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IN THE PAPER GLOBAL  
VALUE CHAIN

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The Duke University Center on Globalization, Governance & Competitiveness undertakes client-sponsored research that addresses economic and social development issues for governments, foundations and international organizations. We do this principally by utilizing the global value chain (GVC) framework, created by Founding Director Gary Gereffi, and supplemented by other analytical tools. As a university-based research center, we address clients' real world questions with transparency and rigor.

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# **The Philippines in the Paper Global Value Chain**

## Executive Summary

**FINAL DRAFT FOR REVIEW**

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## Executive Summary

This report uses the Duke CGGC Global Value Chain (GVC) framework to examine the role of the Philippines in the global paper industry and identify opportunities for upgrading. The Philippines' paper sector is a domestically oriented industry that provides significant indirect employment opportunities for wide swaths of workers as well as indirect exports for sectors such as electronics, food and beverage, and cosmetics. However, the country's overall participation in the paper GVC is limited, with raw material constraints hindering export development. Abaca pulp production, a niche product category that uses the Manila hemp plant to generate specialized outputs such as tea bags and bank notes, is the country's most dependable export, but even with the export value of abaca pulp approaching an all-time high in 2014, the overall paper industry only generated US\$127 million in export revenue, 54th among 193 countries in the world.

## The Paper Global Value Chain

The paper GVC includes five general stages—inputs, milling, conversion, distribution, and waste collection—and has four primary production segments: sawmilling, pulp milling, paper milling, and conversion activities. The overall industry is estimated to be worth between US\$300-\$350 billion, although revenue sources have shifted and, in some cases, stagnated in recent years as manufacturers have grappled with the following changes: 1. Information technology replacing paper as the primary communication medium in established markets; 2. Manufacturing production networks becoming more fragmented, thereby increasing the need for packaging and shipping material in disparate locations; and 3. The improvement of living standards in emerging nations, which has boosted sales of health and hygiene products. Aggregated, these factors have pushed demand for paperboard ahead of paper.

The evolving landscape has reshaped the geography of the industry. The most pronounced trends that can be detected worldwide include:

- **Worldwide trade in key inputs has increased.** Confronted with decreasing demand for its traditional products, lead firms have consolidated operations and sought access to cheaper and more efficient inputs where emerging markets have competitive advantages. From 2005-2014, worldwide exports of woodchips and wood pulp—two critical raw materials for paper products—increased by 38% and 36%, respectively.
- **The jump in trade of woodchips and pulp has created upgrading opportunities for new entrants into the chain.** Against the backdrop of increased trade in inputs, a handful of countries have become important actors in the paper GVC. Although the worldwide export market for woodchips is relatively small, three Southeast Asian countries (Vietnam, Thailand, and Indonesia) have increased their global exports of woodchips, with Vietnam becoming the largest exporter of woodchips as measured by value in 2014. The market for pulp is significantly larger, with South American countries such as Brazil, Chile, and Uruguay taking advantage of their climate to expand fast-growing eucalyptus plantations to become key suppliers of pulp.

- **While actors in upstream segments of the chain have changed, traditional markets remain entrenched in highest-value activities.** The global export market for woodchips was only US\$3 billion in 2014, and worldwide trade in pulp was US\$37 billion; by comparison, trade in paper products was US\$105 billion. The five largest exporters of final paper products are Germany, the US, Sweden, Finland, and Canada, with these countries accounting for roughly 47% of all exports.
- **Asia is driving much of the global industry's growth.** While developed countries still capture much of the value in paper GVCs, the paradigm is shifting, with Asian nations becoming more prominent. Companies with operations in the region have taken advantage of two factors: 1. The region's position as an export base for industries that use paper-based shipping materials; 2. Higher demand for goods that are associated with the increased purchasing power of an expanding middle class: writing paper, and health and hygiene products. China, in particular, has become an important market—it is the world's largest importer of every major category of input (woodchips, pulp, and recovered paper), and both its internal consumption and exports of final products have increased dramatically in the last decade.

