

The Philippine bamboo and rattan industries: Changing structure and the implications for market competitiveness and policy

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Abstract: There have been considerable changes in the Philippine non-wood industries particularly rattan and bamboo. Generally, competitiveness has declined due to raw material constraints and rising labour costs. In particular, rattan production capacity has declined as well as its export shares *vis-à-vis* wood products. Exports, however, have remained focused on the midrange and high-end segments of the market. Premium quality products are increasingly being sold in local markets due to growing environmental consciousness, rapidly developing ecotourism, and improving purchasing power of the population. The Philippines will continue to be a major world supplier of premium quality bamboo and rattan products. Due to their potential as a significant source of income and livelihood to upland and forest communities and to rural and urban workers, the need for concerted efforts to maintain the competitiveness of these industries in the global market poses a major challenge to stakeholders and policymakers. The elements of a comprehensive and strategic course of action for these industries are as follows: effective raw material supply management; continuing R&D for product, process, and market development; and favourable support systems (policy, institutions, and infrastructure) in the entire value chain from government and private sectors.

Key words. Bamboo and rattan, trade, markets, policy.

INTRODUCTION

Rattan and bamboo are the most important NTFPs for market and home consumption in the Philippines. Both are naturally growing in public forests throughout the country, but the bulk of the commercially important bamboo is grown in private lands. A total of 62 bamboo species are found in the Philippines, of which 8 are commercially important. The common species are *Bambusa spinosa*, *B. vulgaris* and *Schizostachyum lumampao*. There are 69 known rattan species distributed under five genera: *Calamus* (48 species), *Daemonorops* (14 species), *Korthalsia* (5 species) and *Plectocomia* (2 species). Of the 69 species, 12 are commercially important.

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Rattan and bamboo products are highly valued for a number of reasons. First, they provide livelihood for upland and rural communities as well as families in urban areas employed in small, medium and large-scale furniture and handicraft industries. For rattan alone, earlier estimates indicate some 15,000 rattan gatherers and 2,000 handicraft and 15,000 furniture manufacturers employing 768,000 workers and subcontractors (Kilmer, 1994; BETP, 1994). One study showed that the annual economic value of bamboo for households based on consumption for home and markets ranged from PhP3,512 to PhP134,245 (exchange rate was 46 to 48 Philippine pesos for every US dollar) depending on the production and market environment (Pabuayon, 2001). Second, they contribute as much as US\$129 million to the annual foreign exchange earnings of the country through diverse furniture and handicraft products exported to many countries. Third, bamboo supports the housing needs particularly of rural households as well as the material and infrastructure requirements of agriculture and fishing sectors. And fourth, significant benefits are derived from NTFPs in the form of non-marketed and therefore unpriced environmental services such as water and soil conservation, carbon sequestration, and biodiversity.

The Philippine bamboo and rattan industries, however have changed considerably through time in response to the developments in both domestic and international fronts. These developments relate to changes in comparative and competitive advantage of producing countries, globalization and trade liberalization trends, and changes in local market conditions. This paper examines the structural changes occurring in these industries in the light of these developments. It also identifies the implications for policy and strategic courses of action needed to maintain the market competitiveness of these industries.

SCOPE OF THE STUDY AND DATA SOURCES

To understand the structural changes occurring over time, the study involved a review of previous works done and analysis of time-series data for key variables on the Philippine bamboo and rattan industries. The studies and reports that were reviewed mostly focused on sectoral analysis and production-to-consumption linkages for the two industries. Data relating to production, marketing and trade were taken from the forest and trade agencies, namely, the Department of Trade and Natural Resources or DENR and Department of Trade and Industry or DTI (DENR, various years).

THE CHANGING STRUCTURE OF THE BAMBOO AND RATTAN INDUSTRIES

In general, these industries are experiencing declining competitive advantage *vis-à-vis* other producing and exporting countries such as Indonesia and China. Such situation results from two major factors, namely, the dwindling supply of raw materials and rising labour costs. Because these industries are raw material- and labour-intensive, both factors directly affect the production cost of firms and therefore offer prices for their products to local consumers and importing countries.

