The Philippine Rattan Sector: a Case Study of the Production-to-Consumption Systems

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FOREWORD

The Philippines is a major Asian producer of quality rattan products, generating more than US$ZOO million annually from exports and probably an equal value from the domestic market. Raw material production in the country employs an extensive and extractive method that is mostly dependent on rattan from natural forests. Like in most Asian countries, the increasing requirements of the manufacturing industry, aggravated by rapid deforestation, has created serious raw material problems in the rattan sector.

Rattan working is a traditional occupation of the Filipinos. There are more than 4 million people in the Philippines (about 6% of the population) who are dependent on the rattan sector for their livelihood or additional cash income. A vast majority of them are in such socio-economic straits that any adverse development in the sector would be of serious consequence to them. In recent times, the rapid resource depletion, increasing market competition and the inherent infrastructural and institutional problems of a developing economy have combined to put a question mark over the future of the rattan sector in the countrv.

It is gladdening to note that the government has made sustainable development of natural resources and poverty alleviation the thrust areas of its development strategy. The rattan sector, which is a major foreign exchange earner for the country, would admirably fit into the working of such a developmental strategy.

In view of this, INBAR commissioned, as part of its wider program of research onproduction-to-consumption systems of bamboo and rattan economies of several Asian countries, a study of an extensive rattan production system in the Philippines. The following pages contain the results of the study conducted by Isabelita Pabuayon and Leina Espanto of the UPLB College of Economics and Management, and Merlyn Rivera of the Ecosystems Research and Development Bureau.

The study attempts to provide an assessment of the Philippine rattan production system in order to identify strategic policy and research agenda for the sustainable development of this sector and improvement of the socio-economic conditions of rattan dependants. We hope that it serves as a useful tool for further examination and appraisal of the sector.

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1 INTRODUCTION

Background

This research attempts comprehensive assessment of the Philippine rattan sector to identify strategic policy and research agenda for: (1) the sustainable development of the sector and (2) the improvement of the socio-economic conditions of those primarily dependent on it for income and employment.

This effort supports the Philippine government's initiatives to:

1. Promote the sustainable development of its natural resources;
2. Undertake poverty alleviation programs, especially for disadvantaged groups; and
3. Pursue a rural area-based, employment-oriented, agro-industrial development strategy.

The information gathered by this research will contribute to enhancing the sector's database, which provides the basis for rational decision-making, and allow information exchange and interaction among the Network members.

Overview of the Philippine Rattan Sector

Sectoral contribution to the Philippine economy

The rattan sector has significant economic and social importance in the Philippines. It contributes to employment and income generation of people who have few other livelihood options. It also forms part of the way of life of these people who, over the years, have developed social relationships linked to the rattan production-to-consumption system.

Estimates made from various sources indicate the rattan dependency of more than 4 million people, excluding those in the trading business whose number is undetermined (Table 1). The sector's employment contribution is though to be about 6% of the total 68 million Filipinos. The largest subgroups are the workers and gatherers, the former concentrated in urban areas and the latter in rural areas, primarily in the uplands.

The Philippine rattan industry is a major exporter of high-quality rattan products to different countries. In 1994, foreign exchange revenues from rattan furniture and handicraft items amounted to US$241.64 million, up 27% from US$188.61 million in 1993. The biggest markets for Philippine rattan are the United states, to which more than half of the total sales are made, Japan (S%), the United Kingdom (5%) and France (3%). Other importers are Australia, Canada, Spain, Italy, Germany, the Netherlands, Taiwan-China, Belgium and Middle-East countries. New product forms are being developed, such as those combined with non-rattan materials like wood and wrought iron. They are now making significant inroads into the international market. In 1993, rattan furniture exports comprised about 56% of the total Philippine furniture exports. The growth of rattan exports is shown in Fig. 1.

Table 1 : Employment dependency on the Philippine rattan sector

Market participant		Estimated number	Source of data
Gatherers		15 000	Kilmer (1994)
Licencees		364	Phil. For. Statistics (1994)
Traders (raw mat./fin.prod)		Undetermined	
Manufacturers:	Furniture	15 000	BETP (1994)
	Handicraft	2 000	BETP (1994)
Workers:	Furniture	468 ooo	BETP (1994)
	Handicraft	300 000	BETP (1994)
Transporters		Undetermined	
Plantation contractors:			
	Family	111	NFDO, DENR
	Community	1 780"	NFDO, DENR
Total families		802 255	
Total individual		4 011 272[b]	

a = Based on 89 community contractors assuming at least 20 families each.
b = Assuming 5 members per family.

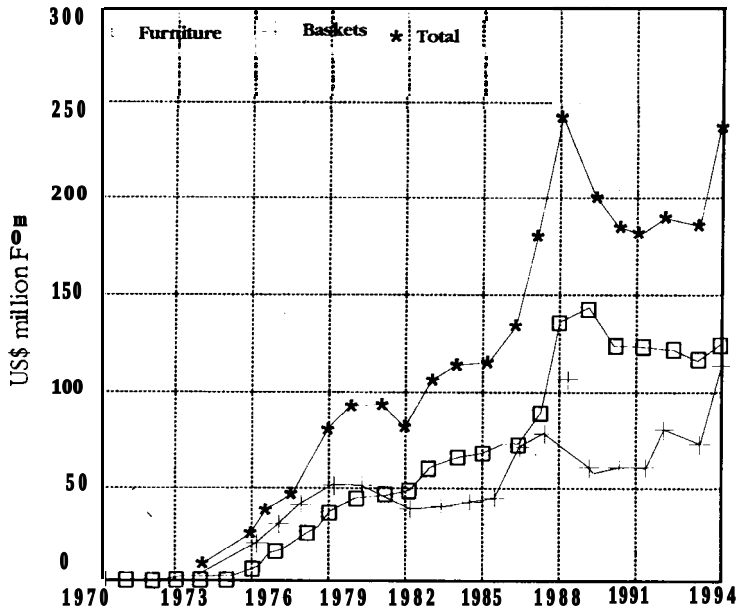

Fig 1: Philippine exports of rattan furniture and baskets / wicker-ware

The domestic rattan market is also growing but there are no estimates of actual market size. New manufacturing and trading shops have emerged, especially in newly industrializing areas of the country. Increasingly, rattan products are substituted for traditional wood furniture items, which are relatively more expensive owing to wood scarcity.

The extensive production system

Rattan grows wild in the natural forests. Exceptions are some 6 000 ha of plantations pioneered by two companies. Additional areas cover another 6 000 ha developed through government reforestation program.

The 1987 Philippine-German inventory placed rattan resources at 4.6 billion linear metres (lm) broken down into 63% <2 cm diameter and 37%>2 cm diameter poles. These figures may be much lower now, considering that ratan is continuously harvested to meet the requirements of the industry.

Since all forests are publicly owned, cutting permits are required for rattan collection, as is the case for timber extraction. The permit specifies an Annual Allowable Cut (AAC) and is renewable annually. DENR Administrative Order (DAO) 4 Series of 1989 provides for equitable access to rattan resources by including indigenous cultural communities (ICCs), cooperatives, rattan gatherers' associations, private individual and corporations among those eligible to apply for rattan permits. There are two types of permits: (1) the negotiated contracts for ICCs; and (2) the bidded contracts for individuals and corporations. As of 1994, there were 364 licences issued with an aggregate AAC of 211 million lm (Table 2). Recorded harvests are far lower than AACs and industry requirements of about 200 million lm. In 1994, it was only 9% of AAC indicating the great extent of under-reporting.

Whether negotiated or bidded, gathering is mostly done by tribal people who are dependent on forest resources for their daily subsistence. Gathered poles are sold to contractors through their agents or traders, at Prices usually dictated by the buyer as the gatherers are isolated from formal market transactions and information. As the prices at the gatherers' level are low, their only option is to gather as much as they can, leading to further undervaluation of the resource and even higher extraction rate. Administrative difficulties allow non-compliance to AACs, reinforced by corruption among government personnel who tolerate under-reporting of harvested volumes and non-payment of correct forest charges in exchange for a profit share from contractors. This results in considerable revenue losses to government and indiscriminate rattan cutting. Similarly, rattan permits could be renewed even without compliance to the required replacement planting for the harvested rattan. In the long term, the sustainability of the resource is threatened and gatherers suffer the unfavourable impact of the loss of an income source. Other potential impacts include high cost of raw material supply for the industry, and eventual losses of competitiveness, employment opportunities and foreign exchange earnings.

Continued harvests without replenishment has created raw material problems for the industry to the extent that domestic supply is now augmented by imports of rattan poles and semi-processed products like wicker or inner core. However, statistical data do not show the actual volume of imports of manufacturers and exporters. The 1994 data from the philippine Forestry Statistics indicate that the country's imports of rattan had amounted to only 294 tons

Table 2. Rattan licenses granted, allowable cut and rattan harvested in the' Philippines **(1978-94)**

Year	Split rattan			Unsplit rattan			Total		
	Licences (number)	Allowable cut ('000 kg)	Harvest ('000 kg)	Licences (number)	Allowable cut ('000 lm)	Harvest ('000 lm)	Licences (number)	Allowable cut ('000 lm)	Harvest ('ooo lm)[a]
1978	52	166	186	121	6 919	6 889	173	8 911	9 121
1979	48	142	1 055	107	5 632	10 628	155	7 336	23 288
1980	41	144	348	106	21 887	12 758	147	23 615	16 934
1981	5	606	1 177	69	14 736	33 511	74	22 008	47 635
1982	...	---	195	----	---	15 594	---	---	17 934
1983	...	---	73	152	60 141	24 244	152	60 141	25 210
1984	10	3 502	2 770	171	41 463	25 370	181	83 487	58 610
1985	1	12	72	206	51 861	19 437	207	52 005	20 301
1986	7	---	249	247	47 550	28 588	254	47 550	31 576
1987	14	93	98	278	58 216	33 902	292	59 332	35 078
1988	10	54	54	231	45 100	34 215	241	45 748	34 863
1989	....	---	30	179	38 284	33 254	179	38 284	33 614
1990		7	10	287	140 270	19 266	288	140 277	19 386
1991	---	---	568	323	173 016	25 732	323	173 016	32 548
1992	---	---	30	356	189 582	22 693	356	189 582	23 053
1993	---	---	....	.....	---	24 845	370	209 094	24 857
1994	---	---	4	---	---	19 088	364	211 022	19 138

[a] = 1 kg split rattan is equivalent to 12 lm unsplit rattan.

— = Not available /not recorded in PFS.

Source of basic data: Philippine Forestry Statistics, 1889-94.

valued at $761 000 which is an underestimation of the actual volume. Information collected from different large exporting firms, particularly in Cebu and Angeles City, revealed that they ger some imports. All these point to the need to sustain the supply through government and private efforts.

Research Objectives

1. To describe the Philippine rattan production system with:

   (a) description of the flow of rattan from the production of the raw material through to the final consumer;
   (b) cost-pricing (determining value-addition) at each stage; and
   (c) identification of the major stakeholders in the system, along with an assessment of their interests and conflicts.

2. To identify groups within the system as potential targets for development interventions based on: (a) poverty, (b) the number of people involved, (c) the degree of importance of rattan to the group, and (d) the importance of rattan particularly to disadvantaged groups (women and children).

3. To describe fully the decision-making environment of the target group in terms of knowledge, resources and incentives with full consideration of the direct and indirect effect of policy and issues such as available of credit, land tenure and institutional framework.

4 To identify opportunities for change to a system which will lead to sustainable development within the target group including:

   (a) description of the proposed system and the changes required;
   (b) identification of the main constraints faced by the target group in making the necessary changes; and
   (c) identification of appropriate interventions to overcome these constraints.

