tropics, acacia mangium has emerged as the Indonesian pulp and paper industry's plantation species of choice, and it now comprises a significant portion of the industry's overall fiber basket. Global pulp experts estimate that 90 percent of the global acacia fiber supply is from Indonesia.[31] The Indonesian government has widely promoted and subsidized acacia plantations as a means of supplying Indonesia's booming demand for pulp and taking pressure off natural forests.[32] In practice, however, acacia plantations are part of a system of ongoing rainforest destruction and corrupt land acquisition by private sector and government elites.

Understanding how industrial pulpwood plantations are created in Indonesia sheds light on the persistent problems with their development. In the case of a legally permitted plantation, a company first seeks a license from the government officials based in Indonesia's capitol, Jakarta. Far from the actual forest areas, national government officials work with the company to select an area for plantation conversion. A license is granted, usually without adequate assessment of the land's cultural, environmental or economic value. Worse, communities who live on the land are rarely consulted, and their traditional land rights are often ignored. After the li-

Over 50%

of logging in Indonesia is estimated to be illegal

cense is obtained, the company enters a permitted area, often displacing community farms and dwellings, clearing existing rainforests, and draining peatlands. This leads to the eradication and decline of animal and plant species, loss of livelihoods, conflict with local communities and large releases of carbon into the atmosphere.

Biodiversity and Environmental Services

While both rainforests and acacia plantations contain trees, they are vastly different ecosystems. As forests are converted to plantations, most plant life is exterminated in order to make way for a single tree species, planted in homogenous blocks. Without the shelter and food found in natural forests, most animals cannot survive. This is a key reason why many of Indonesia's most iconic mammals are endangered, or in some cases, extinct. Habitat fragmentation and conversion caused by clear-cutting natural forests and developing plantations have forced orangutans, Sumatran tigers, elephants and rhinoceros into small islands of remaining natural forest for survival. Acacia plantations also fail to maintain key environmental services including soil retention and watershed protection.

Persistent Social Conflict

The clearing and conversion of natural forests for acacia plantations frequently brings paper companies into conflict with forest dependent communities. Often licenses are given to develop plantations on communities' ancestral lands, and lands are taken by companies without any consultation or compensation. This practice effectively displaces communities from their lands and farms, undermining their livelihoods. With ancestral rights and tenure an uncertain area in Indonesian law, conflict between plantation developers and forest dependent communities is increasing.

COMMUNITY EVICTED BY FORCE IN APP PLANTATION

In December 2008, Riau police destroyed 500 homes in a village that had been in a land dispute with APP subsidiary Arara Abadi over acacia plantation expansion for the past several years. According to news accounts and the Indonesian National Commission on Human Rights, homes were firebombed from helicopters and villagers arrested or evicted.[35]

INDONESIA'S PEATLANDS: GLOBALLY SIGNIFICANT, CRITICALLY THREATENED

Indonesia's peatlands have low population density and contain some of the largest remaining areas of natural rainforest. This makes them attractive to the pulp and paper industry, and about half of Indonesia's acacia pulp wood plantations have been allocated on deep peatlands.[42] In order to create pulpwood plantations on peatlands, these water-saturated ecosystems must first be drained. This causes the newly-dried peat to decompose, releasing massive greenhouse gas emissions. The peat is then susceptible to burning, which contributes additional carbon to the atmosphere. The draining, drying, and burning of peat soils by the plantation industry have played a key role in Indonesia's massive greenhouse gas emissions profile.[43] Worse yet, these emissions continue for the life of every acacia plantation located on peatlands, making the carbon footprint of papers made with Indonesian fiber among the highest in the world.

Questionable Legality

For many of the same reasons that forests can be illegally logged, many so-called plantations are actually never created. Millions of hectares of natural forest have been cleared to make way for plantations that, in 75 percent of cases, are never actually planted.[36] In the cases where plantations are established, pulp and paper companies sometimes begin clearing forests and planting without legal title or required permits. For example, in 2007 and 2008 Riau police brought indictments for "environmental destruction and illegal logging" against 14 companies, including 8 associated with APP and 6 linked to APRIL.[37]

Indonesia has some of the most carbon-rich stands of tropical rainforests and peatlands left in the world.

