Sourcing of China’s Paper Fiber Supply & Recent Trade Trends

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Where will the supply come from?

GDP per capita & paper consumption

Consumption 2000, kg per capita

GDP per capita, USD 2000 prices

USA

UK

China

Japan 1980-2000
<table>
<thead>
<tr>
<th>Resource Origin</th>
<th>Fiber Input Type</th>
<th>Processing</th>
<th>Final Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local pulp &amp; wastepaper 53%</td>
<td>Vegetable pulps (short fiber, low strength, poor quality)</td>
<td>Traditional small-scale pulp &amp; paper mills</td>
<td>Packaging &amp; other paper products for domestic use 53%</td>
</tr>
<tr>
<td>Imported secondary fiber 33%</td>
<td>Bleached chemical wastepaper</td>
<td></td>
<td>Export-grade corrugated shipping boxes 22%</td>
</tr>
<tr>
<td>Imported pulp 13%</td>
<td>Unbleached draft wastepaper</td>
<td></td>
<td>Coated mechanical grades (newsprint)</td>
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<tr>
<td>Imported pulpwood 1%</td>
<td>Other wastepaper (mixed)</td>
<td></td>
<td>Export-grade printing and communication paper 14%</td>
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<tr>
<td>Low risk forest / plantations</td>
<td>Mechanical grade wastepaper</td>
<td></td>
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<tr>
<td>Potentially threatened forests</td>
<td>Chemi-mechanical pulp</td>
<td></td>
<td></td>
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<tr>
<td>Low risk forest / plantations</td>
<td>Bleached kraft pulp (sulfate)</td>
<td>Large scale modern paper industry</td>
<td></td>
</tr>
<tr>
<td>Unknown forest / plantations</td>
<td>Hardwood pulpwood</td>
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</tr>
</tbody>
</table>

- Local pulp & wastepaper 53%:
  - Agricultural residues
  - Wastepaper
- Imported secondary fiber 33%:
  - Office paper
  - Used cardboard & cartons
  - Mixed (cardboard, news, magazines)
- Imported pulp 13%:
  - Used magazines, newspapers, etc
- Imported pulpwood 1%:
  - Low risk forest / plantations
  - Potentially threatened forests
  - Unknown forest / plantations

- Fiber Input Type:
  - Vegetable pulps (short fiber, low strength, poor quality)
  - Bleached chemical wastepaper
  - Unbleached draft wastepaper
  - Other wastepaper (mixed)
  - Mechanical grade wastepaper
  - Chemi-mechanical pulp
  - Bleached kraft pulp (sulfate)
  - Hardwood pulpwood

- Processing:
  - White paper liner
  - Cardboard
  - Corrugating core

- Final Product:
  - Packaging & other paper products for domestic use
  - Export-grade corrugated shipping boxes
  - Coated mechanical grades (newsprint)
  - Export-grade printing and communication paper
Why is imported chemi-mechanical pulp considered low risk?
Why is imported bleached kraft pulp considered higher-risk?
Why is imported pulpwood considered higher risk?

![Graph showing bone-dry metric kilotons of imported pulpwood by country and year from 2002 to 2006. The countries shown are Australia, Vietnam, Indonesia, Malaysia, USA, and Other. The graph indicates a significant increase in the bone-dry metric kilotons of imported pulpwood from 2002 to 2006.](image-url)
2007 trends continue.

Top 5 Exporters of Pulp to China

2005: Canada (7.5), Indonesia (5.0), Chile (3.0), Russia (4.5), United States (2.5)
2006: Canada (8.2), Indonesia (5.1), Chile (3.2), Russia (4.6), United States (2.6)
2007: Canada (8.8), Indonesia (5.5), Chile (3.5), Russia (4.7), United States (2.7)

Million m³ RFE
Top 5 Exports of Wood Chips to China

- Vietnam
- Indonesia
- Australia
- United States
- Philippines

Wood chips small but important to some countries...
Recommendations

• Be aware of where pulp, pulpwood and woodchips are coming from & develop tracking systems to verify origin

• Address the “weakest links” in China’s fiber supply system: the uncertified pulp and pulpwood coming from Russia and Indonesia
  – ensure certified harvested from sustainably managed forest operations & can be tracked through to the mill
2007 import rise

Total Forest Product Imports

Million m³ RWE


Timber Product Imports  Pulp and Paper Imports
Taking out p & p, logs dominate.

China's Timber Product Imports by Category

Million m³ RWE


- Other
- Veneer
- Particleboard
- Plywood
- Fiberboard
- Wood chips
- Sawn wood
- Logs
Russian logs dominate....

China Log Imports

- Others
- Myanmar
- Soloman Islands
- Gabon
- New Zealand
- Malaysia
- PNG
- Russia

M3 RWE

Small increase in other Russian wood products...

- 2005
- 2006
- 2007

- chempulp
- lumber
- sleeper/crosstie
- mech-chem woodpulp
- paper and paperboard
Indonesian imports

Indonesian Exports to China

million m3 RWE

2005

2006

2007

pulp  paper  woodchips  lumber  plywood  veneer
African imports up (but only 4-5% of total imports)

China's African Forest Product Imports

Million m3 RWE


- Gabon
- Equatorial Guinea
- Mozambique
- Congo-Brazzaville
- Cameroon
- South Africa
- Swaziland
- Liberia
- Other
Where is it going?

Source: RISI
Adapted Fuller and Bernard. 2006. China’s Rapidly Expanding Wood Products Market: Are they Sustainable? RISI
Where is it going?

China's Exports by Product Type

- Plywood
- Floorings & Moldings
- Wood chips
- Pulp and Paper
- Furniture
- Other
- Sawn wood
- Fiberboard
- Veneer
- Joinery

million m3 RWE
Where is it going?

Destination of China's Timber Product Exports

- United States
- Others
- EU
- Japan
- Hong Kong
- Korea, South
- Taiwan

million m3 RWE

Exports to the United States

Volume RWI (m3/year)

- pallet
- Veneer
- Sawnwood
- Frames
- Other
- Kitchen Utensils
- Ornaments
- Builders' Joinery

Furniture & plywood Exports to US 1st Q 2008

- Jan/08
- Feb/08
- Mar/08
- Apr/08

Million US$

- Furniture
- Plywood
Exports by Destination 2007

- USA: 22%
- EU: 18%
- Middle East: 12%
- Hong Kong: 9%
- Japan: 8%
- South Korea: 5%
- Taiwan: 3%
- Canada: 2%
- Australia: 2%
- India: 1%
- Malaysia: 1%
- Russia: 1%
- Others: 15%
- Other countries: 2% each (Canada, Australia, India, Malaysia, Russia)

Importance of Middle East