5. To make recommendations for action by INBAR client groups which include the poor and the disadvantaged people involved in the rattan sector, donors and multilateral development banks, NGOs and community-based development groups, researchers, and the private sector (including foreign investors).

Methodology

Analytical framework

The study adopted the production-consumption systems framework which:

1. identifies the major participants/subsectors comprising the sector;
2. determines their functions and roles and the interrelationships among them;
3 assesses the decision-making environment of the participants, comprising the technical, institutional, economic and social aspects, and
4 identifies the constraints affecting the sector.

Fig. 2 presents an overview of the Philippine rattan sector in terms of the major participants/subsectors (raw material gatherers and traders, finished product manufacturers and their workers and traders, and service groups involved in product movement) and the product flow.

The performance of the sector and its further development are dependent on how well the various subsectors are linked with one another, how efficiently information and signals are passed on through the system, and how well the information is used to effect decisions. A failure in the market or any part of the system may cause inefficiencies in product movement and/or inequity in the distribution of benefits among the market participants. If, for instance, raw material requirements of manufacturers are not properly transmitted to gatherers and traders, requirements of finished product buyers will not be met. Similarly, transport and processing inefficiencies lead to higher costs and reduce the country's competitiveness in the world market. Uncompetitive behaviour and imbalance in the market power of market participants lead to inefficient pricing that causes low prices of rattan at the gatherer's level.

Fig. 3 shows the difference in the value of output (finished product) and input (raw material) among the market participants. The price/value differential (called marketing margin) is determined by the extent of intermediate activities performed between raw material production and transformation into finished product until it finally reaches the consumers. Generally, more activities (processing, transport, packaging, storage, quality control, merchandising) mean higher costs and margins.

The study attempted to address the following issues:

1 The Philippine rattan distribution-consumption system is a complex one characterized by a large number of market participants. Production of raw materials is largely extensive with little management input as rattan is being almost entirely obtained from natural forests. Manufacturing of finished products is undertaken by both large and small operators, with the former having a greater access to markets, technology, information and other inputs.

2. Gatherers have little participation in value-adding and marketing activities owing to financial, technical, managerial and infrastructural constraints and poor market linkages.

3. Cost of raw materials at the users' level is high because of the multiplicity of channels, high costs of transport and payment of unofficial fees.

4. Gatherers, workers and small manufacturing operators are the most economically disadvantaged groups.

5. Rattan supply management is unsatisfactory, and the government's institutional and policy framework inadequate, to address the supply problem.

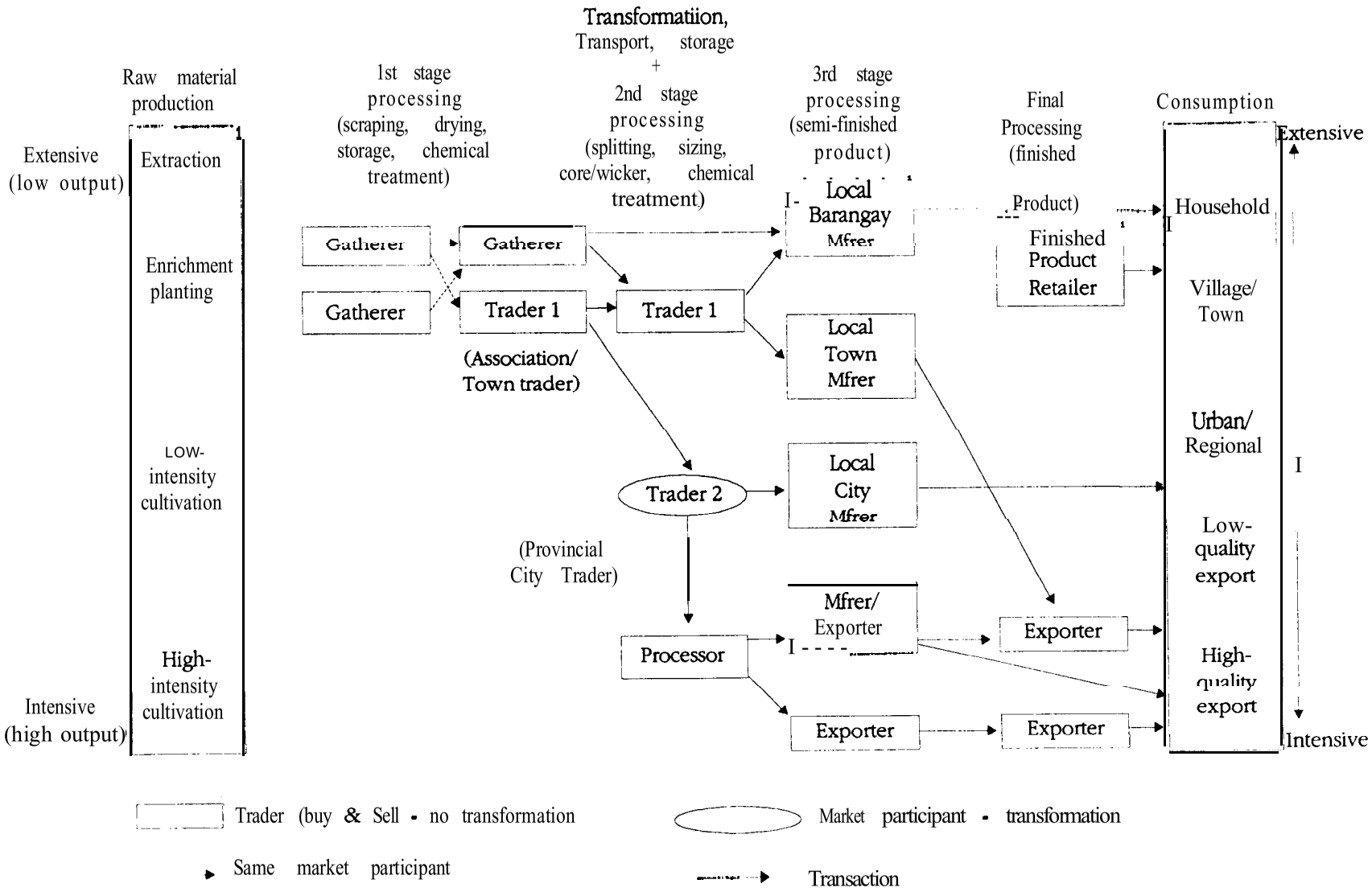

Fig 2: Rattan production-to-consumption flow in the Philippines

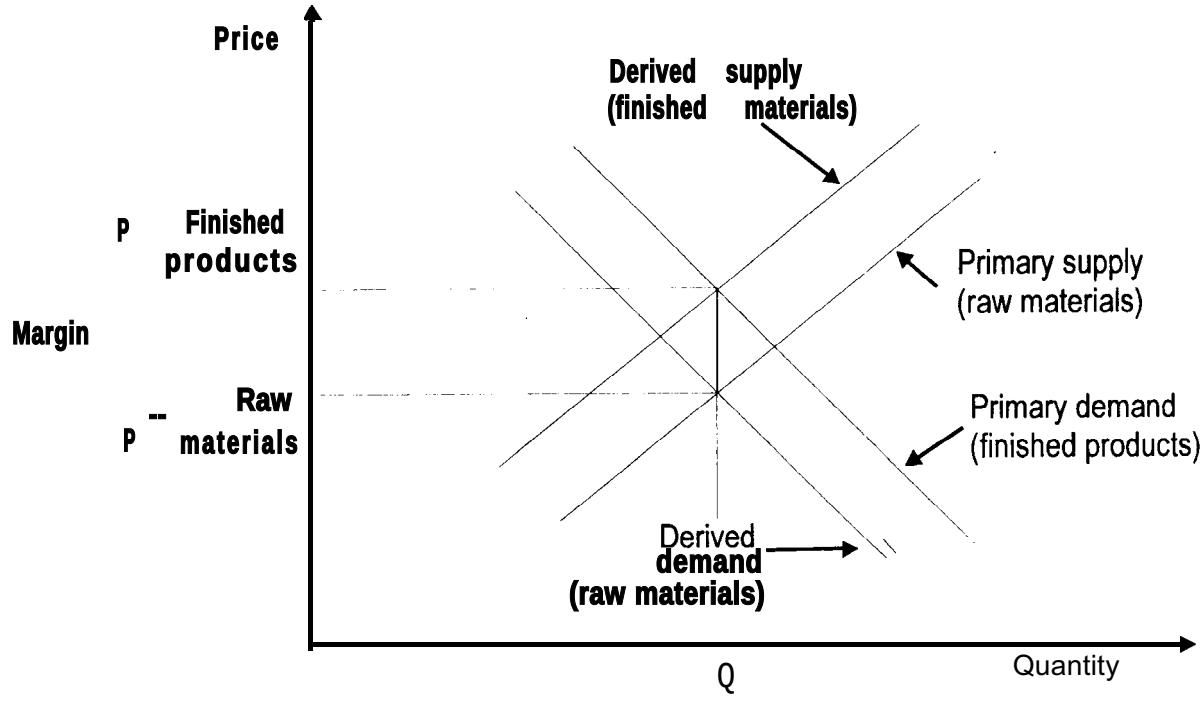

Fig. 3: Theoretical determination of marketing margin

Types of data

Both primary and secondary data were used in the study. Primary data are micro-level data collected directly from the market participants providing details on their socio-economic characteristics, operations, problems and linkages. Secondary data are macro-level time series data obtained from government agencies and other sources. They provide an overview of the rattan industry.

Method of data collection

Primary data were collected through surveys of all market participants from gatherers of raw materials to sellers of final products. Questionnaires were used during personal interviews with the respondents. Interviews were also conducted with personnel of government agencies and industry associations for their views on specific issues and problems affecting the industry.

The survey sites included rattan gathering, trading and manufacturing areas. Respondents included gatherers, traders of raw materials and finished products, transporters, manufacturers of furniture and handicrafts including their workers, and plantation owners (identified with the assistance of DENR, UNAC-PBSP, other NGOs in the survey areas and the respondents themselves).

Analytical techniques

Data analyses were generally descriptive, making use of descriptive statistics like frequency counts, averages and percentages. Results of analyses are presented in tabular form and, as

necessary, in graphical form. Specific techniques were adopted for analysis of marketing margins, distribution of consumer's product value, financial feasibility and problems/constraints for different subsectors. Analyses, in general, involved comparison of relevant parameters across market levels and types of participants.

- Marketing margin (MM) analysis involved getting the difference between the selling price of the finished product and the buying price of the raw materials that went into the finished product. MM was disaggregated into the cost and profit components of the different market participants. Distribution of the consumer value of the finished product among the participants was determined from the respective cost/profit shares.

- Financial analysis of rattan plantations involved determining the net present value (NPV) and benefit-cost ratio (BCR) from the discounted streams of benefits and costs of two large-scale plantations over a specified period.

- Regression analysis involved obtaining significant coefficients for various factors affecting income of market participants.

- Price analysis involved simple comparison of prices of different forms of raw materials and finished products at different market levels.

Scope of the Report

The report presents the general findings of the study, including identification and description of the roles and functions of the market participants, the product types, geographical flows and product value distribution, interrelationships among the market participants, their decision-making environment, characteristics and ranking based on these characteristics, rattan plantation development activities in the country, the problems and constraints of the industry, and the general interventions, conclusions and recommendations.

The Study Areas

An attempt was made to cover all major rattan production and demand areas in the country. These are shown in Fig. 4. The distribution of the 1994 aggregate AAC by region is presented in Fig. 5 (used as basis for identifying survey areas). Table 3 shows the gathering, plantation and manufacturing areas included in the study.