Catastrophic Climate Impacts

Indonesia has some of the most carbon-rich stands of tropical rainforests and peatlands left in the world, but they are being critically threatened as the Indonesian government hands out licenses for their clearance and conversion to commodity plantations. Oxidation of drained peat soils in Indonesia is estimated to emit 5000 tons CO_2 per square kilometer per year, with emissions continuing for decades.[38] When burned, peat soil emissions spike to 100,000 tons of CO_2 per square kilometer.[39] About one third of Indonesia's peatlands have been allocated to logging, pulp wood and oil palm concessions. At current levels of drainage and use, these sectors are releasing approximately one billion tons of carbon dioxide equivalent emissions per year.[40] Development on peatlands is the source of half of Indonesia's total national emissions, yet exploitation of peatland areas generates less than one percent of the nation's GDP. [41]

WHY U.S. PUBLISHERS ARE FAILING INDONESIA'S FORESTS

The results of our fiber testing of U.S. children's books should be a wake-up call for book publishers, sellers, printers and the entire industry. Books should not be contributing to rainforest destruction, the violation of community rights and livelihoods or to climate change.

Significant percentages of acacia plantation and mixed tropical hardwood fiber, with a majority almost certainly coming from the clearing and conversion of Indonesia's rainforests, were found in nearly two-thirds of all the books tested. This controversial fiber was found almost uniformly across publishers, regardless of whether or not they had paper policies or climate change commitments. While the sample of books collected was relatively small, there is reason to believe that the results are indicative of a larger trend in the book industry.

A GROWING RELIANCE ON CHINA:

SUPPLY CHAIN UNCERTAINTIES

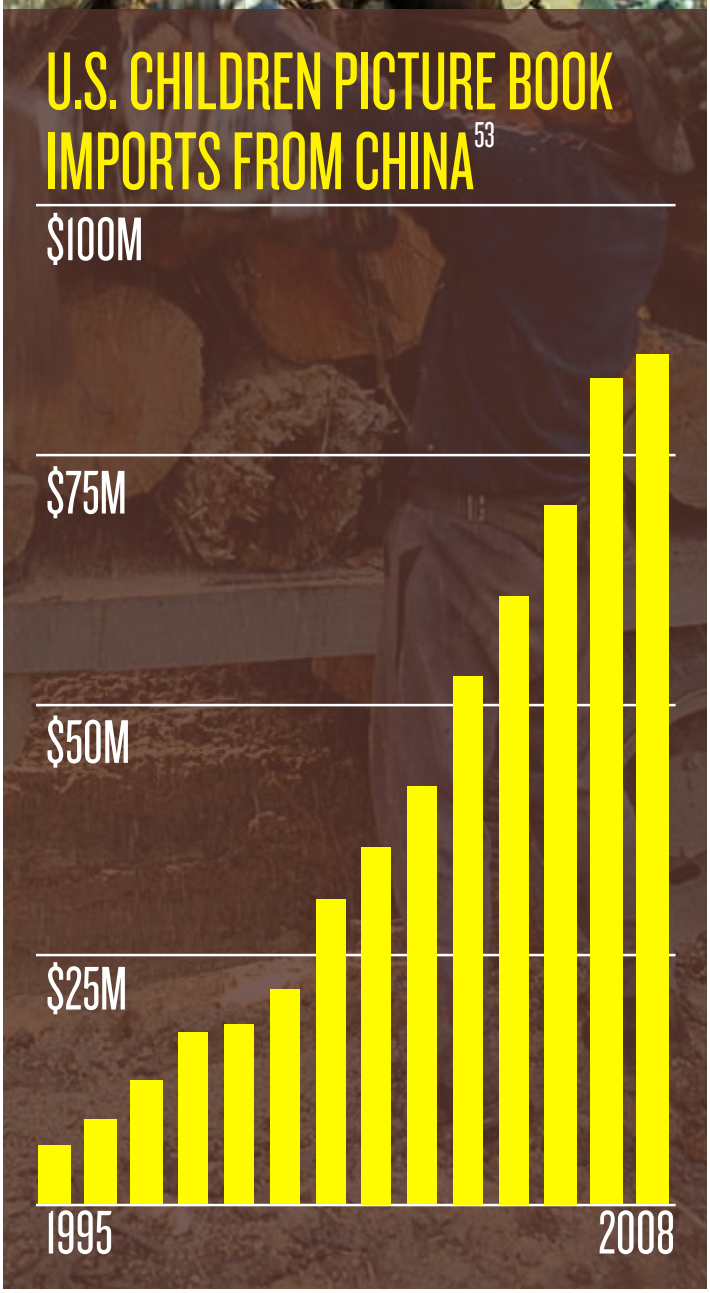
Over the past decade, North American publishers have increasingly outsourced their printing to Chinese suppliers. Between 2000 and 2005, growth in Chinese book sales to the U.S. averaged an increase of more than 30 percent per year, and by 2005, U.S. book publishers imported nearly $800 million worth of books printed in China.[44] This trend is even more significant for children's picture books. During the same period, Chinese sales of children's picture books to the U.S. grew by more than 180 percent, averaging an increase of more than 35 percent per year.[45]