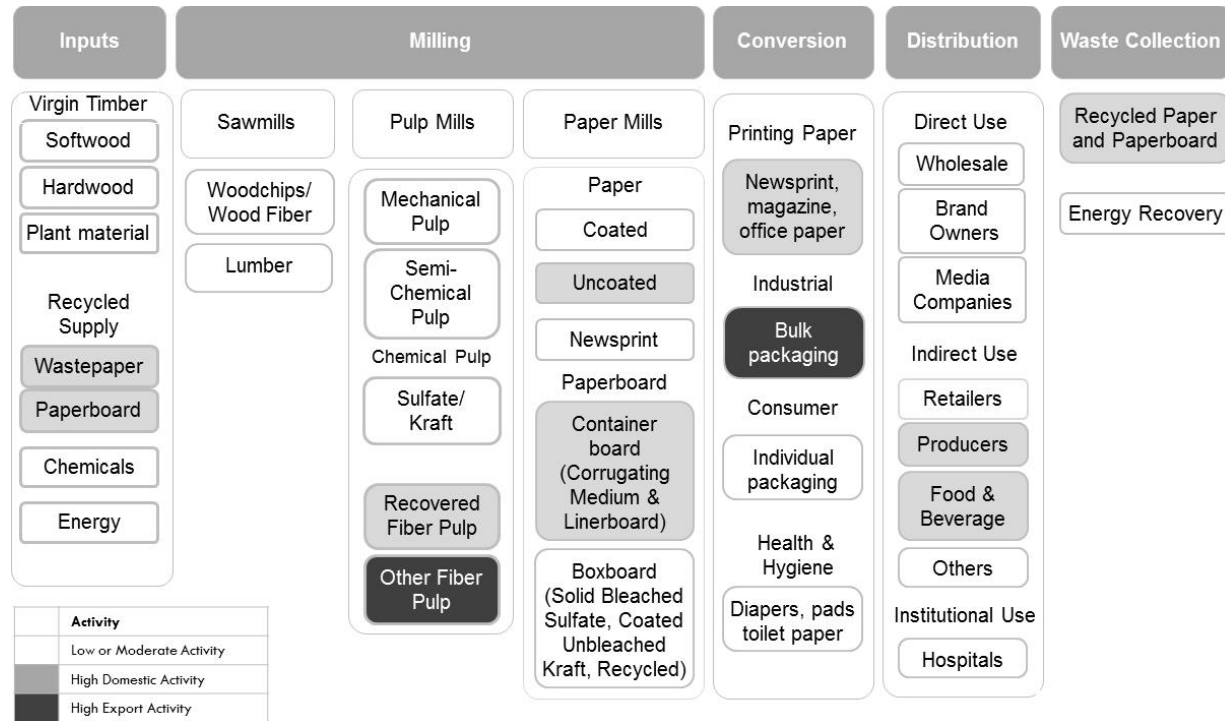
### **The Philippines in the Paper GVC**

The majority of the Philippines' paper production is destined for the domestic market. Exports are minimal and have declined dramatically since hitting an apex of US\$233 million in 2011. While the impact of electronics and information technology on the paper industry took longer to reach Asia than some locations, internet penetration has increased in more recent years, decimating newsprint consumption—the Philippines' exports of newsprint dropped 75% from 2011 to 2012 alone, falling from US\$62 million to US\$15 million. Overall, the paper industry as a whole accounted for roughly 0.002% of the Philippines' total exports in 2014.

The segments of the chain where the Philippines is most oriented toward the export market are abaca pulp production and paperboard conversion. The Philippines is the leading source of abaca fiber worldwide—the country provides roughly 85% of the supply of abaca, and exports of the product generated US\$71.3 million in revenue in 2014, which was a 36% increase from 2005. Abaca production also accounts for the Philippines' most prominent multi-national corporation active in the paper GVC—Glatfelter, which owns a Filipino subsidiary named Newtech Pulp and controls the abaca pulp mill in Lanao del Norte in Mindanao. The American manufacturer of specialty paper is the world's largest consumer of abaca pulp; the company uses the material to make tea bags that the company then sells to companies such as Unilever, which owns Lipton Tea.