Rattan cutting areas

Conner and Kabugao, Apayao

These two adjacent towns in Apayao lie in the northern part of Cordillera Administrative Region (CAR), about 2-3 hours travel from Tuguegarao, the capital town of Cagayan Valley and 10 hours from Baguio City. The Igorot, Isneg, Ibaloy, Bago and Kalinga tribes occupy the areas, and each tribe is headed by elders called lakay. Residents are mostly dependent on upland rice, bananas and fruit-bearing trees like mandarin and guapple. Their main source of income is banana production and marketing as rice is only for home consumption. About half the population is dependent on rattan for augmenting income.

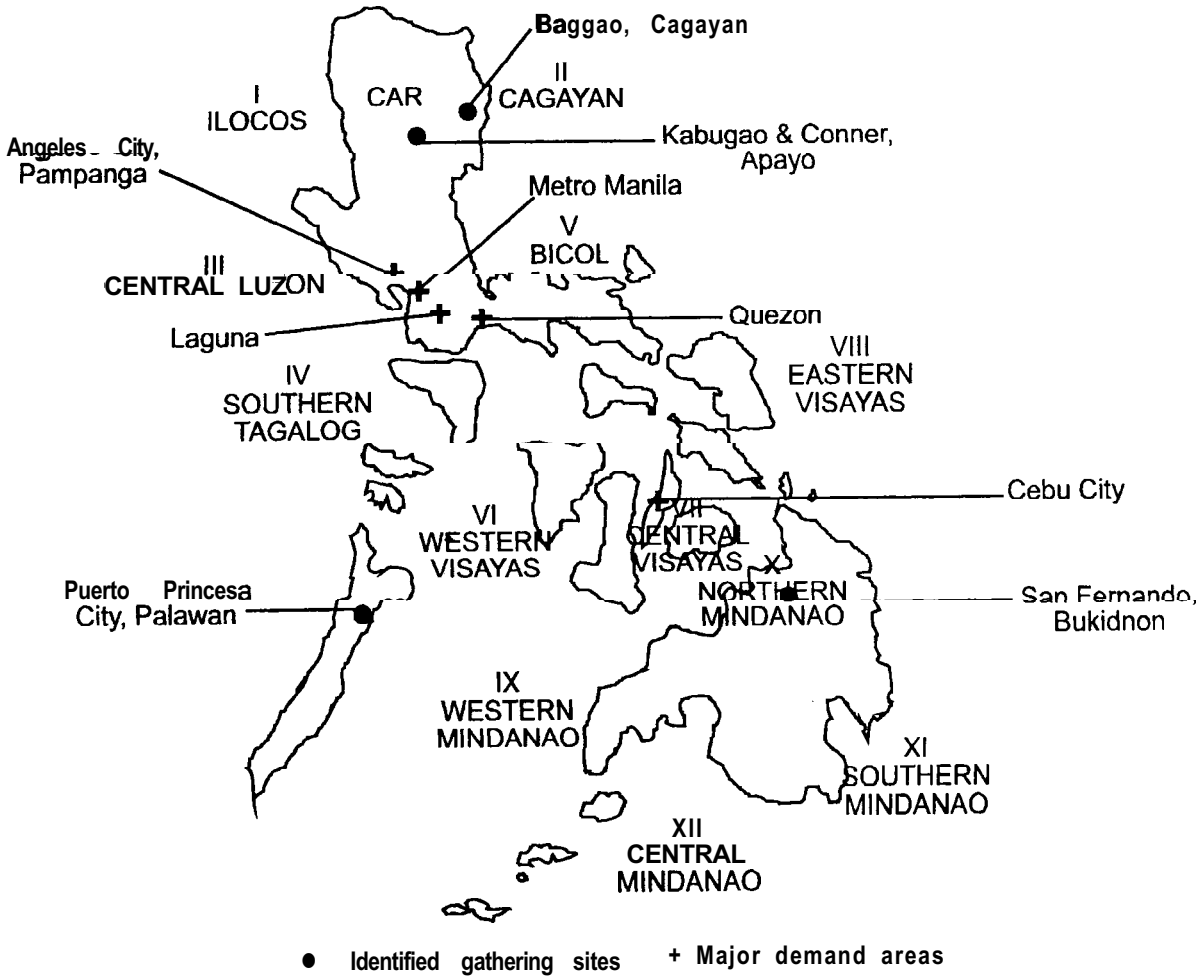

Fig 4: Study sites *(map is simplified and not to scale)*

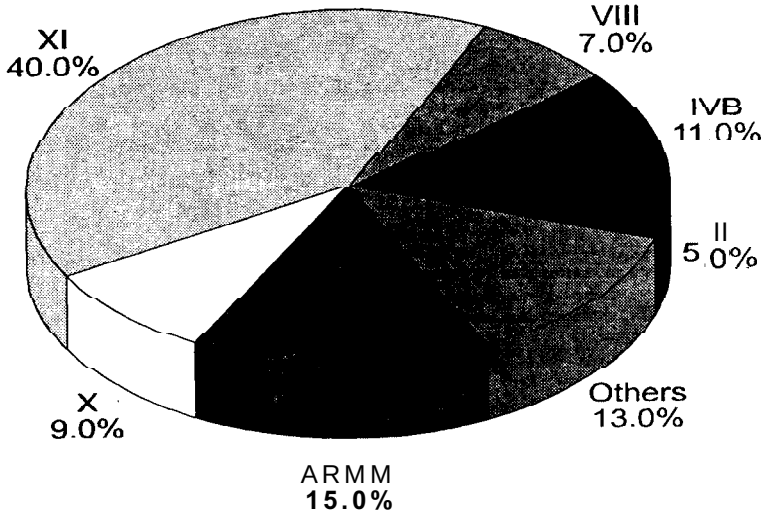

Fig 5: Distribution of annual allowable cut (AAC) of rattan by region

Table 3: Rattan areas surveyed

Area Type	Municipality / City	Province	Region
Gathering sites	Conner,Kanugao	Apayao	CAR
	Baggao	Cagayan	Cagayan valley (II)
	Puerto Princesa	Palawan	Southern Tagalog (IV-B)
	San Fernando	Bukidnon	Northern Mindanao (X)
Plantation sites	Talacogon	Agusan del Sur	Northern Mindanao (X)
	Bislig	Surigao del Sur	Southern Mindanao (XI)
Manufacturing / trading areas	Conner	Apayao	CAR
	Baggao, Tuguegarao	Cagayan	Cagayan Valley (II)
	Angeles, San Fernando	Pampanga	Central Luzon (III)
	Quezon, Pasay, Makati	Metro Manila	National Capital Region
	Tayabas	Quezon	Southern Tagalog (IV-A)
	Los Banos,Sta. Rosa, Calamba	Laguna	Southern Tagalog (IV-A)
	Puerto Princesa	Palawan	Southern Tagalog (IV-B)
	Cebu	Cebu	Central Visayas (VII)
	Cagayan de Oro	Misamis Oriental	Northern Mindanao (X)
	San Fernando	Bukidnon	Northern Mindanao (X)

Roads going to the towns of the province are winding, unasphalted and some pass near the cliff. Hence, transportation is very limited. Only a few jeepneys, small trucks carrying bananas or other fruits, and small passenger buses ply on the roads at l-2 hour intervals. During the rainy season, roads are very slippery and dangerous at the cliff side.

Rattan raw materials are generally sold to traders in other provinces by tribal permit holders. Only a few furniture manufacturers who reside in the innermost parts of the towns operate.

Baggao, Cagayan Valley

Baggao is located in the eastern part of the province, about one hour's ride from Tuguegarao, at the foot of the Sierra Madre Mountains. Residents are mostly Ilocanos. However, immigrants from the Cordilleras — such as the Igorots, Aetas and Agtas — are present in the mountain areas. The main dialects of the people are Ilocano and Igorot/Ibanag. Main crops for home consumption and sale are rice, vegetables and root crops. The mountain ranges yield good hardwoods like narra, (Philippine mahogany), as well as rattan and other products for furniture making.

There are only a few tribal rattan licensees operating in the province of Cagayan. Generally, these traders sell their raw materials to provincial traders, like those in Isabela, or directly to Manila. Rattan trade has caused the sprouting of many furniture manufacturing businesses, which are trying to penetrate the Metro Manila and export markets. Still, most local rattan furniture making firms are based in the towns and Tuguegarao, the markets of which are quite limited because their simple products remain uncompetitive in terms of quality.

Puerto Princesa City, Palawan

Located in the western part of the country and south-west of Manila, Puerto Princesa City is the capital of Palawan. Only a few barangays (small, independent village units) occupy the city while the remaining are situated near the mountains and coastal areas. Residents in the latter are mostly the Tagbanua and Batac tribes while immigrants like the Tagalogs, Visayans and Muslims reside in the city proper. The study covered the barangays of Maoyon and Maryugon which are 1 1/2 to 2 hours travel from the city. The main crops are rice, coconut, cashew and peanut. The people in the areas also rely on gathering of non-timber forest products (NTFPs) like rattan, almaciga and abaca. Those who stay near the rivers mainly live by fishing.

Roads to these barangays and other parts of the town are still unsurfaced, dusty and rugged. Similar to Apayao, the availability of transport is minimal. Vehicles like jeepney (called a "mega-jeepney" because of its big size) or passenger buses come every l-3 hours, but hardly any during the night. Electric power supply and telecommunication lines are not yet available.

Since Palawan is an island province, rattan is transported to the port by truck from the cutting areas and then by ship to Manila. Small furniture manufacturers are rapidly establishing in the city owing to rattan trade and the increasing number of institutional buyers, like hotels and restaurants, as well as residential customer. The main tribal licensee in Palawan is NATRIPAL, a federation of all tribal associations in the province.

San Fernando, Bukidnon

The town is located in the eastern part of the province, about 140 km from the famous Cagayan de Oro City of Misamis Oriental and 40 km from Malaybalay, the capital town of Bukidnon. It is nearest to the town of Valencia which is a 20-km ride on jeepney. The main residents of San Fernando are Bukidnons, who occupy the lowlands, and the Manobos, who are in the highlands. Many migrants, like the Visayans and the Tagalogs, have also come to the area. Settlements in the area consist of clusters of households under their own tribal leader called *datw* The people engage in kaingln farming of corn, planting of camote basket weaving and gathering of NTFPs like rattan and abaca.

The road connecting Valencia to San Fernando is very rugged, unsurfaced, dusty and rolling. Bridges along the way are not yet fully built and made of steel or wood where only one light vehicle can pass. Although only about 20 km away, San Fernando town proper is difficult to get to and takes time since there are only limited jeepney service, which is the lone means of transport.

Rattan is gathered from sloping to steep areas, one of which is Barangay Kibongcog 15 km from San Fernando town. The permit holder in the area is a *datu* who employs the Manobos in rattan harvesting. Manobos in other parts of the mountain areas gather for the local furniture manufacturers in the town. The major market for rattan from the concessions is Cebu.

Plantation sites

Under the contract reforestation program of the Department of Environment and Natural Resources (DENR), there are plantation sites in each of the 15 regions in the country. However, since most of these plantations have been newly established and the status of these was not yet known during the start of the study, these were not covered by the survey. Only two private/semi-government plantation areas were included. These are the Paper Industries Corporation of the Philippines (PICOP) and Provident Tree Farms, Inc. (PTFI) located in Bislig, Surigao de1 Sur and Talacogon, Agusan de1 Sur, respectively. Both provinces are situated in the Caraga Region in Mindanao. The people in Agusan de1 Sur are predominantly migrants from the Visayas who were attracted by the timber industry. The Manobo, Sagunto and Higaonon tribes have also settled in the province, particularly in the mountain areas.

Demand areas

San Fernando and Angeles City, Pampanga

These towns are located north-west of Manila, 1 to 1 1/2 hour's ride by bus. They are highly urbanized and are major tourist destinations because of the Paskuhan village in San Fernando, the Clark Air Base in Angeles City, old colonial churches and World War II scenic spots. Reaching these areas is not difficult because of the national highway leading to them from Manila. Angeles City is also the crossroad for buses going westward to Olongapo and Bataan and northward to Ilocos and Baguio.