The key factor motivating U.S. publishers to print in China is cost. For color printing on coated paper, U.S. publishers can see savings of as much as 30–50 percent per project, largely due to lower labor costs, new machines and, at times, subsidized paper prices.[46] Because of this cost savings, China is becoming a key print center for children's books, a sector with tight cost margins. Environmental book experts estimate that more than 50 percent of children's picture books printed on coated paper and sold in the U.S. are now printed in China.[47]

The rapid growth of China's printing industry has been accompanied by a similar growth in the Chinese paper industry. Since 1990, the Chinese paper industry's expansion has accounted for more than 50 percent of the world's overall growth in paper and paperboard, making China into the world's second largest paper producer after the United States.[48]

In order to meet the demands of its burgeoning paper industry, China has become the world's largest importer of pulp. The Chinese government has taken steps to reduce this import dependence by subsidizing the development of fast-growing tree plantations. However, because of the country's high population, scarcity of land and large mill capacity, analysts agree that the Chinese paper industry will remain heavily reliant on imported pulp, woodchips and recovered paper for at least the next decade.[49] Currently, China's top six pulp providers are Canada (20% of the total), Indonesia (18%), Brazil (14%), Russia (14%), the United States (11%), and Chile (10%).[50]

China's heavy reliance on pulp imports is contributing to a rapid decline of natural forests in supplier countries. While



some of these imports are secured from well-managed forests and plantations, a significant portion come from regions where forest governance capacity and the rule of law and enforcement are weak. As a result, companies are cutting natural forests and establishing plantations without adequate social and environmental safeguards. This produces cheap commodities for China and global markets, but frequently leads to a tremendous loss of revenue for governments in supplier countries, not to mention a loss of livelihoods and homes for forest dependent communities.

As explored above, pulp from Indonesia, supplying roughly 20 percent of China's pulp needs, is particularly risky. Chinese demand, driven by global demand, has pushed Indonesia's paper production from bad to worse. According to the FAO, Indonesia produced 3.6 million tons of pulp in 2006, exporting roughly 75 percent of its production, 2.7 million tons. Almost half of these exports went to feed China's paper mills.[51]

50%

of children's picture books printed on coated paper and sold in the U.S. are printed in China

As printing, particularly color printing on coated paper, is increasingly outsourced to China, where supply chains lack transparency or safeguards, it is likely that fiber linked to Indonesian rainforest destruction will continue to find its way into American children's books, cookbooks, coffee table books, textbooks, and other printed materials.

Our book testing results, at best, illustrate the difficulty in tracking and trusting the fiber sources for book paper made in China to ensure that books are not contributing to the logging of Indonesia's and other endangered forests. At worst, they illustrate lack of due diligence on behalf of publishers, which, in the case of illegally obtained wood, is punishable by law under the amended U.S. Lacey Act.[52] On the broadest level, controversial fiber is entering the supply chains of American publishers with even the best policies due to a lack of enforcement. When breaking down what enforcement

Almost half of the

2.7 million tons

of pulp exported by Indonesia

went to China's mills

entails, solutions for screening out controversial fiber become clearer.

Publishers who have committed to phase out endangered forest and other controversial fiber must first understand what qualifies as "controversial" or "endangered forest" fiber. They must also have a clear understanding of where the wood used in their paper originates. At times, this information is not available or obtained, thus leading to negative impacts. However, assuming publishers do possess this knowledge, they must then give clear instructions to their Chinese printers, who buy and stock the paper, regarding what papers meet their environmental and social criteria. Printers must then obtain clear answers regarding the origin of papers from their suppliers in order to effectively screen papers based on environmental and social criteria. Unfortunately, in communications between both publishers and printers and printers and paper suppliers, current incentives promote less, not more, supply chain transparency.

One of the biggest incentives for not communicating strict requirements for environmental and social criteria in papers is comfort with the status quo and perceived cost increases. Publishers, printers and paper suppliers are driven by the constant demand to minimize costs. Chinese printers, who sell wholly bound books and buy all of the book components, including paper, have an incentive to stock and sell the lowest cost paper. Not surprisingly, paper obtained from controversial and possibly illegal sources is often the lowest cost.

Printers usually rely on their suppliers to verify that the fiber used in their papers is not coming from controversial sources. In some cases, suppliers may lie or mislead customers about the source of their papers. In other cases, suppliers use certification systems to assure printers and publishers that papers are controversy-free. For many publishers and printers, certification systems are viewed as a panacea for screening controversial fiber. Unfortunately, a number of certification systems, such as PEFC and LEI, are not reliable in such screening, and fiber from Indonesian rainforest destruction ends up in certified products.

