SLIDE 21: BRAZIL—AN EXAMPLE OF APPLICATION OF SILVICULTURAL AND GENETIC IMPROVEMENTS IN GROWTH

Note the progress leading to a 400% increase in growth rates—this has significant implications for total cost positions by reducing the area needed to generate supply—reducing supply logistics costs.

Developing areas of genetic improvements include pulp quality and fiber yield.
SLIDE 22: NEW PULP PRODUCTION INCREASING IN FAST-GROWING TREE REGIONS

- Impact of low cost and proximity to growing markets
- The proportion of capacity changes based on fast-growing plantations has increased from:
  - 19% in 1970’s to 53% in the 1990’s.
SLIDE 23: COST COMPETITIVENESS—TECHNOLOGY IMPLICATIONS

• Consistent theme of producing value-added products from lowest cost inputs
• Significant technology advances required:
  - in pulping
  - papermaking and
  - sawmilling and panel production.
SLIDE 24: SIGNIFICANT DEVELOPMENTS IN PULP TECHNOLOGY

- Scale up from 100,000 mt/a to 600,000 today to 1 million
  - Few greenfield sites in established fiberbaskets
  - Note earlier transition to fast-growing plantation for virgin supplies
- Technologies to capture more usable fiber from processed wood and RCP
- Improving non-wood pulping systems
- Overall - reducing cash manufacturing costs for NEW SUPPLY SOURCES.
SLIDE 25: BHKP COST CURVES ARE FLATTENING

- Cost competitiveness of Asian market BHKP producers has been enhanced by the significant devaluations of Asian currencies.
- Higher cost capacity is being shut down or mothballed—e.g., Georgia Pacific’s market BHKP mills in the U.S. South.