The Pampanguenos, the main residents in these areas, speak the Pampango dialect. Farming and fishing are the main means of livelihood with rice and sugar cane being the major crops for the entire province. Other crops are banana, mango and eggplant. The people also manufacture garments, wood/non-wood furniture, gift items and toys for export. Despite the departure of the US personnel following the handing back of Clark Air Base to the Philippine government, the market for furniture, garment and handicrafts industries continues to grow, and the Pampanguenos continue to excel in their craft and compete in the market. The towns, however, are threatened by mudflows (lahar) from the nearby Mt. Pinatubo.

The towns are major sites of medium to large-scale rattan furniture and handicrafts manufacturing firms that sell to the export market. Small-scale manufacturers of good quality furniture also exist. These have succeeded in capturing the local markets, including Metro Manila. One of the largest companies in furniture making, the Asia Rattan, is located in Angeles City. The large AWECA group of companies, to which Asia Rattan belongs, has penetrated the rattan semi-processing, furniture and handicrafts making/exporting and shipping activities. Because of the large demand for raw materials and the suppliers' inability to meet this demand, a few manufacturing firms have started to establish rattan plantations. Asia Rattan was reported to have about 60 ha already planted with rattan, employing lahar-affected people in Pampanga. Another firm, Calfurn, has 50 ha planted with rattan.

Cebu City and Mandaue City, Cebu

Cebu and Mandaue, the most famous cities for furniture manufacture and export, are also the major cities of Cebu. They are highly urbanized and rapidly growing in commerce and industries. The cities, along with other cities in the province, are favoured tourist destinations and venues for business meetings. The cities are easily accessible by airplane or first-class ferries from Manila. There are also several international flights direct to Cebu.

Furniture and handicrafts making is found in the vicinity of Manadaue City, while raw material traders are located mostly in Cebu City. As large firms subcontract manufacturing jobs, families engaged in making frames and weaving furniture is a common sight along road sides. Large warehouses are also observable. Majority of the manufacturers in Cebu are exporters.

In Cebu City, Mehitabel company has contracted PTFI in Agusan del Sur to plant more than 5000 ha of rattan. However, mature rattan poles are yet to be harvested. Aside from vertical integration, these large firms in Cebu have also diversified to using other raw materials — such as combinations of wicker, fossilized stone, wood and wrought iron — in furniture manufacture. Similar to large exporting firms in Angeles City, these firms in Cebu have found the need for such a strategy in order to address the declining supply of raw materials in the face of strong competition in the world market. The declining demand for pure rattan-based products is another reason for product and material diversification.

Metro Manila, Laguna and Quezon

Metro Manila consists of eight cities and eight towns, the number of which varies almost each year because of administrative conversions of towns to cities. Balintawak in Quezon City is the main area where raw material traders deliver their rattan for retailing and where manufacturers from Manila, Laguna or Quezon come to buy their materials. Makati, Paranaque and Pasay City, are the major sites of handicrafts exporters' warehouses, although some exporting firms may be present in other parts of Metro Manila. Furniture stores and display centres abound including those in big shopping malls. They cater to the growing needs for high-quality rattan furniture of medium and high-income consumers.

As it is the centre for the country's commerce and industry, Metro Manila is also the major site for furniture manufacturing-exporting. Laguna is located south of Manila, a 2-3 hour's ride by car or bus. Towns such as Los Banos Calamba, Sta. Rosa and San Pedro are among the rattan furniture manufacturing sites where the local market is fast increasing because of the rising residential population and institutional buyers like resorts, restaurants and condominiums.

On the other hand, Quezon Province, particularly Tayabas, is well-known for its rattan handicrafts manufacturing and other cottage industries. Located east of Laguna and about 4-5 hour's ride from Manila, Tayabas is one of the main suppliers of handicraft products to Manila exporters. The people of the town are mostly rice farmers who work as subcontractors for the manufacturer-suppliers. Although Quezon province has vast forest lands, the volume of timber and other forest resources have now declined significantly, forcing the manufacturers to source raw materials from other provinces and regions.

2 THE RATTAN PRODUCTION SYSTEM

The Market Participants

The rattan market participants include all those involved from the production of the raw materials up to the point where the finished product is made available to consumers in the desired form, time and place. They are as follows:

- Gatherers who are mostly tribal people and could be members or non-members of a gatherers' association;
- Gatherers' associations, composed of gatherers residing in particular upland communities and organized for the purpose of obtaining a rattan cutting permit or undertaking other activities;
- Raw material traders who may or may not hold permits;
- Manufacturers who include producers of furniture and handicraft items;
- Workers who include subcontractors and in-house workers;
- Finished product traders who are engaged in trading at the domestic or foreign market or both;
- Transporters who include truckers and shippers; and
- Plantation owners who initiated rattan planting on their own or through government reforestation program.

The number of respondents for each of the different categories is shown in Table 4.

Roles/functions of the market participants

All market participants perform vital roles (Table 5). Efficient performance of their respective roles ensures a smooth movement of resources and products consistent with minimum cost and according to consumer's desires.

Among the gatherers, only the cutters and head cutters go up to the cutting area while the contractor or his agent may or may not go for harvest but is assigned to distribute the food supplies to the cutters. Although the gatherers' associations function like a non-tribal trader, these are headed by tribal leaders who hold the permit. They may be engaged in various activities like forest products gathering and marketing and cottage industries, or be a part of the government's community-based livelihood programs.

The two types of raw material traders — the town/village and the provincial traders — differ in their size of operation. The town/village trader holds only one concession, handles a smaller volume, and sells within the villages and to the provincial traders. The provincial trader has more concessions, handles a larger volume, and sells directly to semi-processors/retailers and large manufacturers.

Table 4: Number of survey respondents by type and area

Respondent type	Luzon	Visayas	Mindanao	Philippines
Gatherers	36	--	20	56
Gatherers' association	4	--	2	6
Plantation owners	-		2	2
Traders:				
Raw Materials	13	4	2	19
Finished products	3	--	2	5
Manufacturers:				
Transporters	3		1	4
Furniture	26	4	6	36
Handicraft	9	-	-	9
Workers:				
In-house	23	10	9	42
Subcontractors	8	3		11
Total	125	21	44	190

While furniture manufacturers differ mainly by size of capitalization and operation, the handicrafts manufacturers differ by type of market. Indirect exporters are manufacturers who produce unfinished products for sale to direct exporters who add finishing touches to the products directly for export. Finished product traders also differ by size of operation. Furniture/handicrafts retailers sell simple and unfinished products in small volumes within the local market, while the exporters sell large volumes of finished products to foreign buyers with huge financing and subcontracting jobs. The two types of workers (in-house and subcontractors) do not differ much except that in house/factory workers receive regular salary and may receive additional benefits from the manufacturing firm, while the subcontractors do not receive additional incentives because they are paid on a contractual (per output) basis.

The two kinds of transporters of rattan differ mainly by mode of transportation and volume handled. Truckers carry a smaller volume with maximum load of 30 000 poles/shipment on lo-wheeler truck or forwarder, while shippers carry a larger volume of 20 000 poles/container van with 2-3 container vans/shipment on board.

The plantation owner/contractor may be a private tree plantation company, or a village farmer or individual contracted by the government through its reforestation program. The former establishes and manages large-scale (1 000-5 ha) rattan plantations in contract with manufacturers or exporters, while the village farmer-contractor plants rattan and other forest tree species on small scale (5-100 ha) with his family or an organized group. In both cases, rattan plantations are usually established in forest lands leased from the government.

Table 5: Roles of rattan market participants

Market participant	Role
Gatherer	
Cutter	Gathers poles: 1st stage scraping; sells to association or manufacturer within the village.
Head cutter	Leads a group of cutters; may be assigned to get food supply for 1-2 week cutting period; may or may not receive sales commission.
Contractor	In-charge of food supplies distribution to cutters representing advance payment obtained from licensee or his agent; may or may not be a cutter.
Gatherers' association	Holds the permit and serves as the link between the gatherers and buyer, and thus may also be considered a trader.
Raw material trader	
Town/village	Buys poles/splits from gatherers within a village and sells to provincial traders; gives financing to gatherers in form of food supplies; operates as single proprietor.
Provincial/city	Holds a permit and buys poles/splits from gatherers covering several concession areas; has contractor/agent to manage provision of food supply/ financing to gatherers; has large stockyards based in provinces/cities.
Manufacturer	
Furniture	
Large	Produces furniture for export market but also to high-end local market in limited volume; employs in-house workers and subcontractors; may hold a concession.
Medium	Produces lower quality furniture of customers within locality or neighbouring province/city; financing from savings or banks; at times engaged in limited exporting.
Small	Produces furniture in his small shop only for the locality; employs 4-5 workers.
Handicrafts	
Direct exporter	Produces finished (decorated/varnished/painted) handicrafts; employs and provides financing to in-house workers and subcontractors for labour and materials used.
Indirect exporter	Produces still unfinished products (unpainted, undecorated, lightly varnished) for exporters; provides financing to workers; may also produce for local buyers.
Worker	
In-house	Works inside the manufacturer's factory; paid on daily basis; may receive incentive benefits from employer.
Subcontractor	Works in their respective houses; usually in groups; paid on out put basis; don't receive incentive benefits from employer.
Finished product trader	
Retailer	Buys rattan products from small village-based manufacturers and sells retail in his small shop located along highways.
Manufacturer-retailer	Produces rattan products for sale in his retail store; may sell in big shopping malls.
Exporter	Buys unfinished handicrafts from provincial manufacturers for final finishing before exporting.
Transporter	
shipper	Transports poles/splits in container vans from stockyards to demand areas; requires that all DENR requirements be completed.
Trucker	Transports poles/splits on forwarder or IO-wheeler trucks which may or may not be owned by the trader; paid on per load basis.
Plantation owner/ contractor	Undertakes rattan planting either on won initiative (in contract with a buyer) or under the government's reforestation program.

The Products

Types

Rattan raw materials consist of (a) poles and splits that have undergone first stage processing (scraping, drying, splitting) and (b) wicker and core that have passed second stage processing. Both types are of different diameter sizes and produced from different rattan species. Finished products are mainly furniture and handicraft items of numerous types, designs, dimensions, qualities, finish and other attributes.

Poles gathered from different cutting areas belong to Tumalim, Limuran, Calape, Ditaan, Palasan and/or Bugtong species, which are mostly used for furniture framing because of their large diameter ranging from 3/8 to 1% inches (Table 6). These are sold by the gatherers to the traders partially scraped or unscraped, depending on the end-uses. Aside from the large-diameter poles, traders (especially in Palawan and Mindanao) also sell small-diameter rattan — Panlis and Seca species of 1/4 to 3/8 inch in size — and wicker-like species called Arurog or Siksik, used mainly for furniture decoration and weaving.

Rattan splits vary by size. The "bakirin" (about 1/2 inch width) is the largest kind, the "balaba"(1/4 inch width) the second largest, and the "sulihiya/laylay" (1/8 inch width) the thinnest kind. Split rattan is used mainly for basket making, and for binding furniture edges and joints. Splitting rattan is done only upon trader's or manufacturer's request. The largest volume is sold to basket makers.

Second-stage processed rattan, like the wicker or round/square core, is sold only by manufacturers or semi-processor/retailers who own multiple sizing or coring machines. Round or square- cores are the by-products obtained from the centre of the pole upon processing using a multiple sizer while the wicker is a small-diameter, noodle-shaped by-product from the outside of the inner core. These products are used mainly in furniture making and handicraft weaving.