SPOTLIGHT ON CHINA'S COATED PAPER INDUSTRY

Within China's rapidly expanding paper industry, coated paper, which is used in the production of children's books, coffee table books, magazines and other printed materials, is one of the fastest growing segments. Chinese coated paper manufacturing is heavily reliant on imported wood fiber because, unlike other types of paper manufacturing in China, it uses very little recycled paper or agricultural residue fiber. Currently, only about seven percent of the total fiber supply for making coated paper in China comes from wastepaper. Meanwhile, 86 percent of the fiber is kraft pulp, made from a combination of hardwood and softwood tree species.[54] Fiber from hardwood trees, referred to as bleached hardwood kraft pulp, is the largest component of coated papers. Chinese imports of bleached hardwood kraft pulp rose from 123,000 tons in 1995 to about 3.1 million tons in 2007, with Indonesian acacia and mixed tropical hardwood pulp constituting the largest segment.[55]

STRATEGIES FOR CHANGE

Between the drive for low cost paper, the need for detailed supply chain knowledge, unclear expectations between suppliers, printers, and publishers, and unreliable certification systems, there are many reasons why controversial fiber is ending up in publishers' supply chains. However, none of these are justification for destroying Indonesia's last remaining rainforests, violating the rights of forest peoples or exacerbating climate change. The urgent need for action to preserve some of the world's most valuable and carbon-rich forests is more necessary than ever.

In pursuit of this goal, we recommend that all book publishers:

AVOID THE WORST COMPANIES

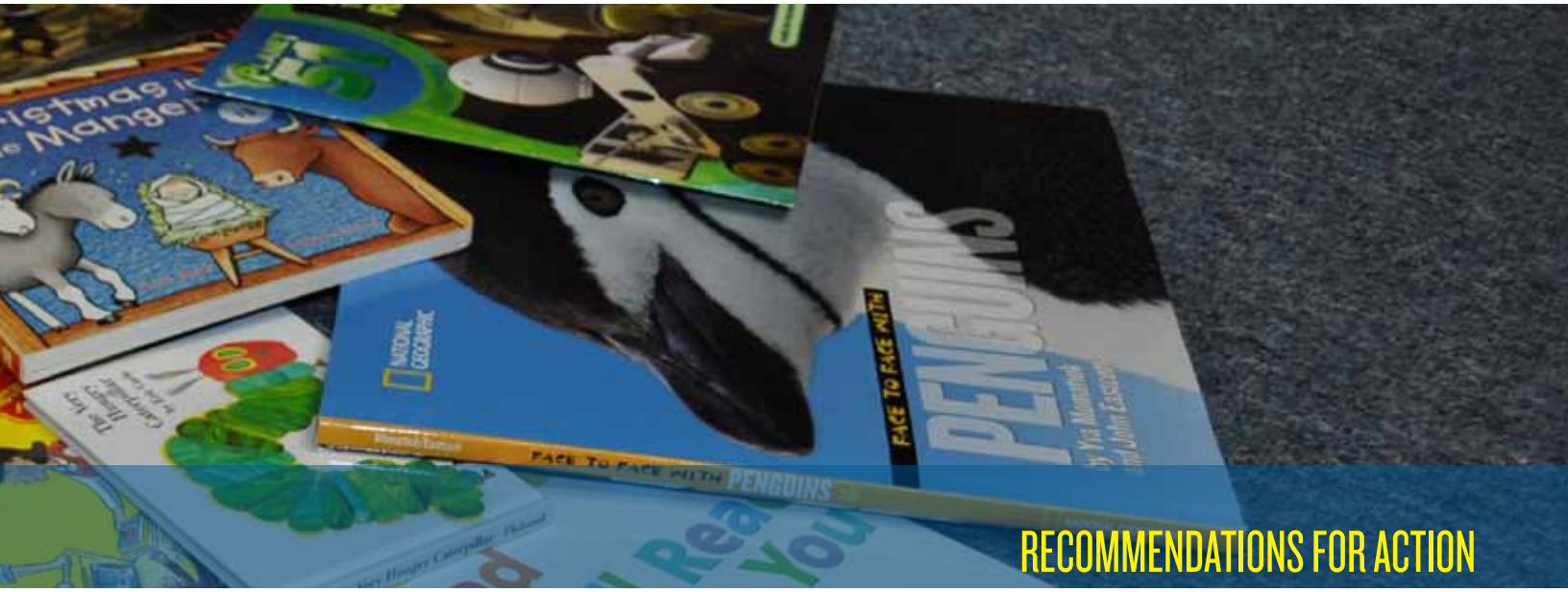
Companies that are known to be involved in the ongoing clearing and conversion of endangered forests should be avoided. We recommend severing all financial and supply chain ties with APP and APRIL as well as their affiliates until key reforms have been implemented and independently verified. Leading Indonesian civil society groups have made similar calls.[56] Customer action to implement safeguards that prevent doing business with companies actively converting natural forests and peatlands will help the Indonesian government in meeting its commitment to reduce its carbon emissions. Making this change is one of the clearest and most effective actions publishers and printers can take to protect rainforests and climate and to bring about key reforms to the Indonesian pulp and paper sector. In doing so, they will join scores of APP and APRIL customers that have terminated their relationship with APP, APRIL and their affiliates due to concerns about their poor environmental, social and legal track records and for failing to keep their commitments.