The problem of raw material supply has begun to be felt as early as the 1980s when rattan producers and exporters already called for concerted efforts toward proper management of rattan resources. This came at the time when demand for premium quality Philippine rattan furniture in the international market particularly North America, Europe and Japan hit record highs. This was also when the major rattan exports of Indonesia were still raw rattan poles and wicker and so the Philippines was practically the major supplier of quality finished rattan products in the world market. The major concern was that given the high extraction rate of rattan resources associated with the strong world market, the industry would experience shortage of raw materials. A few initiatives were undertaken to address this concern but these were largely unsuccessful. Most R&D efforts toward sustainable rattan management were not translated into actual plantation development. At the same time, the continuing deforestation took its toll on the rattan resources which are all found in the natural forests.

Labour costs in the Philippines have continued to rise resulting from the series of adjustments in the minimum wages in the last two decades. Inflationary trends contributed to demand for higher wages. There is also an apparent shift among those which have opportunities toward vocational skills and professional training required in other industries and the rapidly growing services sector particularly in information and communication technology. In the 1980s, some highly skilled workers in rattan factories were also lured to work in various rattan-based companies in Indonesia.

Input sourcing and utilization

In the past, all raw materials used in rattan factories were sourced locally. Since natural forests are largely state-owned, extraction of rattan by private individuals and firms is allowed through a system of licensing. Permits are issued to allow collection of rattan for a given volume, area, specified time period, with corresponding payment of fees. There were, however, illegal operations that contributed to indiscriminate extraction. The permittees usually employ rattan gatherers who are mostly the indigenous people in the upland and forest communities. As shown in Figure 1, there was a rapid growth in the number of rattan collection permits from the 1980s until the year 2000 when 370 licenses were recorded to have been issued. Thereafter, permit issuance abruptly declined until there were only 35 in year 2005.

The situation for bamboo was less alarming since the export industry was relatively small and most commercial bamboos are privately-owned. Nonetheless, in major producing areas like some parts of northern and central Philippines, where there is high dependency on the bamboo furniture and handicraft industry, stakeholders have expressed concern over the sustainability of the resource. As a result, a master plan for bamboo development was formulated sometime in the late 1990s (CITC-DTI, 1997). The plan for the rattan industry was formulated much earlier as part of the Philippine Forestry Development master plan (DENR, 1989).

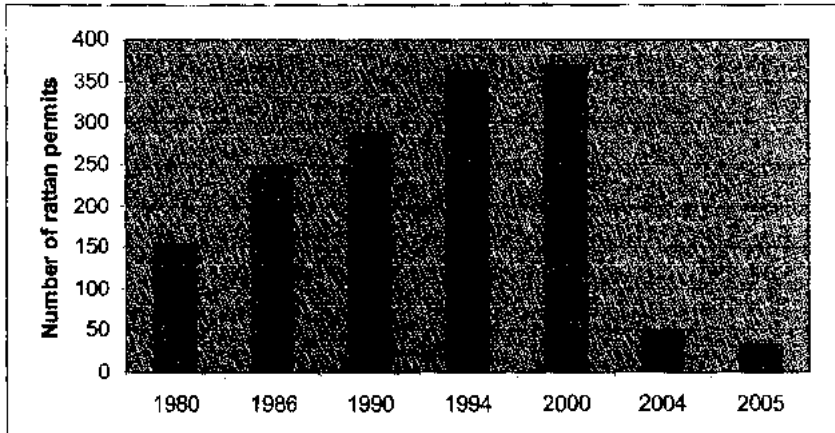


Figure 1. Number of rattan collection permits issued, Philippines, 1980-2005.

Despite a relatively smaller rattan industry today, rattan producers augment the local raw material supply with imports. It is estimated that about 14 per cent of raw materials currently used come from abroad. Recorded value of bamboo and rattan imports shows quite erratic behavior through time but is generally increasing with a range of US\$ 0.39-1.50 million for the period 1996-2006 (Fig. 2a). Of the total import value, 86 per cent to 90 per cent is for raw materials (Figs. 2b, 2c).