Furniture items vary in design, type of market and purpose of use. Those intended for the local market are lower-priced and have simpler designs with less finishing touches, while export items are higher-priced and have more sophisticated design and finish. Some, intended for the high-end local market, are also of premium quality and sold at comparatively higher prices. Handicraft items produced in large volumes by large-scale manufacturers/ exporters are higher-priced, have better quality, good design and finish, and are mainly for export. Those produced by local manufacturers and sold to retailers are lower-priced, simple in design and finish, of low quality, and sold in small quantities.

Manufacturers : Table 6: Prices (pesos/piece) of rattan materials by type, diameter size and market level (1995)

Type/Diameter	Gatherer[a]	Association	Trader[c]
Poles (9-10 ft)			
l-1/4. inches	6.83 (2.25)[d]	20.50 (4.50)[d]	29.25
l-1/8 inches	6.88 (2.25)	18.25 (3.75)	23.20
1 inch	5.04 (2.25)	12.45 (3.75)	17.83
7/8 inch	4.29 (2.25)	8.33 (3.50)	12.20
3/4 inch	4.04 (2.25)	8.50 (2.95)	11.34
5/8 inch	4.42 (2.25)	6.67 (2.90)	8.34
l/2 inch	1.92 (2.25)	5.17 (2.45)	5.72
7/16 inch	1.83 (2.25)	3.50 (1.60)	4.40
3/8 inch	2.00 (2.25)	2.75 (1.20)	3.68
Round core			
l/2 inch	—	—	6.50
3/8 inch	—	—	4.00
l/4 inch	—	—	2.10
Wicker			
6mm	—	—	1.50
5m.m	—	—	1.20
4rnm	—	—	0.60
Class A	—	—	l .60
Class B	—	—	1.60
Class C	—	—	1.00
3.5 mm	—	—	0.75
3.0 mm	—	—	0.58

Notes:

a = Average for 4 locations (includes tumalim, limuran, calape, ditaan, palasan and bugtong species); b = Average for 4 locations; c = Average for 6 locations for poles, for Cebu only for round core and wicker except 6 mm, 5 mm and 3 mm wicker which are for Angeles City; d = Figures in parentheses are for 6 ft poles sold by Apayao gatherers only.

Geographical Product Flow

The general market channels for rattan are as follows:

For poles/splits:

Gatherer -> Permittee--> Trader -> Semi-processor/retailer -> Manufacturer

For furniture/handicrafts:

Manufacturer -> Trader —> Local customer/Importer

In Conner and Kabugao, Apayao, poles and splits are sold by the gatherer to the association or to local furniture manufacturers. Poles are cut to 6 or 10 ft in length, depending on the traders' orders. The association then sells to Pampanga semi-processor/retailers (for the

Pangasinan and Nueva Vizcaya traders) or to Manila traders (for the Valenzucla traders). Pampanga semi-processor/retailers sell raw poles or semi-processed products (wicker or round core) to Pampanga manufacturers, while Manila traders sell to manufacturers in Manila and nearby areas (Laguna, Bulacan or Quezon). Finished products (furniture/handicrafts) are then sold locally or exported.

In Baggao, Cagayan, the gatherers (members or non-members) directly sell their poles/splits to the association, which sells these together with square cores to the local market (Baggao and Tuguegarao) and ships to a Manila trader. The flow is shorter because the association directly sells to Manila and delivers these using a forwarder. From the Manila trader, the flow of raw materials and finished products is similar to the Apayao-Manila market flow.

From Palawan, the flow of raw materials takes a longer route. Village gatherers sell their poles either to the federation (NATRIPAL) or to private traders (permittees). Both these traders sell locally and to Manila. However, private traders sell to city traders while the federation sells directly to the manufacturers, which include a furniture manufacturer in Taytay, Rizal (near Metro Manila) and a handicrafts manufacturer in Tayabas, Quezon. From Manila traders, the raw materials are sold to Manila and nearby provincial manufacturers. Finished products from these manufacturers are then sold locally or exported. On the other hand, the Taytay manufacturer-buyer of NATRIPAL sells locally and the Tayabas handicrafts manufacturer sell to Manila for direct export.

Tayabas handicrafts manufacturers get their rattan supply mainly from Palanan, Isabela. From the gatherers, the raw materials are bought by the traders in Mauban, Quezon who sell these to a trader in Tayabas, Quezon. From this single trader, the handicrafts manufacturers in the town buy their poles and splits for making baskets for low or high-end markets. These finished products are then sold to Manila exporters who add finishings and directly export to foreign markets.

In San Fernando, Bukidnon, the member-gatherers sell their raw materials directly to the association while non-members sell to local furniture manufacturers in the town. These manufacturers may also buy from the association. During the survey period, a trader based in Cagayan de Oro City was buying the raw materials from the association and using the permit to transport these. From Cagayan de Oro, the trader ships rattan to Cebu or Manila. From Cebu, poles of diameter sizes 7/8, 5/8 and l/2 inch are bought in large volumes to be processed into wicker/round core by semi-processor/retailers. Cebu manufacturers who own sizing machines buy directly from Cebu traders; others who do not own such machinery buy from the semi-processors. Finished products made by Cebu manufacturers are mainly for export. Manila-bound raw materials are, on the other hand, bought by Angeles semi-processors for sale to Pampanga manufacturers.

Production-to-Consumption Flow

Raw materials are mostly sourced from naturally growing rattan in public forests. Permit/licence to harvest/gather rattan in a given concession area is secured form the government by private individuals/corporations and indigenous communities. Management of rattan

resources is poor since replanting (a requirement for licence renewal) is usually not done. Illegal harvesting frequently occurs, and the government's monitoring system is ineffective. Enrichment planting and establishment of new plantations are very limited. On the other hand, consumption of finished products ranges from household use to intensive high-quality exports. All market participants are engaged with raw material and finished product transformation, except the city and provincial traders who just buy and sell raw materials without performing activities other than storage, transport and sale. Fig. 2 (seepage 7 gives a comprehensive account of the market flow of raw materials and finished products from production point to consumption point, indicating the extensive nature of raw material production and intensiveness of finished product manufacturing and consumption.

Gatherers may do some first-stage processing (scraping, drying, storage and splitting) as independent groups or as part of the trader's post-gathering activities. Associations or town traders also perform first-stage processing and second-stage processing such as splitting, sizing, core and wicker making, and very minimal pole preservation/chemical treatment before selling to provincial city traders. Second stage processing is mostly done by processors who buy raw materials from provincial/city traders, process poles and sell these to city manufacturers or manufacturer exporters. Chemical treatment is also performed by the processors.

Gatherers within the locality of the concession area may sell raw materials directly to manufacturers in the area, who in turn sell to local consumers who are mostly households. Some rattan is also used by gatherers as tying materials and to make baskets for household use. Products sold in the locality are of low quality. Manufacturers may also sell semi-finished products to town/city finished product traders, who add finishing touches (varnish, upholstery) for sale in towns or small cities. Associations or town traders also sell raw materials to local manufacturers near the concession area or to town and small cities. Town or city-based small manufacturers can be subcontractors of large finished product exporters based in big cities who serve the low-end export market.

City-based manufacturers buy raw materials from provincial or city traders and semi-processed raw materials from processors. Although their products are sold within the city or near urban areas, these are of high quality and may be exported. Large diameter poles and semi-processed raw materials (wicker, core, etc.) from processors are generally sold to manufacturer-exporters and exporters who produce premium quality finished products for the high-end export market.

Value-addition and product value distribution

Quality improvement through grading and access to higher markets add value to rattan Table 6 and Fig. 6 show higher prices for rattan poles (a) of larger diameter sizes and (b) those traded in higher level markets. Price differentials between large (> 2 cm) and small (< 2 cm) sizes widen with market level (Table 7). Gatherers' price averaged 25% and 36% of trader's price for large and small poles, respectively. Within each size category, price differentials are larger for large than for small poles. Prices of core and wicker, which are traded only at the processor's level, also vary by size and class. Split rattan shows lesser price variations across sizes and market levels, with gatherer's price being about 86% of trader's price.

Table 7: Prices (pesos/piece) of rattan materials by size and market level (1995)

Type/Diameter	Gatherer	Association	Provincial trader	City trader
Poles (9-l Oft)				
3/4 to l-l /4 inch (>2cm)	5.37	13.52	12.82*	21.76
3/8 to 5/8 inch (<2cm)	2.52	5.10	5.39	7.00
Price differential	2.82	8.42	7.50	14.76
Splits				
Bakirin (l/2 inch)	0.55	—	—	0.55
Balaba (l/4 inch)	0.32	0.47	0.50	0.43
Sulihiy/Laylay (l/8 inch)	0.28	—	0.44	0.45
Average	0.38	0.47	0.47	0.44

Note : * = average for only two Locations .

Value- addition also occurs with quality improvement and creation of a wide variety of designs for finished products. Different designs create price differentials with higher prices for those channelled to the export market .

Table 8: Distribution of value of locally sold rattan furniture among market participants (1995)

Market	Conner		Baggao		Puerto Princesa		San Fernando	
participant	pesos	%	pesos	%	pesos	%	pesos	%
Product value	2500[a]	100	2500[b]	100	3500'	100	11 000[d]	100
Manufacturer cost	1165	47	1048	42	1842	53	4 995	45
Profit'	495	20	1244	50	184	5	3 493	32
Raw material trader								
cost	—	—	—	—	223	6	—	—
Profit[e]	—	—	—	—	526	15	—	—
Association								
cost	—	—	87	3	—	—	—	—
Profit"	—	—	63	3	—	—	—	—
Gatherer'	840	33	58	2	725	21	2 512	23

Notes :

a = Sala set-consisting of 1 sofa, .2 side chairs and 1 centre table made of poles and splits.

b = Coffee table set-consisting of 1 centre table and 2 chairs – made of wicker, roundcore, splits and narra wood.

c = Sala set -consisting of 1 sofa 2 side chairs and 1 centre table – made of poles and splits

d = Sala set – consisting of 1 sofa, 2 side chairs and 1 centre table – made of poles, round core, splits and arurog

e = Returns to operator's labour and management.

f = Value of rattan materials in raw form inputted to specified finished products.

Considering major market channels, the distribution of the value of finished products at the point of last sale (local retailer or exporter) was determined by accounting for costs incurred and profit obtained by the different market participants. Results show (Tables 8-10) that gatherers' share of product value averaged only 5-21%; the rest went to traders, with bulk captured by manufacturer-exporter, about 63.87%; the rest went to traders (Fig. 7). The gatherer's share represents the rattan material input in the product valued at the point of first sale. The shares of other market participants refer to both profit and cost incurred in performing their respective services. A higher cost (and added value) generally implies more inputs, as in the case of manufacturer exporter. At the traders level, it may mean high transport related cost. In general, the cost component of marketing margin for the market participants exceeds the profit component.

Table 9: Distribution of value of exported rattan handicrafts among market participants (1995)

Market participant	Tavabas		Manila		Los Banos	
	Pesos	%	Pesos	%	?esos	%
Product value	51.00[a]	100	76.50[b]	100	390.00[C]	100
Exporter						
cost					—	—
Profit!	26.62	52	6.98	9	—	—
Manufacturer						
cost	8.45	17	21.62	29	236.65	60
Profit[d]	3.17	6	4.88	6	49.35	13
Raw material trader 1						
cost	3.84	7	7.80	10	41.69	11
Profit[d]	0.44	1	0.70	1	4.93	1
Raw material trader2						
cost	0.35	1	—	—	—	—
Profit[d]	0.55	1	—	—	—	—
Gatherer"	3.20	6	10.00	13	57.38	15

Notes:

a = Small basket, made of splits and poles, sold to Manila exporter.

b = Medium-sized basket, made of splits and poles, sold to Manila exporter.

C= Wine holder, made of wicker, poles and wrought iron, exported directly by manufacturer.

d = Return to operator's labour and management.

e = Value of raw materials inputted to specified finished product.