We recommend severing all financial and supply chain ties with APP and APRIL

FULLY UNDERSTAND YOUR SUPPLY CHAIN AND ELIMINATE FIBER FROM CONTROVERSIAL SOURCES

In order to avoid the risks of controversial wood supplies as well as the potential liability under the Lacey Act, it is essential to know the origin, content and manufacturer of the pulp and paper your company uses. Ask your suppliers to verify the chain of custody for all wood products back to the forests of origin. Once the forests of origin are known, phase out any fiber from High Conservation Value and Endangered Forests, high carbon forests or soils, areas with social conflict and other controversial sources.

To assess controversy and risk, conduct independent due diligence and verification and collaborate with stakeholders. Set clear conditions for what paper can be used in books printed overseas and conduct independent testing to confirm results. Establishing long-term relationships with trustworthy suppliers, rather than buying on spot markets,



RECOMMENDATIONS FOR ACTION

will help your company avoid controversial supplies and suppliers. Additionally, making site visits, doing independent research, consulting with environmental groups and business contacts, and incorporating clear questions and requirements in your requests for proposals (RFPs) and contracts will demonstrate due diligence. It will also help your company avoid risk and make good decisions.

STRENGTHENING ENVIRONMENTAL AND SOCIAL RESPONSIBILITY AND BEST PRACTICES

In addition to eliminating controversial suppliers and fibers from your supply chain, improve your company's forest and climate footprint by maximizing the postconsumer and de-inked recycled content in papers you use and by maximizing efficient use of paper as part of reducing overall paper consumption. Reducing basis weight, size, returns and packaging will often cut down cost and your environmental footprint. Using postconsumer and de-inked recycled content ensures that endangered forests were not logged to produce the portion of paper that it comprises. Additionally, using postconsumer recycled content helps to conserve natural resources and reduce greenhouse gas emissions. According to Environmental Defense Fund's Paper Calculator, each ton (on average 1,300 books) of postconsumer recycled paper that replaces a ton of virgin freesheet paper saves the equivalent of 2,108 pounds of greenhouse gases, 8,750 gallons of water, and 24 mature trees.

Phase out any fiber from High Conservation Value and Endangered Forests

For any paper needs that cannot be met through the use of post-consumer recycled content, fiber from Forest Stewardship Council (FSC) certified forestry operations should be used. FSC currently provides the most credible independent verification that products from forests are environmentally and socially responsible. FSC labeled products also carry assurances of chain-of-custody transparency.

Ensure that any fiber or paper used by your company comes from areas where the Free, Prior and Informed Consent of forest communities that have tenure or rights to the area has been given. You can also purchase from suppliers that respect international labor standards developed by the United Nations' International Labor Organization.

It is also important to minimize other environmental impacts that result from paper production, in particular water pollution and toxics from bleaching. Give preference to paper and paper products processed without chlorine or chlorine compounds (i.e. "processed chlorine free" PCF or "totally chlorine free" TCF papers).

BECOME AN ADVOCATE FOR SOLUTIONS TO INDONESIAN RAINFOREST AND ENDANGERED FOREST DESTRUCTION

For publishers that do not currently have a public paper procurement policy, we recommend working with Rainforest Action Network to develop and implement a leadership policy that reflects your company's values, incorporates fundamental safeguards and adopts best practices to guide your procurement and engagement with your supply chain. Such a policy would include commitments to reducing your company's climate impacts, eliminating fiber from high risk regions and suppliers and protecting endangered forests, ensuring that fiber and paper is not from areas with social conflict, increasing your use of recycled fiber, and maximizing your company's resource efficiency. For those publishers that do have a public paper procurement policy, we recommend working with RAN to explore whether it needs strengthening and to develop implementation or action plans that include targets and timelines and options to publicly report on progress.

Ensure that all fiber comes from areas where the Free, Prior and Informed Consent of forest communities has been given

Effective implementation of your policy will be enhanced by educating and securing the participation of company employees. In addition to providing information and showing that the policies have support from the top, you can include performance in meeting the company's environmental goals in annual performance reviews.

