



# PAPER INDUSTRY ROADMAP

## VISION, GOALS AND TARGETS

### ▪ **Strategic vision for the industry**

To attain the capability to serve all major pulp and paper requirements of the country and develop high-value and quality pulp and paper products in the long-term, in a manner that is internationally competitive and environmentally-sustainable.

### ▪ **Overall specific goals for the industry**

- To improve the country's wastepaper recovery and recycling rate
- To upgrade the levels of manufacturing technologies and environmental performance of local paper mills
- To establish local sources of pulp, based on sustainably-managed tree plantations and non-wood fibers from agricultural wastes and annual crops
- To enable the local mills in achieving economic competitiveness and thus, contribute to poverty alleviation and national development

Quantifiable and measurable targets to achieve the vision for the industry:

### **Short Term**

- Raise the level of wastepaper recycling from the current 50% to 60%
- Establish local capabilities and update the technologies among existing paper mills to produce higher-grades of paper products, such as upgraded mechanical printings, coated paper and board, and strong packaging papers
- Establish large-scale tree plantations that can backstop the building of a modern wood-based pulpmill to support the virgin fiber requirements of non-integrated paper mills
- Construction and commissioning of one economic-sized wood-based pulp mill based on tree-plantations, designed with cost efficient and environmentally-clean technologies (**Start-up/commissioning 2016-2018**).
- Establish one or two non-wood pulpmills utilizing agri wastes and/or annual crops to supplement the local supply of clean pulp for existing local non-integrated paper mills; develop in nearby areas plantation wood as additional raw material for the future. (**Start up 2015**)
- Develop the capacity to produce whole-tree abaca pulp from mass plantation of disease-resistant hybrids, as reinforcing fiber for recycled paper.
- Launch a security paper project (expansion in an existing mill or Greenfield plant), utilizing abaca pulp (**Start up 2014**)



## Medium Term

- Raise the level of wastepaper recycling further to 65-70%
- Undertake projects in paper machine upgrading to enable local production of kraft liner, sack paper, light-weight coated and bleached boards (for food and liquid packaging)
- Full operations of wood-based and non-wood pulp mills, producing both bleached and unbleached pulps for local paper mills and export market
- Expand forest plantations to support the full operations of wood pulp mills
- Expand the raw material base for non-wood pulp mills to enable full operations with adequate supply of raw fiber

## Long Term

- Intensify tree plantation development and local production of wood pulp and expand the export markets for pulp, paper and paperboard
- Establish more non-wood pulp production capacities, based on new agricultural waste fibers and annual crops

## STATE OF THE INDUSTRY

### ■ Structure

- By 2012, only 23 paper mills and 5 abaca pulp mills remain in operation, with a total effective capacities of 1.1 Million tons paper and paperboard and about 38,000 tons abaca pulp export per year, respectively.
- With the shutdown in 2010 of the country's only integrated pulp and paper mill, PICOP Resources Inc. (forestry-to-papermaking operations), the local industry now has only 2 types of mills operating:
  - Non-integrated recycling paper mills
  - Non-integrated pulp (abaca) mills
- The paper mills, all recycle-based (non-integrated), consist of 10 firms located in Metro Manila (48%) and in the regional provinces (52%)
- Most of the paper mills are small by international standards, with capacities lower than 60,000 tons per year. Only 4 manufacturers are capable of producing 70,000 Tons or more per year.
- There are 5 non-integrated pulp mills in the Philippines producing specialty abaca pulp for export. These are small market pulp mills with combined capacity estimated at 38,000 tons per annum.
- Most industry sub-sectors, particularly exports of electronics, fruits, handicrafts, garments and furniture, as well as local production of processed



food and consumer goods, rely significantly on locally-manufactured and imported paper and board as packaging materials.

- The packaging industry, a downstream sector of the paper industry, is critical to the export sector since high-quality and sophisticated packaging is a requirement for success in the global market. In the production of corrugated boxes, paper sack, paper bags and carton boxes, the packaging sector uses linerboard and fluting medium, multi-ply paperboard, sack kraft, and bag paper as component materials. Improving the paper industry as a source of packaging inputs for exporters translate to better competitiveness of Philippine exports.
- Upstream, the paper industry is linked to the recycling sector, from where most of the fiber raw materials are sourced by the country's non-integrated paper mills. As of 2011, the paper industry provides the market for 1.2 Million tons recycled wastepaper per year of which 25% is imported.
- The paper industry is also vertically linked (albeit indirectly) to the forestry and commercial tree plantation sectors, as well as to agricultural sub-sectors producing by-product fibers and annual crops, for its requirement of virgin pulp.
- The raw material sourcing of the paper industry in the Philippines is currently linked to virgin pulp production and forestry operations of pulp producing countries like Indonesia, New Zealand, Europe, and North and South Americas. But a resumption of the tree plantation and pulp production operations, similar to that done in Northeastern Mindanao by PICOP from the 70's-90's, offers tremendous potential to revitalize the local paper industry and restore its huge contributions to the country's economic development.

#### ▪ **Landscape of the industry**

- Most of the local paper manufacturers utilize conventional methods of papermaking, including wastepaper re-pulping, deinking, refining, paper forming and drying, and wastewater treatment and air pollution control. About 5-6 mills (or 10%) have installed more updated technologies of cleaning and treatment of low-grade wastepaper raw materials or have achieved some degree of economies-of-scale in production. Due to equipment limitations and the absence of locally-available supply of virgin pulp, higher grades of paper required in both local and overseas markets are not produced by local mills but are widely imported.
- The cost of inputs to paper production is high. Fiber raw material cost escalates faster in the Philippines because there is no local source of pulp and locally-recovered wastepaper has to be supplemented with imported pulp and wastepaper, the supply of which is getting scarce from overseas. Electricity and personnel costs are higher compared with other developing countries in the ASEAN region, particularly for mills located in urban areas.