Table 10: Distribution of value of locally sold and exported ratan furniture among market participants (1995)

Market	Angeles City		Angeles City		Los Banos		Cebu City	
Participant	Pesos	%	Pesos	%	Pesos	%	Pesos	%
Product value	22 000[a]	100	18 750[b]	100	5 500[c]	100	13 000[d]	100
Manufacturer cost	9 680	44	8 841	47	3 250	59	9 075	70
Profit[e]	9 569	43	7 158	38	1 500	27	2 600	20
Raw material trader 1 cost	111	1	111	1	228	4	533	4
Profit[e]	74	g	74	g	102	2	92	g
Raw material trader 2 cost	153	1	46	g	--	--	--	--
Profit[e]	46	g	153	1	--	--	--	--
Association cost	550	2	550	3	321	6	500[h]	4
Profit[e]	410	2	410	2	24	g		
Gatherer[f]	1 407	6	1 407	7	75	1	200	1

Notes:

a = Sala set consisting of 1 sofa, 2 side chairs and 1 centre table, and made of wicker and poles sold to local buyer.

b = Sala set made of wicker and poles sold to export market.

c = Sala set (with cushion) made of poles sold to local buyer.

d = Dining room set (with cushion) made of poles sold to export market.

e = Return to operator's labour and management.

f = Value of rattan materials inputted to specified finished product.

g = Less than one percent.

h = Marketing margin, breakdown into cost and profit could not be accounted for.

Interrelationships Among Market Participants

Market participants should be effectively linked such that there is matching of demand requirements and available supplies in terms of:

1. Volume, quality and delivery of raw materials and finished products;
2. Adequacy of transport facilities for efficient product flow; and
3. Availability of technical assistance to ensure production of desired products.

Volume, quality and delivery requirements

Gatherers follow a specific schedule in rattan gathering. Those who work for associations and private permittees follow their employers' shipment schedule. The frequency of gathering may vary from 8 times/year to weekly operations. Among association members in Cagayan and Palawan, the majority (48%) go to the cutting area 2-3 times/month (not on a weekly or

regular basis). This is because their trips depend on the availability of food supplies from the association. Moreover, a cutting operation may take more than one week because of the travel time which may be l-3 days on foot. A large number of the gatherers, particularly in Bukidnon, cut very seldom (less than 12 times/year). This is because they depend on the availability of funds from the association's buyer which do not come regularly. The Bukidnon association greatly depends on its trader-buyer for financing because it does not have its own capital. Only some gatherers cut rattan on a weekly basis. These are those in Cagayan and Apayao who travel short distances and carry only small volumes of poles from the cutting area.

Among non-members, the majority (89%) gather poles 2-3 times/month. These are those in Palawan and Bukidnon who are financed by their private trader-buyers. Amoung all the areas, only two non-member gatherers in Baggao, Cagayan do not cut regularly. These are spot gatherers who just cut rattan whenever they need cash. They get financing from the association and sell their raw materitils only to the association.

The gatherers' trip to the cutting areas also depends on the season of the year (whether summer or rainy). Trips during summer are more often than during .the rainy season because of ease of going up to the cutting area when the tracks/paths are not slippery. This is also reflected in the way the associations and private traders schedule their shipments. Another factor for such schedules is the availability of funds from their financiers (the provincial or city traders). Among the associations, the licensee who shipped rattan with the least frequency was the Bukidnon association with 8 times/year, owing to paucity of funds from its buyer-trader. Among the private traders, the Tuguegarao licensee got approval to cut late during the year and thus was able to cut only once. All other private traders ship their poles 2-3 times/month during summer and once a month during the rainy season.

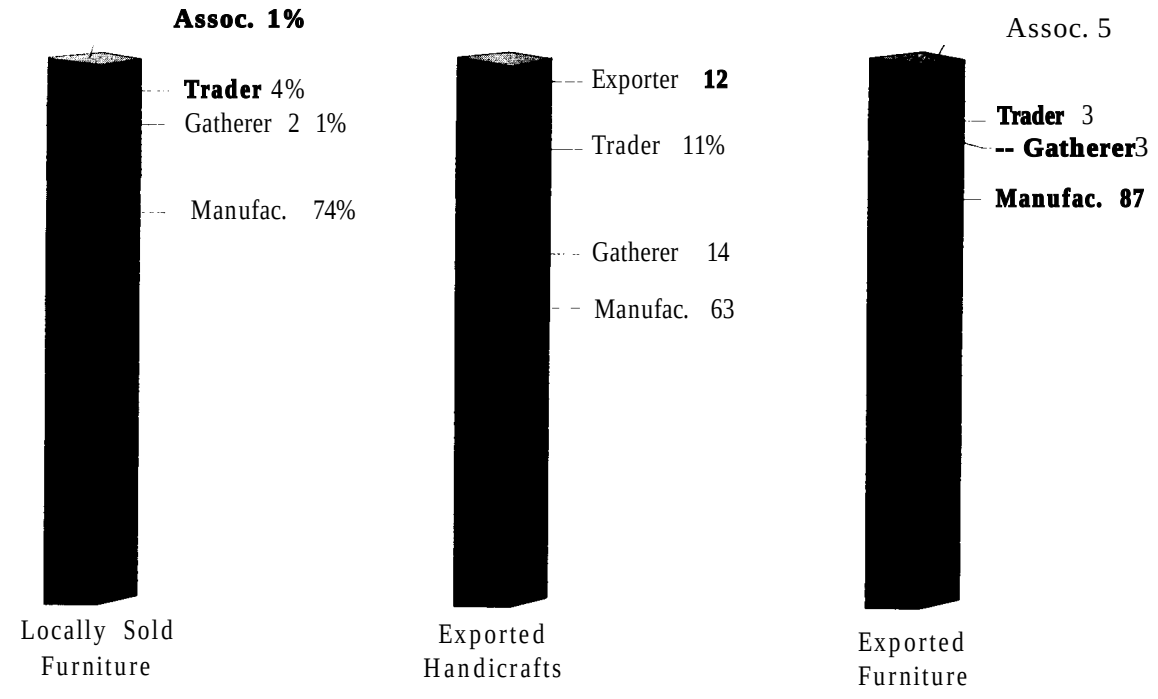

Fig. 7: Distribution of value of rattan products among market participants

Semi-processors/retailers (SP/Rs) rely heavily on the availability of supply and frequency of delivery to buy their supplies. In Angeles City, the big semi-processor/retailer was able to procure poles from its sources in Northern Luzon, Visayas and Mindanao during summer for 7 months because it needed to procure from as many sources as it could owing to a high demand for raw material. This SP/R is the supplier of the AWECA company which provides for three large manufacturing firms in furniture and handicraft. On the other hand, it was able to procure poles twice/month from November-April because of less supply from these source during these months. The Tayabas trader procures splits and poles based on the availability of supply from Isabela which is greater during summer. In Cebu The SP/Rs can procure any amount of poles from the private trader at any time. They are not affected by the season of the year (summer of rainy) since they rely more on the orders from manufacturers and the availability of supplies from the traders.

The frequency of procuring raw materials for furniture manufacturers (all firm sizes) depends on the customer's orders, season of the year and the type of market. Peak season usually falls on the dry season (December-May) while lean season is during rainy months (June-November). Small and mehium-scale firms sell the highest volume of furniture during summer (thus the high raw material procurement), and less during the rainy season (thus the low raw material procurement). The summer season is usually the time when tourists and most institutional buyers buy furniture. Only the Bukidnon manufacturers do not follow the season of the year in raw material procurement. This is because they are supplied weekly or 3 times/month by Manobo gatherers who need the money immediately. Large-scale manufacturing and exporting firms (furniture manufacturers and handicraft direct exporters) do not follow the season of the year. Their raw material procurement is based on orders from foreign buyers and is done regularly. Generally, the peak season of finished product delivery falls in December when foreign buyers need to have received all the products, while the lean season is usually in January when it is time for inventory.

Indirect exporters in Tayabas, Quezon, procure raw materials and dispose of their finished products depending on their buyer-exporter's orders. Similar to direct exporters, they also do not follow seasons. Small-scale retailers, on the other hand, dispose of their products depending on the demand for the items in the local market. In Cagayan de Oro City, it is only in December when the retailer can sell the highest. In other months of the year, the sale is very low. Products sold by these small retailers are of very simple/ordinary design; hence, the low demand for these even in the local market. Moreover, plastic furniture also competes with rattan furniture in the city.

Tribal associations buy their raw material from the gatherers within the areas of concession or nearby towns. Poles are usually delivered by these gatherers scraped or unscraped, bundled, sorted and sun-dried. No transport vehicles are used; they just bring the poles by foot, raft or carabao (water buffalo). There are also no drying facilities. The poles are sun-dired, or smoked during the rainy season. The gatherers usually store the poles in their houses or the trader's stockyard. They are also paid in advance through food supplies enough for l-2 Week trips. The associations' market outlets are mostly raw material traders and seldom finished product manufacturers. The poles and splits may be delivered by the associations to their buyers or are picked up by the buyers using trucks or shipped by sea. These traders usually provide cash advance to the associations for each shipment amounting

from Pl0 000 to 30 000 per shipment. Associations and trader-buyers have established good business relations and maintain business contacts. Otherwise, associations sell to spot buyers.

Similarly, permit holders and users buy their poles from the gatherers within their concession or from other traders or associations. Their market operations are similar with the associations except-that these traders may sell directly to semi-processor / retailers (SP/Rs) or manufacturers. They can also pay their suppliers in cash and are paid in cash by their. buyers. The main criterion for choosing buyers is the good business relations they have established. SP/Rs, on the other hand, get their raw materials from provincial traders who are their regular suppliers. The supplies are bought scraped or unscraped, dried and already sorted. Splits are bundled by 100 pieces (sukong). Raw materials are delivered by the supplier or picked up by the SP/R. Payment is by cash or post-dated cheque. Poles and processed products of SP/Rs, such as wicker and inner core, are bought by local manufacturers or exporters within the city / town or nearby provinces. These are picked up by the buyers at their own expense. The traders are usually issued a post-dated cheque by their buyers within 15-30 days, or a maximum of 100 days.

Small furniture manufacturers buy their raw materials from associations or private permittees in the town or province most accessible to them. Their procured volume is much lower than that of medium and large firms. They mostly pick up these materials from their suppliers using hired jeepney or tricycle and pay them in cash. Their main outlets are the local market and nearby provinces. Their customers usually pick up the furniture items from the manufacturer or the manufacturer delivers the products to the buyers using hired jeepney or truck. The transport cost ranges from *P30-100* per trip. Payment is usually by cash. A down payment of 35-50% of the item's selling price is first made and the rest is paid on delivery of the product. Transport and other marketing costs are met by the manufacturer. All buyers are spot customers. Medium and large-scale furniture manufacturers procure their raw materials from traders from Northern Luzon, Manila, Visayas or Mindanao who are their regular suppliers. Poles and splits may be delivered by the supplier or picked up by the manufacturer, depending on the agreement. The market outlets of these manufacturers are the local market, nearby provinces, or the export market to which they have been selling their product for *5-20* years. Furniture items sold locally are mostly picked up by the buyers, the transport costs of which are paid by them, while the exported ones are shipped to the foreign market FOB Manila. Local customers pay in cash or post-dated cheque to the manufacturers while foreign buyers pay by letters of credit.

Indirect and direct exporters / manufacturers of handicrafts buy their raw materials also from traders who sell splits, or from SP/Rs who sell wicker and inner core. These are picked up by them or delivered by their suppliers using jeep. The manufacturers usually pay their suppliers in cash or issue post-dated cheque (payable in 7-30 days). Indirect exporters deliver their products on jeepney to Manila exporters, while direct exporters ship their products (FOB Manila) to foreign destinations. Trucking and brokerage costs are paid by the manufacturer-exporter. Indirect exporters are given post-dated cheques payable after 15-30 days while direct exporters are paid through letter of credit. The manufacturers' choice of market outlets is influenced by the good business relation they maintain with their buyers.