In response to the raw material problem, producers developed some adaptation strategies. Input utilization of firms changed from the previous 99 per cent pure rattan or bamboo to greater use of smaller diameter and combination of rattan or bamboo and other materials (wood, metal, indigenous fibers). This led to increasing use of other indigenous materials. The result is greater product diversification and changes in product designs for both furniture and handicraft. Today, more firms carry different product lines than before. Generally, however, the bamboo and rattan industries have remained labour-intensive from raw material harvesting to quality control and packaging of final products for delivery to markets. For a few large firms, some degree of mechanization in certain manufacturing stages is adopted.

Production capacity

Capacity utilization for furniture firms declined from over 90 per cent based on a survey of rattan manufacturing firms in 1987 to about 57-77 per cent in the last survey (Pabuayon *et al.*, 1988; Pearl2, 2004). This last survey also showed that the firms are still predominantly small and medium-scale, majority are locally-owned with a few that is partly-owned by foreign nationals, 60 per cent of output are produced by Cebu firms (central Philippines), and firms employ both male and female workers. Moreover, up to 80 per cent of production is through sub-contracting arrangements with 60-90 per cent of output going to the export market. The surveyed firms target the mid-range to high-end market segments both locally and abroad. Figure 3 shows some of

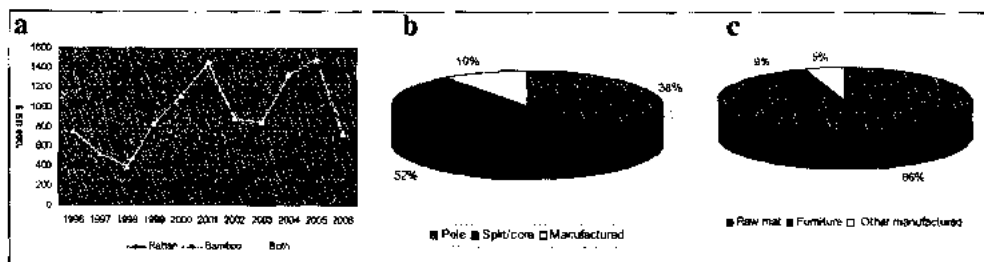


Figure 2. a: Rattan and bamboo imports ('000 US\$), Philippines, 1996-2006; b: percentage shares of rattan imports, Philippines, 1996-2006; c: percentage shares of bamboo imports, Philippines, 1996-2006.

the Philippine products reflecting the high level of craftsmanship of local rattan and bamboo firms (pictures are shown with permission from Sun Valley Rattan).

Domestic and foreign trade and markets

There are no official figures that provide estimates of the size of the domestic market for bamboo and rattan, yet they are widely and commonly used by Filipino households in various forms. Thus the domestic market is considered to be much larger than the export market. Bamboo has a large market potential considering its numerous uses particularly in rural areas for housing, agriculture and fishing industries, and in the production of laminated products, pulp and paper, and charcoal. The domestic rattan market is also growing as evidenced by the increasing display and sale of premium quality furniture in department stores and shopping malls. Although mainly for export, such quality furniture is making significant inroads in the domestic market as household incomes and the number of business establishments (hotels, restaurants, resorts) with preference for natural furnishings increase. The regular market for ordinary and lower quality products affordable to lower income groups is however larger and also rising with population growth. In general, the ordinary and upscale markets are expected to expand due to the growing environmental awareness of consumers that shifts preference toward green products including NTFPs as well as the expanding ecotourism industry in the country.

The problems confronting the Philippine rattan and bamboo industries *vis-à-vis* the increasing competition posed by Indonesia, China and other southeast Asian countries have caused contraction in exports of these two products. While the 1980s show significant growth in exports, a steady decline with year-to-year variability is apparent starting in the mid-1990s (Figure 4). Highest value was in 1997 at US\$ 129 million but since then, export has plummeted to only US\$ 66 million in 2006. For rattan, there was a decline of 5 per cent annually during the period 1995-2006, a sharp contrast to 38 per cent annual growth rate during the period 1978-1985 (Pabuayon *et al.*, 1988). Recent export figures are comparably lower than in the 1980s and early 1990s. Export revenues from rattan furniture and handicraft reached US\$ 242 million in 1994 (Pabuayon, 1996).