In addition, there are approximately 80-90 conversion facilities active in the Philippines. Globally, conversion plants are often located close to final customers to reduce transport costs. In the case of the Philippines, many of the conversion companies are foreign owned and co-located with customers in PEZAs that either need paper or paperboard material as inputs or use the material to ship products to foreign markets. Figure E-1 illustrates the segments of the paper GVC where the Philippines is most active.

**Figure I. The Philippines' in the Paper GVC**



Source: Duke CGGC, based on field interviews and FAO and PPMAI data.

Note: High export activity (dark grey) describes sectors that generate more than US\$50 million in export revenue or have more than 20 businesses geared toward the export market. High domestic activity (light grey) refers to segments where there is similar numbers of actors that sell to the domestic market.

These characteristics lead to a number of strengths for the Philippines as it pursues upgrading trajectories in the paper GVC. These advantages include:

- **World’s leading producer of abaca pulp.** The Philippines enjoys a dominant position in abaca pulp production. In addition to being the world’s largest source of the fiber, the country also has the only abaca pulp mills in the world, with four facilities that have an estimated annual capacity of 45,000 metric tons per year.
- **Favorable tariff regimes for abaca.** Roughly two-thirds of the Philippines’ abaca pulp is shipped to the Europe. Abaca fiber is covered by the EU’s Generalized Scheme of Preferences Plus (GSP+) program, which eliminates tariffs entirely. The Philippines’ monopoly on abaca pulp production means the low tariffs do not necessarily provide an advantage against other countries; however, it does allow for abaca to remain a cost competitive input for tea bags and coffee filters, which are the two primary outputs of the abaca fiber that is exported to Europe.
- **Policy support from industry stakeholders.** The Industry Development Program, the Manufacturing Resurgence Program, and the Industry Roadmapping Project initiated by DTI provided momentum for the Philippine Paper Manufacturing Association Inc. (PPMAI) to work with the business community to develop an industry road map. That document served a valuable role in articulating the needs and wishes of the industry as well as offering policy recommendations designed to nurture the sector. Additionally, DTI and the BOI has

included virgin pulp as a priority industry in its most recent Investment Priorities Plan, which allows potential investors to receive various incentives.

- **Strong human capital and training programs.** The Philippines has a number of educational institutions that offer support for the paper sector and provide the country with a capable workforce. The University of the Philippines Los Baños has a chemical engineering major in pulp and paper technology. The Forest Products Research and Development Institute that is part of the Department of Science and Technology in Laguna also offers specialized 10-day classes for the technical staff of pulp and paper mills that are designed to train employees in raw material preparation, pulp bleaching, stock preparation, paper making, and product evaluation.

At the same time, the Philippines has location-specific impediments that undermine export competitiveness. The most prominent of these is the lack of raw materials available in the country, although others can be identified.