Sometimes being an environmental leader requires developing alternatives that do not currently exist or cost more. You can achieve this by working with supply chain partners and stakeholders to research and develop more environmentally and socially responsible paper and reduced environmental footprint alternatives and options.

For all publishers, we recommend doing outreach with peers, customers, governments and other key decision makers to advocate for the protection of Indonesian rainforests and other endangered forests and the mitigation of climate change.

Reach out to peers, customers, governments and other key decision makers to advocate for the protection of Indonesian rainforests

CONCLUSION

Indonesia has some of the world's most important forests for the climate, biodiversity and forest communities, but these forests are at a crossroads. Down one path are continuing deforestation, species extinction, human rights violations and runaway climate change. Down the other are forest and species preservation, sustainable livelihoods for forest communities and a stable climate.

U.S. book publishers are in a unique position to influence which path is taken. The complexity of the supply chain indicates that there are challenging systemic issues that will require cooperation amongst the entire industry – from book publishers to sellers to printers to consumers and authors. At least initially, there are likely to be some cost implications of responsible action and a need to stretch for creative solutions. However, this is clearly within the grasp of the publishing industry, which, as a whole, is forward-looking, has a high level of commitment to environmental and social responsibility, and understands the imperative to address these crucial issues for our children and for ourselves.

U.S. book publishers are in a unique position to influence which path is taken for Indonesia's rainforests.

By moving away from Indonesian wood fiber for book papers and towards responsible alternatives like recycled content, publishers can decrease their forest and carbon footprint. In doing so, they must also ensure that shifting their demand and related impacts away from Indonesia does not increase demand from other high-risk regions, endangered forests or controversial sources.

The solutions we need are already out there; you can read them in children's books. One book, titled *Rainforests*, tells us that, "Untouched by humans, virgin rain forest is a self-supporting environment providing all that it needs for healthy growth. It takes hundreds of years for a rain forest to grow to maturity – but only a few days to destroy it." While this is saddening, one all-time favorite children's book hero, the Lorax, when confronted with a similar situation, points out, "Unless someone like you cares a whole awful lot, nothing is going to get better, it's not."

ENDNOTES

1 Human Rights Watch. 2009. “Wild Money” The Human Rights Consequences of Illegal Logging and Corruption in Indonesia’s Forestry Sector. United States of America: Human Rights Watch, 16.

2 Barr, C. Indonesia’s Pulp and Paper Industry: Overview and Opportunities. Presented at the Roundtable on Indonesia’s Pulp and Paper Industry, 2008, in New York, NY.

3 United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx

4 Controversial sources include for example: areas/regions/nations with high rates of illegal logging; areas with social conflict or disputed tenure as demonstrated by legal challenges; media reports, credible community or civil society opposition or concerns; areas or eco-regions of high conservation or carbon value and ecosystems identified as biodiversity hot spots or threatened by WWF, CI, IUCN or peer reviewed science; suppliers or supply chain partners that pose a credible reputational or material risk.

5 MOF (Ministry of Forestry). 2000. “Analysis and Discussion Paper by the Director General for Protection and Conservation of Nature,” National Working Meeting of the Ministry of Forestry and Estate Crops, June 26-29. Translation from original by C.V. Barber.

6 FWI/GFW. 2002. The State of the Forest: Indonesia. Bogor, Indonesia: Forest Watch Indonesia, and Washington DC: Global Forest Watch.

7 Simamora, Adianto P. More than half of RI’s biodiversity `unrecorded’. The Jakarta Post , January 30, 2010.

8 Indonesia allocates 18 million hectares of land for palm oil. The Jakarta Post. December 2, 2009. http://www.thejakartapost.com/news/2009/12/02/indonesia-allocates-18-million-hectares-land-palm-oil.html and Sinar Mas’ plans to expand by another 10 million hectares of Pulp and Paper Plantations: Pengelolaan Hutan Tanaman – Sinar Mas Forestry. Presentasi kepada Menteri Kehutanan R.I. Jakarta, 29 January 2007.

9 Children’s Book Council. “CBC Member List.” http://www.cbcbooks.org/about/ourmembers

10 This study does not include the percentage of children’s books, or percentage of total books, each publisher currently prints in China or other areas that are high risk for the use of wood fibers from endangered forests because this data is not publicly available. Field research conducted for this study suggested that the percentage of children’s books printed in China was quite variable by publisher.

11 Hirschberger, Peter, et al. October 2009. Tropical Forest Destruction for Children’s Books: An Analysis of the German Book Market. Frankfurt, Germany: WWF Germany.

12 Ibid.

13 Barr, C. Indonesia’s Pulp and Paper Industry: Overview and Opportunities. Presentation to the Roundtable on Indonesia’s Pulp and Paper Industry, New York, NY. 2008.