Figure 3. Philippine bamboo and rattan products.

With the decline in rattan and bamboo furniture exports, their export shares *vis-à-vis* other types of furniture exported by the Philippines also decreased. In 1987, rattan furniture export comprised 73 per cent of the total furniture export value in 1987 (Pabuayon *et al.*, 1988). In 2001, bamboo and rattan furniture's share was 33 per cent of the total furniture export amounting to US\$ 287 million (Figure 5a). But in year 2006, this share was reduced to only 23 per cent of the total furniture export amounting to US\$ 275 million (Figure 5b). In contrast, the share of wood furniture rose sharply from 40 per cent in 2001 to 52 per cent in 2006. Basket/wickerwork export also reveals a downward trend during the period 2001-2006. The export value was US\$ 78 million in 2001 declining to US\$ 52 million in 2006 (Fig. 5c).

On the demand side, declining export relates to a generally weak purchasing power of buyers resulting from continuing financial difficulties that started in mid-1997 in Asia and spreading to major economies all over the world. At the same time, China poses intensified competition whose competitive advantage lies in its low labour cost, use of improved technology in factory operations, and abundant bamboo resource base. The current oil crisis and economic slowdown in the USA are expected to affect economic growth in many importing countries that eventually will take its toll on the demand for Philippine products including bamboo and rattan. On the supply side, the major constraint relates to the uncertainties of sustaining quality raw materials at affordable cost for the industries to remain price- and quality-competitive with substitute products both in local and foreign markets.

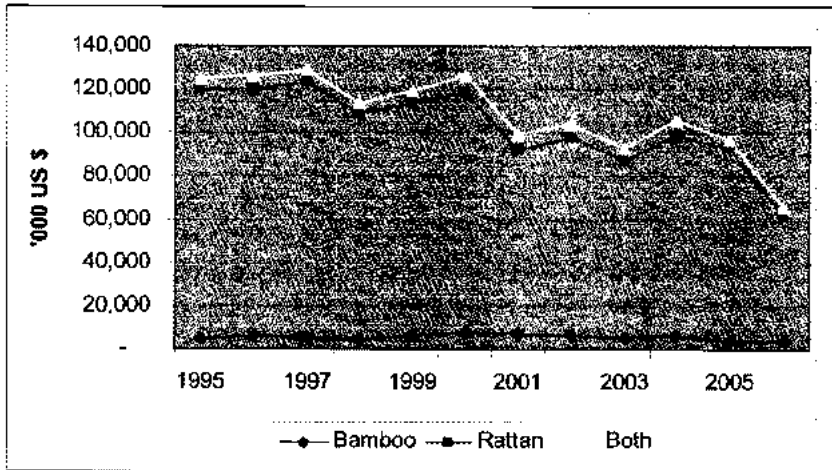


Figure 4. Rattan and bamboo exports ('000 US\$), Philippines, 1995-2006.

Market diversification and trading partners

Philippine bamboo and rattan products are exported to countries all over the world. However, the top ten importing countries and their respective shares are as follows: USA (excluding Hawaii) – 61.31 per cent, Japan – 5.10 per cent, Australia – 3.37 per cent, Hawaii – 2.74 per cent, Italy – 2.42 per cent, Great Britain – 2.22 per cent, Spain – 2.21 per cent, France – 2.08 per cent, Canada – 1.79 per cent, and Netherlands – 1.58 per cent.

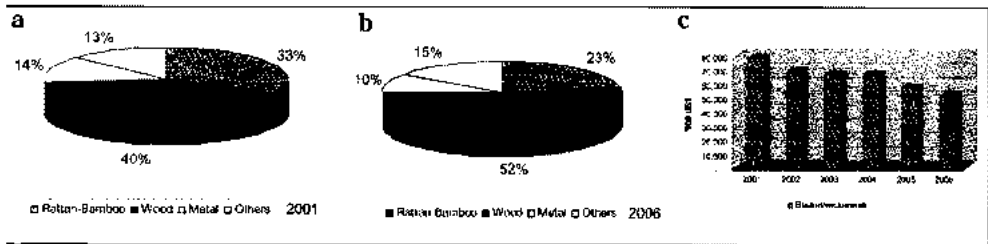


Figure 5a. Furniture export shares by type, Philippines, 2001; b: furniture export shares by type, Philippines, 2006; c: basket/wickerwork exports ('000 US\$), Philippines, 2001-2006.