▪ **Capacity and Market**

- As of 2011, the production capacity (effective paper and board capacity) of the country's domestic industry is 950,000 tons per year. Of the same year, consumption of paper and paperboard, net of paper exports, is estimated at 1.7 Million.
- The country's paper and paperboard market per capita is estimated to grow at least 2% per annum in the next five years (2012-2016).

▪ **Performance of the industry**

- The industry is small compared with its Asian counterparts but is a multi-billion peso sector that has made a significant contribution to the socio-economic development of the country.
- Accounted for 7 percent of the total consumer manufactures exports in 2005, or about US\$106.2 Million.
- In 2011, the industry's export of paper and board was valued at US\$144 Million and of abaca pulp at about US\$40 million/year in the past decade. In same year, paper imports amounted to 823 MT, valued at US\$737 Million.
- Contributes about P30 billion/annum in domestic sales value or saves the country \$700 million/year in foreign exchange from imported paper and board.
- Environmental benefits - cuts down on the use of plastic that clog our drains and waterways causing flooding and pollution in rivers and seas; paper waste can be burned for final disposal without causing health hazards, unlike plastic which emit poisonous gases and noxious odor if burned in the open.
- Investments in the sector - Capital formation in the paper industry peaked in 2004 at P948 Million., dropped to P747 Million in 2005 and continued to decline in the last 5 years to between P300-500 Million/annum. To date, at least P35 Billion have been invested in capital by the paper industry.
- As of 2012, the local paper industry directly employs about 6,000 personnel, mostly skilled workers and technical professionals, and contribute value to the economy by sustaining the livelihood opportunities of about 1.2 Million workers in the wastepaper collection, sorting, and hauling sub- sectors.
- Currently, without a local market pulp mill in operation supplying fiber to non-integrated mills, the country imports 80,000 Tons/year of virgin pulp. In addition, the industry's requirements for pulp is substituted by importation of high-grade wastepaper and actually diminished significantly by the local paper mills' non-production of higher grades of paper (which are instead imported from other countries).



■ **Challenges**

- Raw material problem
  - Wastepaper: poor quality and low volume of local wastepaper
  - Virgin pulp: absence of pulp mill to support requirement for virgin fiber for strong packaging and high-grade graphic paper or for enhancing the quality of recycled fibers in tissue, newsprint and paperboard.
- Small-sized mills, old equipment
- Concentration of paper mills in Metro Manila areas
- High energy costs
- Macro-economic difficulties of the industry – dumping of paper products from giant producers in North America and Indonesia and other developed countries when their own markets weaken

■ **Strengths and Opportunities of the Industry**

- Strengths
  - Large domestic market and growing at 2% annually
  - Well-organized industry
  - Export winner (abaca pulp)
  - Availability of abaca for pulp
  - Existence of technical support facility and standards
  - Availability of education for Pulp and Paper
  - Existence of local expertise and technologies
  - Environmental management systems in place in various mills
- Opportunities
  - Growing paper and board demand in both local and export markets
  - Philippine climate best for growing hardwood tree species in short-cycle and environmentally sustainable forest plantations
  - Available land resource for pulpwood plantation development
  - Utilization of other non-wood species and agricultural wastes as source of fiber
  - Use of abaca in local production of security paper and reinforcing fiber for recycled papers
  - Growing demand for recyclable, biodegradable, and renewable materials



## **SUPPORT TO INDUSTRY DEVELOPMENT**

### ▪ **General Support**

- Continuous updating of standards for the pulp and paper industry by a multi-sectoral technical committee within the Bureau of Product Standards of the Department of Trade and Industry
- Availability of education for pulp and paper. The University of the Philippines offers the BS Chemical Engineering major in Pulp and Paper Technology to cater to the needs of the pulp and paper industry for engineering professionals trained in the science and practice of pulp and paper making.

### ▪ **Specific Industry Programs**

- Coordinate with LGUs, recyclers, industries, schools, communities, offices and institutions, NGOs and village organizations in planning and implementing measures in raising wastepaper recovery and recycling rate.
- Mechanize waste paper sorting plants in cities and major towns to improve the quality and transportability of specific grades of recovered wastepaper.
- Draw up a comprehensive plan that will ensure sustainable supply of raw materials through the establishment of industrial tree plantation projects, improved waste paper recovery and harnessing the potentials of non-wood fibrous materials for papermaking.
- Enhance the competitiveness of the pulp and paper industry through integration, consolidation/merger of existing paper mills and undertaking modernization, retooling and rehabilitation plans that will raise efficiency, enhance productivity and improve quality of paper and paper-based products
- Encourage the establishment of power generating plants in medium-size paper mills to achieve self-sufficiency in power and steam.
- Promote joint venture agreements with foreign firms (for technology transfer, marketing access and financial equity), thus achieving international competitiveness and economy of scale.
- Adoption of cleaner production technologies in existing and new pulp and paper projects.
- Establishment of new pulp and paper testing and research facilities within 5 years, whether mill-based or independent laboratory services.
- Increase number of pulp and paper engineering professionals within the next 5 to 10 years.



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