14 Sinar Mas Forestry. 2007. Pulp Plantation Management. A presentation to the Indonesian Minister of Forests, in Jakarta, Indonesia.

15 Setiono, B. 2007. Debt settlement of Indonesian forestry companies: assessing the role of banking and financial policies for promoting sustainable forest management in Indonesia. Bogor, Indonesia: Center for International Forestry Research (CIFOR). http://www.cifor.cgiar.org/publications/pdf_files/Books/BSetiono0701.pdf

16 Ibid.

17 Forest Stewardship Council A.C. December 2007. Forest Stewardship Council dissociates with Asia Pulp and Paper. http://www.wwf.or.jp/activities/pfiles/20080116opt_fsc.pdf

18 Rainforest Alliance. January 2007. Rainforest Alliance Public Statement: Termination of Contract to Verify High Conservation Value Forests (HCVF) for APP in Sumatra, Indonesia. http://www.environmentalpaper.org/documents/smart%20wood%20app%20termination.pdf

19 Rainforest Action Network. April 15, 2010. Indonesian Paper Giant APRIL’s Certification Status Suspended.http://www.ran.org/content/indonesian-paper-giant-april%E2%80%99s-certification-status-suspended

20 WWF Indonesia. July 13, 2004. WWF Concerns over the Origin of Fiber for the Mills of the Asia Pulp and Paper Company in Sumatra, Indonesia.http://assets.wwfid.panda.org/downloads/wwf_statement_on_app_13jul04_.pdf

21 WWF Indonesia. February 20, 2004. Time is running out for APP. http://assets.wwfid.panda.org/downloads/time_is_running_out_4_app.pdf

22 WWF Indonesia. October 2006. Hiding Destruction Behind False Advertisements: APP continues to ignore calls for conservation beyond “legal compliance,” and even fails on the latter. WWF Monitoring Brief. http://www.wwf.or.jp/activities/lib/pdf/APP_Oct06_MonitoringRpt.pdf

23 Drajem, Mark. U.S. Imposes Duties on Paper from China, Indonesia. Bloomberg, March 2, 2010. http://www.bloomberg.com/apps/news?pid=20601080&sid=aqqkoHK58fbA

24 Fitzgerald, Daniel. UPM Cuts Ties with APRIL. ProPrint, November 18, 2009. http://www.proprint.com.au/News/160801,upm-cuts-ties-with-april.aspx

25 Wright, Tom. Green-Minded Staples Ends Ties With Asia Pulp & Paper. The Wall Street Journal, February 7, 2008. http://online.wsj.com/article/SB120240874246651263.html?mod=googlenews_wsj

26 See Office Depot announcement at: http://www.reuters.com/article/pressRelease/idUS141262+03-Jun-2008+BW20080603; Metro Group at http://www.ethicalcorp.com/content.asp?ContentID=2732; Ricoh Group and Fuji Xerox at http://www.worldwildlife.org/who/media/press/2006/WWFPresitem888.html; Woolworths at http://abc.com.au/news/stories/2008/08/07/2327977.htm

27 FWI/GFW. 2002. The State of the Forest: Indonesia. Bogor, Indonesia: Forest Watch Indonesia, and Washington DC: Global Forest Watch.

28 Human Rights Watch. 2009. "Wild Money" The Human Rights Consequences of Illegal Logging and Corruption in Indonesia's Forestry Sector. United States of America: Human Rights Watch, 16.

29 FWI/GFW. 2002. The State of the Forest: Indonesia. Bogor, Indonesia: Forest Watch Indonesia, and Washington DC: Global Forest Watch.

30 Human Rights Watch. 2009. "Wild Money" The Human Rights Consequences of Illegal Logging and Corruption in Indonesia's Forestry Sector. United States of America: Human Rights Watch, 16.

31 Hawkins Wright publication: Pulp Watch. Vol. 16, No.8. March 5, 2010.

32 Barr, et al. 2010. Financial Governance and Indonesia's Reforestation Fund During the Soeharto and Post Soeharto Periods, 1989-2009. Indonesia: Center for International Forestry Research.

33 Pirard, Romain and Rofikoh Rokhim. 2008. Corporate Governance in the 21st Century. Asia Pulp & Paper: A business rationale based on debt entrenchment and financial expropriation. Centre d'Etudes et de Recherches sur le Développement International.

34 Barr, Christopher and Christian Cossalter. Pulp and Plantation Development in Indonesia: A Summary of Recent Trends. Presentation for European Consultative Workshop Brussels, March 24, 2004.