On a regional basis, the biggest markets are North America, the European Union and Japan/Australasia (Table 1). In the late 1990s, their aggregate share was 90.69 per cent of the total Philippine bamboo and rattan exports. This share was maintained in recent years at 90.16 per cent. However, the relative shares changed with the USA's share increasing from 49.12 per cent to 66.22 per cent, while that of the EU decreased drastically to less than half from 30.85 to 14.84 per cent. The share of Japan/Australasia slightly decreased from 10.72 to 9.10 per cent. While the shares of South America,

Table 1. Regional shares of Philippine bamboo and rattan export markets, 1997-1998 and 2005-2006

Region	% of Phil B &R export 1997-1998	% of Phil B&R export 2005-2006
North America	49.12	66.22
Central America	0.06	0.53
South America	1.64	1.03
European Union	30.85	14.84
Eastern Europe	0	0.18
Western Europe	0.43	1.01
Japan/Australasia	10.72	9.1
ASEAN	1.19	0.74
China/Korea	1.41	1.29
Middle East	1.85	3.6
Africa	0.61	0.43
Caribbean	1.9	1.06
Others	0.26	0

ASEAN, China/Korea, Africa and the Caribbean also fell, some growth was achieved for the Middle East, Eastern and Western Europe, and Central America. On the whole, markets in recent years became more diversified based on counts of individual countries importing from the Philippines. To the extent, however that overall exports declined, imports of individual countries from the Philippines are smaller, on the average, in recent years.

POLICY IMPLICATIONS, CHALLENGES AND OPPORTUNITIES

The potential commercial value of these industries is close to US\$ 180 million considering the export sector. Its contribution to the domestic market also appears large based on current consumption levels of households and industries for housing, agricultural and fishery structures, and marketed products. The continuing relative importance of these industries has various policy implications (Pabuayon, 2007). Overall policy environment must provide emphasis on the following:

- 1) The urgency of addressing the declining competitiveness of these industries.
- 2) Seeking and providing new opportunities for displaced workers and small operators affected by the contraction of business operations.
- 3) The need for more organized and concerted courses of action to provide solutions to the problems of the industries.
- 4) Greater investments in human and capital resources to improve labour productivity and ensure a sustainable resource base.

Providing a favourable policy environment for the bamboo and rattan industries should take into consideration the various challenges and opportunities. These are as follows:

- a) Superior craftsmanship of local producers and workers for meeting the demand of medium and high-end market segments.
- b) Growing domestic market arising from growth in population and purchasing power.
- c) Enhanced environmental awareness that provide the stimulus for developing ecotourism and green markets.
- d) Bamboo and rattan are renewable resources.
- e) Integration of plantation development in community-based forest management initiatives.
- f) Continuing R&D in production, processing and utilization.
- g) Adaptation strategies in sourcing and use of alternative raw materials.
- h) Liberalized trade that provides access to markets and imported production and manufacturing inputs.
- i) Explicit government support for small and medium scale enterprises.

STRATEGIC COURSES OF ACTION FOR COMPETITIVENESS

Without de-emphasizing the non-marketed and unpriced benefits derived from NTFPs, the investment incentives for developing NTFPs, particularly bamboo and rattan are expected to come largely from their commercial or market value. This implies that expansion of the NTFP market, both local and foreign, will provide the investment opportunities for NTFP producers, sellers and business firms. Developing the NTFP market and being able to effectively compete in that market therefore should be strategic areas for NTFPs.