Among the finished product traders, the furniture and handicraft retailers procure lesser volume of products compared with the furniture / handicraft exporters. The furniture retailer in Cagayan de Oro City gets its furniture items from local manufacturers in Bukidnon and Butuan City which are its regular suppliers. The products are delivered by jeepney and the retailer pays in cash. After providing the finishing, the retailer sells the products locally. Customers, who are mostly spot buyers, pay in cash upon pick-up. The handicrafts retailer buys products from local manufacturers or gets them from self-owned manufacturing factory. Similarly, the products are delivered by jeep and payment is in cash. The sales outlets are the local market and nearby towns. Sales are usually low. Buyers who are walk-in customers, pick up the products and pay for the transport costs. Handicraft exporters, on the other hand, buy the finished products from provincial manufacturers in large volumes. The suppliers deliver these by jeep or truck and are issued post-dated cheque payable after 7 days. The exporters' market outlets are foreign countries like USA and UK, to which the exporters ship their finished handicraft items FOB Manila. Similar to furniture and handicrafts manufacturer-exporters, they are paid through letters of credit and only transport costs within the country (such as trucking and other brokerage fees) are paid by them. These foreign buyers have also been their regular customer for many years.

Generally, buyers reported that their requirements for raw materials are met in terms of volume, quality, timing and location of delivery. Gatherers are able to cut enough volumes as long as they receive adequate financing for their cutting operations; otherwise cutting is postponed even if there are orders from traders. There are reports, however, that water-damaged, immature poles with spots are delivered by gatherers to the association. This may be due to the lack of storage facilities at the gatherer's level and lack of knowledge of the proper harvesting techniques. Gatherers tend to cut any rattan vine they see in the forest not knowing whether these are mature or not. City traders reported on seller's malpractice of inserting small-diameter poles among large ones. The problems get passed on the manufacturers who complain of poor quality poles delivered to them. Some handicrafts makers noted that there are times when their local source cannot supply the required volume and they have to source from Manila traders, thus incurring additional cost. Handicrafts exporters that their shipments are some times delayed because of rejects that must be returned to manufacturers for re-make.

Transport requirements of traders

Rattan transport is affected by government policy and availability of transport facilities. DA0 39 Series of 1993 requires that forest charges (FCs) based on a certificate of minor forest product origin (CMFPO) be paid by the permit holder before transport documents (auxiliary invoice and certificate of transport) are issued. FCs are paid upon inspection of the shipment by the community Environment and Natural Resources Officer (CENRO). The transport documents are subject to inspection at various DENR and police check-points until the poles reach the buyer.

Technically, there should be no problem in rattan transport as long as proper documents can be presented to check-point personnel. Traders, however, complain that with or without documents, bribes (known as "SOPs") must be paid; otherwise, shipment will be delayed,

adversely affecting the operations of other market participants. Another serious problem is the underreporting of shipment to avoid full payment of forest charges. The legal fees are:

- unsplit rattan
  P0.85/lm for >2 cm in diameter
  P0.65/lm for <2 cm (for palasan, calape and kurakling species)
  P.080/lm and P0.50/lm, respectively, for tumalim and ditaan species
- split rattan - P3.50/kg

Pen-nit holders argue that they would rather pay bribes than pay the full charges; otherwise they stand to lose from their trading operations, considering all the other costs incurred.

Traders realize about P46.17 net return per 100 ml of rattan shipped or P30 232 per shipment, on average. Forest charges, which are based on misdeclared shipment (only about one-third of actual shipment) shipment, comprise about 14% of total costs while bribes, which make under-reporting possible, is about 8% (Table 11). The full charges, if paid, would amount to P64.63/100 lm. Without the bribes, net return would still be positive at ~36.58/100 Im or P25,913 per average shipment of 65 476 lm. Transport cost comprises a larger portion of total cost (19%). If it can be lowered, then higher profit rates are possible. Another illegal practice involves multiple use of transport documents which means that profits are higher since no forest charges are paid (although bribes are still paid) in second or third shipments.

As can be seen from Table 12, transport facilities are generally adequate for operations in cities and town where road conditions are satisfactory. However, in cutting areas and villages, transport is difficult, particularly during rainy season. Sometimes, gatherers have to cover up to 25 km or more by foot, raft or with the help of carabaos to reach the cutting area. Based on the survey, a majority (55%) of the gatherers travel from 5-14 km (average of 9-10 km) from the cutting area. Most of these are people from Palawan and Bukidnon who first have to walk on foot and then transport their poles by raft. Those who travel very far (Baggao member-gatherers travel more than 25 km), however, can wait for the association's truck to pick up their poles from a certain point which is about 10 km from the cutting site. The truck then brings the poles to the trader's stockyard.

The method of transporting poles may be manual or animal-driven. From the camp site in the cutting area, the gatherers carry the poles on shoulder to the river bank for onward transport by water or raft. Most gatherers (64%) do not use any vehicle or animals to transport their poles. Gatherers in Bukidnon are the ones that use carabao most; they pay/hire carabao at the rate of PI/pole to be transported from the camp site to the loading point.

All these generally indicate the inadequacy of transport facilities to and from the cutting area. In some cases, finished products are not properly protected from rain or sun and hence, could be damaged during transport. Shipping facilities are adequate and do not presents any problem as long as fees are paid and transport documents are complete. Unofficial payments to check-point personnel is commonly reported. At times, even transport of finished products is charged some illegal fees.

Table 11: Costs and return of transporting rattan from source to the buyer (1995)

Item	Case 1[a]	Case2[b]	Case3[c]	Case4[d]	Case5[e]	Case6[f]	Case7[g]	All
Shipment volume (linear metre,Im)	60 000	59 850	60 000	39 000	49 500	100 000	90 000	65 479
Material mix (%)								
>2Cm	25	12	33	20	30	30	40	28.50
<2Cm	75	88	67	80	70	70	60	71.50
Sale price[h]								
> 2 Cm	6.04	4.78	4.33	5.42	3.83	8.27	6.00	5.92
< 2 Cm	1.50	2.31	3.33	2.00	0.72	2.25	1.33	1.95
Revenue[1]	263.5	282.88	366 .00	268.40	165.30	405.60	378.91	308.14
costs[1]								
Forest charge	23.33	18.66	50.25	23.85	10.00	59.00	67.00	36.01
Trucking/ shipping	26.67	83.33	68.39	65.39	26.26	25.00	46.67	48.82
Administration	8.00	8.35	—	—	—	—	—	
Procedural[i]	33.75	13.37	10.00	8.97	16.16	60.00	11.89	22.02
Labour	4.50	16.67	48.80	34.61	9.09	3.00	21.67	19.35
Others[k]	5.00	—	50.00	—	—	11.66		9.52
Poles	148.17	83.33	88.50	93.33	94.10	198.10	158.89	123.49
Total	249.42	223.71	315.94	226.15	155.61	356.76	306.12	261.97
Profit'	14.08	59.17	50.06	42.25	9.96	48.84	72.79	46.17

Notes:

a = Gatherers' association from Conner, Apayao to Pangasinan trader.
b = Gatherers' association from Baggao, Cagayan to Manila trader.
c = Cagayan de Oro-based permit user from San Fernando, Bukidnon to Manila trader.
d = Gatherers' association from Puerto Princesa, Palawan to Manila manufacturer.
e = Puerto Princesa-based permit holder (trader) to Manila manufacturer.
f = Cebu-based permit holder (trader) from Mindanao to Cebu.
g = Cagayan de Oro-based permit holder from Lanao del Sur to Pampanga.
h = Pesos per linear metre.
i= Actual forest charges paid based on under-declared shipment.
j= Unofficial payments made to government personnel at various check points to facilitate transport called "grease money" or "standard operating procedures".
k = Municipal fees and royalties paid to permit holders.
1= Pesos per 100 linear metres.

Technological requirements and availability of technical assistance

Gatherers employ the traditional method of harvesting rattan using a bolo(machete). Primary processing at the campsite near the cutting area is limited to scraping and drying, after which the poles are directly hauled to the first buyer who may be the association, private permit holder or his agent, or any trader. Generally, the gatherers perform sun-drying (or smoking during season), splitting and coring (for few associations only), sorting, bundling

and loading of poles to truck. Sun-drying/smoking and scraping are done at the campsite and at the stockyard. These may be done by individual or group of gatherers. Drying is carried out for 2-5 days in summer or 6-7 days during rainy season. The technique is similar in all areas: the poles are allowed to stand in a wigwam form or reclined on horizontal pieces of bamboo. Smoking entails the burning of firewood. The poles are placed on slats of wood over the fire and the smoke is used to dry these.

Table 12: Transport availability and related problems of market participants

Market participant	Availability/adequacy	Problem
Gatherer, association, trader, permit holder in delivering raw materials	Transport not available from cutting area to village, traders may hire carabao to transport poles; trucks/shipping lines from village/port to trader's stockyard available; road condition in some areas are unsatisfactory, especially during rainy season.	Transport is time-consuming and difficult for gatherers; traders pay bribes at check-points; inspection causes delay; flooding/ mudflows make transport difficult; high cost.
Manufacturer in sourcing raw materials	Trucks, jeep, tricycles for picking up raw materials from source adequate, except for village-based manufacturers who experience delays when gatherers cannot immediately transport rattan.	Delayed delivery by gatherers to village manufacturers; high cost of maintaining vehicles.
Manufacturer in delivery finished products	Hired jeepneys/tricycles available to small operators but products exposed to sun and rain; shipping facilities available to exporters as long as fees are paid, export regulations followed and documents are complete.	Damages to furniture exposed to sun and rain without proper packaging; collection of "forest charges"/bribes even for finished products.

Scraping is done within the first day. With the help of women and children in the community, who are paid PO.250.50 per pole, the gatherers can finish scraping 500-600 poles in one day. The practice is crude and the same in all areas: a *bole* is used to split the outer and inner skins and leave the inner core of the pole. Splitting and coring are seldom done at the association's or trader's level. The association interviewed employs workers for these activities, paying them PO.40 per pole for splitting and PO.30 per piece for coring. At the stockyard, before the poles are delivered and shipped to the buyers, stockyard workers bundle and sort the poles with the help of some gatherers. There are one or two scalers/ classifiers who sort the poles, while other bundle, count and load the poles into the truck.

As indicated above, gatherers, associations and raw material traders still lack advanced techniques for harvesting, drying, preservation and processing prior to shipment to add value to the poles. Their knowledge and activities are limited to gathering, classifying and carrying the poles using crude methods and equipment.

On the other hand, large traders/processors and manufacturer-exporters employ preservation methods and possess complete line of facilities and equipment, from preparation of raw materials to assembly and quality control (Table 13). Technical assistance is needed by gatherers and small manufacturers whose access is limited by lack of capital to purchase required equipment, lack of awareness on and positive attitude towards product improvement, and inability to link with institutions involved in product R&D like FPRDI, CFIP and DTI.