35 Harahap, Rizal. Riau Police guilty of rights abuses: Komnas HAM. Jakarta Post, December 30, 2008. http://www.thejakartapost.com/news/2008/12/30/riau-police-guilty-rights-abuses-komnas-ham.html

36 FWI/GFW. 2002. The State of the Forest: Indonesia. Bogor, Indonesia: Forest Watch Indonesia, and Washington DC: Global Forest Watch.

37 Eyes on the Forest. Legally Questionable Forest Clearing by APRIL Threatens Peat Swamp Forest of Kerumutan Critical for Sumatran Tigers, Local People, and the Global Climate. August 2009. http://eyesontheforest.or.id/index.php?option=com_docman&task=doc_download&gid=170&Itemid=20

38 Couwenberg, John, Rene Dommain, and Hans Joosten. July 1, 2009. Greenhouse gas fluxes from tropical peatlands in south-east Asia. Global Change Biology 16:6: 1715-1732.

39 Ibid.

40 Reducing carbon emissions from Indonesia's peat lands. Interim Report of a Multi-Disciplinary Study December 2009. Indonesian National Development Planning Agency (BAPPENAS).

41 Ibid.

42 Conversation with Wirendro Sumargo, Forest Watch Indonesia Executive Director. February 2010.

43 Hooijer, A., Silvius, M., Wösten, H. and Page, S. 2006. PEAT-CO_2, assessment of CO_2 emissions from drained peatlands in SE Asia. Delft Hydraulics report Q3943. http://www.wetlands.org/Portals/0/publications/General/Peat%percent20CO2%percent20report.pdf

44 Maine, John. Outlook for Book Publishing Papers, Powerpoint presentation. BMI Management Conference. May 3, 2005.

45 United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx

46 Webb, Joe. Offshore printing gaining ground; Newly published study analyzes the U.S. printing industry's growing competition from print imports. PR Web, January 11, 2005. http://www.prweb.com/releases/2005/1/prwebxml195117.php

47 Conversation with Nicole Rycroft, Canopy Executive Director. February 2010.

48 Barr, C., and A. Demawan. 2005. China's Wood Pulp Imports: A Summary of Recent Trends by Volume, Value and Country of Origin. Bogor, Indonesia, Center for International Forestry Research (CIFOR). 2:5.

49 Barr, C et al. 2005. China's Development of a Plantation-based Wood Pulp Industry: A Summary of Government Policies and Financial Incentives, with a Focus on South China. Bogor, Indonesia, Center for International Forestry Research (CIFOR). 2:5. Vos, R. and J. Newell. June 2009. A Comparative Analysis of Carbon Dioxide Emissions in Coated Paper Production: Key Differences between China and the U.S. Center for Sustainable Cities: University of Southern California.

50 Vos, R. and J. Newell. June 2009. A Comparative Analysis of Carbon Dioxide Emissions in Coated Paper Production: Key Differences between China and the U.S. Center for Sustainable Cities: University of Southern California.

51 Hirschberger, Peter, et al. October 2009. Tropical Forest Destruction for Children's Books: An Analysis of the German Book Market. Frankfurt, Germany: WWF Germany.

52 In 2008 the United States amended its long-standing Lacey Act to prohibit commerce in illegally sourced plants, including wood products. The new law is a significant change for the forest products sector, creating a previously non-existent level of responsibility all along the supply chain.

53 United Nations Commodity Trade Statistics Database. http://comtrade.un.org/db/default.aspx

54 Vos, R. and J. Newell. June 2009. A Comparative Analysis of Carbon Dioxide Emissions in Coated Paper Production: Key Differences between China and the U.S. Center for Sustainable Cities: University of Southern California.

55 Ibid.

56 WALHI, CAPPA, et al. Open Letter to Customers of and Investors in Indonesian Pulp and Paper Sector. March 2010. http://eyesontheforest.or.id/index.php?option=com_content&task=view&id=286&Itemid=39

Many thanks for photos by:
Hariansyah Usman/WALHI
David Gilbert/RAN
Otto Miettinen/FOE
Anonymous

RAINFOREST ACTION NETWORK

221 PINE STREET #500

SAN FRANCISCO, CA 94104

RAN.org

NEW LEAF PAPER®

ENVIRONMENTAL BENEFITS STATEMENT

of using post-consumer waste fiber vs. virgin fiber

Rainforest Action Network saved the following resources by using Reincarnation Matte (FSC), made with 100% recycled fiber and 50% post-consumer waste, processed chlorine free, designated Ancient Forest Friendly™ and manufactured with electricity that is offset with Green-e® certified renewable energy certificates.

trees	water	energy	solid waste	greenhouse gases
4 fully grown	1944 gallons	1 Million BTUs	118 pounds	404 pounds

Calculations based on research by Environmental Defense and other members of the Paper Task Force.

www.newleafpaper.com