To remain globally competitive in the NTFP market, basic conditions must remain in place. As expounded by Porter (1990), the key determinants of international competitiveness of industries are anchored on four major areas, namely: (a) factor conditions, (b) technology, (c) policies, and (d) support institutions and industries. Factor conditions encompass the quantity, quality and growth of productive factors and natural resources; technology refers to the rate and nature of technology generation, transfer, adaptation and diffusion; policies include both sectoral and macroeconomic policies; and support systems include institutions and mechanisms, supporting and related industries, and infrastructure. The strategies must also focus on ensuring that the key foundations of competitiveness are put in place. These are productivity of resources, efficacy of policies, innovation, and peoples' positive values. Applied to NTFPs, the strategic areas for enhancing global competitiveness are as follows (Pabuayon, 2007):

- (1) Sustainability of the raw material resource base through plantation development, enrichment planting and regeneration of existing NTFP stands.
- (2) Continuing R&D for generating technologies to develop new products and uses, and improve the efficiency of current production systems.

- (3) Effective implementation of both macroeconomic and sectoral policies conducive for the development of NTFP enterprises (*e.g.*, liberalization of capital and foreign exchange markets, facilitative export procedures, tax incentives and privileges for importing basic raw materials and equipment, removal of trade barriers and difficulties associated with moving the raw materials from the harvesting areas to the factories or even to export markets).
- (4) Favourable support systems in both government and private sectors for continuing education and skills development for workers, technology generation and dissemination, improving transport infrastructure, and efficient communication for making available timely and useful price and market information and linking producers, traders and consumers.

Supply management programs should involve efficient allocation and use of financial resources for developing plantations starting from identification of suitable areas, facilitative procedures in the lease of public lands to interested investors, actual use of funds for planting operations, up to monitoring and evaluation of planted areas with accountability safeguards on the part of project implementers and local communities participating in the project. Whether public or private initiatives, production of raw materials must be market-oriented and therefore must identify and be linked to target markets and buyers. Without a definite mechanism for realizing production benefits (*e.g.*, favourable marketing and pricing arrangements between producers and users of raw material), only a limited success in such programs can be expected.

R&D must be directed toward product and market diversification through value-addition. Added value (utility) is created by ensuring that buyers obtain NTFPs in the required form, time and place. Specific activities for creating value involve product quality enhancement, product labeling, efficient packaging, and certification as required as in the case of "green" products. At the local level where there is market potential for NTFPs, integrated production-marketing operations using family labour and resources provide opportunities for increasing household income.

There should be a continuing review and analysis of forest policies relating to NTFPs such as for planting, harvesting, transport of raw materials from supply areas to demand areas, and prohibition of export of raw materials. In the Philippines, the problems relating to the movement of forest products are well known (*e.g.*, underreporting, multiple use of transport documents, unofficial payments) with the effects of constraining business operations and adding considerably to transaction costs. Addressing them once and for all requires serious efforts and should be in the priority agenda of the DENR. In general, the DENR should support policy reforms that create macroeconomic stability and incentives for a favourable investment environment, allocate more funds for productivity-enhancing activities, and promote market competition.

Effective support systems that provide information on markets, credit sources and technologies must be developed to strengthen linkages and complementarities among supplier-buyer industries (NTFP gatherers, traders and users) and between large enterprises and SMEs (exporters and village level makers of handicraft). There should be effective coordination among government units, the private sector, and the communities in upgrading local skills through training to improve labour productivity and product quality, and in providing support services.

CONCLUSION

Promotion of NTFPs in general, and bamboo and rattan in particular, should form part of the priority agenda for the Philippine sustainable development in view of the economic, social and environmental benefits derived from them. Strategic directions for developing NTFPs should be in line with the country's overall development framework for enhancing the competitiveness of domestic industries in the global market. A holistic approach that encompasses the various stages of primary production, utilization/processing, and market development should be pursued. This approach requires specific courses of action for (1) sustaining the flow of raw materials to NTFP industries through effective and efficient resource supply management schemes, (2) ensuring adequate R&D to improve current production systems both for raw materials and intermediate and finished products, (3) reforms in macroeconomic and sectoral policies toward more favourable investment environment in NTFPs, and (4) better coordination between the government and private sectors in the delivery of support services such as credit, technology and information.

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