- **The shortage and insufficient quality of raw materials.** With the closing of the PICOP pulp mill in 2010, the Philippines does not have an operational facility that can produce virgin pulp. The lack of access to raw materials hurts domestic firms in at least two ways: 1. Although market pulp is sold on global markets in increasing volume, it is subject to price fluctuations that can threaten the competitive position of businesses that rely on it as an input; 2. Virgin pulp produces stronger and higher-quality paper grades that can more easily facilitate product upgrading.
- **Uneven adherence to certification for forests and plantations.** Much of the country's forest reserves or abaca plantations lack certification from the environmental organizations that lead firms rely on to ensure they adhere to sustainability standards. Current estimates are that the country has roughly 32,000 hectares of forest plantations that could be used as inputs for virgin pulp, the majority of which are not FSC or PEFC certified. Estimates for abaca pulp compliance are generally below 10%.
- **Inadequate supply of high quality abaca fiber.** The Newtech Pulp mill is the largest abaca pulp mill in the world, with the capacity of 17,200 metric tons per year. While the facility can process close to 2,100 tons per month, the company can only source enough raw material from its domestic network of consolidators and traders on Mindanao and Catanduanes to generate 1,400 tons of pulp per month.
- **High energy costs and inadequate infrastructure.** The Philippines' energy costs are among the highest in Asia, and the power supply is unreliable in certain regions of the country. Moreover, its infrastructure scores worse than regional peers. Both structural challenges have sizeable ramifications for the paper industry—the sector is one of the largest industrial consumers of electricity, and improvements to infrastructure are necessary for lead firms to invest in developing countries.
- **Low quality products means converters must rely on imports.** Much of the paper and paperboard available in the Philippines is of low quality and firms cannot necessarily differentiate themselves through superior products. As a result, large regional firms have an opportunity to penetrate the market by using their internal economies of scale to undercut Philippine producers.

These constraints restrict the country’s possible upgrading trajectories. Most immediately, the Philippines’ lack of forest resources, processing facilities, and mediocre infrastructure makes following the lead of South American countries and entering the chain through pulp production cost prohibitive. Instead, the upgrading trajectories identified in Table E-I are believed to be the most feasible opportunities.

**Table I. Possible Upgrading Trajectories for the Philippines in Paper GVC**

<b>Time Frame</b>	<b>Potential Upgrading Trajectory</b>	<b>Key Benefits</b>	<b>Capacities Required of Individual Firms</b>	<b>Philippines Challenges</b>
<b>Short – Medium Term</b>	<b>Process upgrading to increase abaca production</b>	<ul style="list-style-type: none"> <li>• Leverages large number of growers to capitalize on Philippines’ natural advantages &amp; generate increased export revenue</li> <li>• Positions country to take advantage of possible increased demand for abaca &amp; encourage chain upgrading into energy and automotive sectors</li> </ul>	<ul style="list-style-type: none"> <li>• Expertise</li> <li>• Access to inputs/storage facilities</li> <li>• Certifications</li> </ul>	<ul style="list-style-type: none"> <li>• Outdated post-harvest technologies</li> <li>• Low levels of grower certifications</li> <li>• Susceptibility of abaca to diseases</li> <li>• Poor storage conditions</li> </ul>
<b>Medium-Long Term</b>	<b>Functional upgrading into and expansion of conversion capabilities</b>	<ul style="list-style-type: none"> <li>• Provides shipping inputs support for key export industries (electronics and food/beverage) and packaging for cosmetics sector.</li> <li>• Expands presence in high-value segment of Paper GVC</li> </ul>	<ul style="list-style-type: none"> <li>• Investments in expensive equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Philippines industry traditionally concentrated in upstream segments of chain</li> <li>• Oversupply in region</li> <li>• Moderate demand for final products</li> </ul>
<b>Short-Medium Term</b>	<b>Product upgrades in paperboard production to enable upgrading in related sectors</b>	<ul style="list-style-type: none"> <li>• Provides inputs for key export industries (electronics and food &amp; beverage)</li> <li>• Employment creation in recycling chain</li> <li>• Environmental benefits</li> <li>• Build reputation and brand for sustainable practices</li> </ul>	<ul style="list-style-type: none"> <li>• Investments in expensive equipment</li> <li>• Access to higher quality raw materials</li> <li>• Investments in equipment to accept lower grades of wastepaper</li> </ul>	<ul style="list-style-type: none"> <li>• Local paperboard is of low quality, partly due to poor quality inputs from recycling</li> <li>• Inefficient recycling collection process &amp; inadequate processing facilities</li> <li>• Overcapacity &amp; oversupply in region providing cheap alternatives</li> <li>• No domestic sources of virgin pulp</li> </ul>

Source: Duke CGGC.