Table 13: Availability and adequacy of technical assistance to market participants

Market participant	Technology availability/ technical assistance	Problems/needs
Raw materials: Gatherer, association, permit holder/user	Traditional (use of bolo) harvesting; scraping and sun-drying of poles at campsite; lack of storage facilities; preservation techniques not adopted; poor drying results owing to water damage, shrinkage and brittle poles.	Lacks government support; lacks capital for storage facilities; costly to conduct preservation seminars; lack of awareness and positive attitude on preservation.
Semi-processor/ retailer	Pole steaming and chemical treatment available only to big operators; storage for small operators also inadequate; needs preservation techniques since sources (traders) don't do it.	Financing for small operators; lack of awareness positive attitude; lacks training.
Manufacturer	Steaming and chemical treatment only among big operators; preservation techniques not practised by small operators, especially for products only sold to local markets; assistance available from DTI, FPRDI and CFIP, according to big operators.	Needs training on preservation; lacks exposure to proper techniques: needs financing to adopt techniques.
Finished products: Retailer, exporter	Designs and quality techniques adequate for small operator since products sold only to local markets; exporters improve products by additional finishing/decorating	Needs technical assistance to improve product quality for greater value addition; assistance not available in some areas.
Manufacturer	Use of blow torch for small operators; big operators have complete line offacilities from preparation of raw materials to assembly and quality control; technology for combining rattan and non-rattan materials available able to exporters.	Lack of technical know-how and financing for small operators; poor quality raw materials which affect furniture and handicrafts production.

Decision-making Environment of Market Participants

Availability of resources

Plantation owners and government reforestation contractors use public forest lands to develop plantations, the former as part of their leased area for 25 years, the latter in identified areas that are, as per DA0 31 Series of 1991, under the contractor's responsibility for three years (Table 14). Thereafter, the contracted area will be turned over to DENR and the contractor shall receive the balance of the contract price after meeting the required survival rate. The two concession holders that the study covered have adequate facilities unlike the contractors whose tenure is short. Both may employ community members including ICCs in planting activities. Like the gatherers, most have claims to ancestral lands.

The gatherers occupy the forest lands both for housing and farming. The migrants who live in the lowlands may have small parcels of titles land. Those who are engaged in farming have at most a carabao, plough, bolo and hoe. Household members may help in rattan and farm activities. Gatherers who belong to associations work under the concession terms (area, AAC) granted to the associations. On the other hand, non-member gatherers can work with any private permit holder or association not strictly under their employers' terms. Not all associations are equipped with facilities for trading, unlike the private permit holders and big traders who possess large stockyards, more vehicles and machines, and even employ full-time administrative staff and regular and contractual workers. Only NATRIPAL has some of these facilities by virtue of being a recipient of foreign grants. Some associations even use their gatherers' houses to store rattan. Others leave the poles in open air or grassy areas, exposing these to rain, wind and sunlight. All associations and private permit holders employ their family members, gatherers and other workers in the community in trading. However, associations cannot employ additional staff except their family members for administrative work.

Small manufacturers and retailers have small and simple machines (blowtorch, band saw and sewing machine for the retailer), and employ a limited number of workers, averaging about three per manufacturer — the framer, the weaver or decorator, and the finisher. The shop usually occupies the back of their houses, while the front is the display area. The house and shop together covers only about 150 m^2 Workers are not generally provided with additional incentives since they are mostly contractual workers. Only few manufacturers give, free food and lodging to one or two regular/stay-in employees. Big operators, on the other hand, have large factories, extensive facilities and employ more in-house workers, subcontractors and administrative staff. Because of the highly varied types and large volume of products manufactured, they employ an assembly line of factory workers for tasks such as sorting of poles, sanding, steaming or chemical treatment, cutting, bending, framing, assembly, weaving, cleaning and sanding, varnishing, painting, drying, packaging and loading into container vans. Equipment used are more advanced and workers' skills are better developed. Handicrafts manufacturers-exporters generally own large factories, complete lines of equipment and employ a large number of factory and subcontractual workers. One exporter has 150 in-house workers and 600 subcontractors. Only a few workers own farmlands. Subcontractors may employ other workers, in addition to family labour (one subcontractor has up to 50 workers).

Table 14: Availability of land, investments and workforce for market participants

Market participant	Land/stockyard ownership	Facilities	Workers
Plantation owner	Owns concession (govt. leased) averaging 3 063 ha for rattan.	Buildings, quarters, camp facilities, nursery, farm-house, school, housing.	Admin. and contractual plantation and causal workers.
Govt. contractor	60 ha/community, 7 ha per family, 3 year maintenance.	May or may not own farmland; some have claims on pulic lands.	Family and community members.
Gatherer	Migrants in lowlands own small farm lots (0.5 has); most have ancestral claims; houselots ($50m^2$) part of farm lot; *kaingin* farms for rice, corn, banana, coconut, vegetables or root crops have low productivity.	Typically owns a carabao, a plough, a 6010 and a hoe; a -few have small farmhouse with a max. value of Pl 000.	Household head primarily involved in rattan gathering; older children may help in scraping; other members work in the farm and gatherers help when not cutting rattan.
Gatherers' association	Owns rattan concession with *5* 000 to *30* 000 ha secured through nego-tiated contracts with ICCs with average AAC of *393 550 lm.*	Two own a store house each (50 m^2) which is part of gatherer's house, one has a stockyard, others use that of traders with capacity of 15 000 poles and/ or 40 bundles of split rattan; owns a caliper, three own a truck, investments .worth P50 000.	Employs 2-6 admin. staff for secretarial, accounting and operations services for advanced stage coops; 5-10 contractual workers for bundling, loading, scraping or splitting, 100-200 gatherers; labour is generally available.
Private permit user/holder	Owns larger stockyard (1 700 m^2) with capacity of 36 000 poles and 24 bundles splits, houselot (375 m^2) with complete furnishings and garage.	Owns two calipers and one vehicle, some have sizing machines (single/ multiple); investments worth P1.17 million.	Employs 8 admin. staff, 24 contractual workers in the stockyard, 300 gatherers; may pay royalty fee for use of ICC's permit; may employ an agent to manage cutting operations.
Semi-processor/ retailer	No concession; owns store/stockyard of 1 600 m^2 land area with capacity of 38 000 poles, round core/wicker, 420 bundles splits.	Owns sizing, sanding and splitting machines; may own or hire vehicle; investments worth P750 000.	Employs more regular workers, non-admin. workers operate machines, contractuals do bundling, loading and unloading, labour available.

Market participant	Land/stockyard ownership	Facilities	Workers
Transporter/ Trucker		Owns at least two trucks with 20 000 poles max. capacity.	Admin., drivers, other workers.
Shipping line		Fleet of ships, 20 or 40 footer container vans, trucks.	Admin. and regular/ contractual workers.
Furniture manufacturer	For small operators, house serves as work and display shops, others have separate shop (95 m^2) and house (150 m^2); medium-scale operators have larger shops (200 m^2) and outside house (500 m^2); large operators own factories (2 000 m^2) and house (750 m^2)	Small operators — blowtorch, bending table, band saw, etc., all worth P80 000; Medium scale — at most two vehicles, advanced equipment for painting, cutting and bending poles, sewing machine for upholstery, concrete structure for chemical treatment of poles; investments worth P60 000; Large-scale — three vehicles, machines for sanding, sizing, painting, steaming, bleaching, cutting, chemical treatment, all worth about P2 million.	Small operator employs three workers for framing, weaving and finishing, workers transfer from one firm to another, some workers are lazy and unproductive; Medium-scale — three admin. staff and 10 contractual, workers more skilled, industrious, committed; Large-scale — 10 admin. staff, 108 in-house and 471 contractual workers, perform poorly in some areas.
Handicrafts manufacturer	Owns factories (100m^2), houselots (300 m^2), factories can accommodate 20 500 pieces of handicraft items; direct exporters have bigger factories to accommodate 70 000 pieces.	Owns up to three vehicles to procure raw materials and transport products to Manila, machines for welding, cutting, (band saw), spraying, blowtorch, black painting; investments up to P2 million.	Employs three admin. staff, 52 in-house (receiving, loading/ unloading, finishing) and 300 subcontractors; direct exporter has 10 admin. staff, 150 in-house (assembly, quality control to packing) and 600 subcontractors (weaving and wrought iron assembly).
Furniture retailer	Owns small store (70 m^2) for retailing for 15 sets, house (150 m^2).	Owns one sewing machine for upholstery.	Employs few workers since trading only in semi-finished products.
Handicraft retailer/ manufacturer	Owns factory house (1 000 m^2) for 10 000 baskets and store (50 m^2) for 100 baskets.	Owns one vehicle, blowtorch and gadgets for handicraft.	Employs 50 in-house, 50 subcontractors/ weavers, one salesgirl; workers need skill improvement to reduce rejects.

Market participant	Land/stockyard ownership	Facilities	Workers
Handicraft exporter	Owns factory (1,500 m^2> for finishing touches, houselot (600 m^2>	Owns trucks and cars, advanced equipment, more departments for different product types; investments of P1.6 million.	Employs 10 admin. staff, 100 in-house and 100 subcontractors; labour is readily available.
Furniture worker	Only tow out of 36 own farmland (l-2 ha), houselot (50~100m^2).	Few have home appliances; subcontractor owns a shop, one has a vehicle.	Household head assisted by 1.3 family members; sub-contractor has 40-50 workers.
Handicraft worker	Most do not own farmland except village-based subcontractors in Tayabas.	Few home appliances.	In-house workers hold supervisory jobs; subcontractors have up to 10 workers.

Labour is generally available for rattan activities. Even among gatherers, farm activities do not pose labour constraints as family labour is available and farming practices are traditional, not entailing labour-intensive operations required for modern technologies and horticultural crops. Constraints on technology adoption caused by capital availability limits farm productivity. Among furniture manufacturers, labour problem is experienced by small operators when workers move from one firm to another. The cause is the lack of regularity in production operations, unlike in big firms whose well-established links to markets ensure more sustained and regular production and labour use. Also, big firms often provide some incentives to in-house workers. During peak production periods, workers are generally willing to work overtime. In lean months, subcontractors look for non-rattan work. The case is quite different among those who work for handicrafts manufacturers. Because of regular product exports, workers are more regularly employed. Subcontractors, who are farmers, spend their planting and harvesting schedules outside their handicraft work.

Gatherers and associations are financed by their buyers, indicating the credit-marketing tie-ups among rattan sellers and buyers (Table 15). Non-members borrow from traders to whom they sell rattan. Gatherers obtain cash advances for their cutting operations with the balance of sales proceeds given after delivery of poles. Associations maintain the same arrangement with their buyers without any interest charges. None borrow from banks owing to collateral requirements. Another source is the private moneylender, who charges a high interest of 7% per month.

Traders are self-financed and have access to banks and other institutional lenders. Small ones avail cash advance from their buyers who are big city traders. Small furniture/handicrafts operators, including retailers, borrow from private lenders, relatives and friends while medium-scale ones may also source from banks. Big operators/exporters who require large capital rely on banks. Workers obtain advance payments from their employers. Very few borrow from cooperatives.

Technical assistance on rattan planting is only available in areas where DENR-SECAL projects exist. Gatherers, who are members of relatively established organization like NATRIPAL, also have access to assistance in basket-making and community organizing. Most gatherers, however, are yet to get access to such benefits. Training programs on post-harvest practices, manufacturing techniques and market linking are available to big operators and exporters through DTI, PhilExport, CFIP and FPRDI.

Specifically, one semi-processor in Angeles City regularly attends seminars or invites resource persons for training on processing and preservation of raw materials. It has already availed training in kiln-drying, wood bending, bleaching and chemical treatment from FPRDI and inventory management from DTI. Medium and large furniture manufacturers and handicraft exporters who are members of trade associations have availed of training on raw material preservation, weaving and finishing techniques, human resource management, and market linking. They also participate in trade exhibitions sponsored by their own associations. Small operators have limited access to such openings. Others are either indifferent or say that assistance is not available.

Table 15 : Credit and technical assistance available to market participants

Market participant	Credit facility	Technical assistance
Plantation owner	Bank and govt. corporations for private, govt. reforestation fund for family/community contractors.	Plantation establishment and management from DENR and in-house experts; govt. contractors from DENR.
Gatherer	Advance payment in the form of food supplies from financier (association, private licensee, local manufacturer) worth P200 to P400 per person for a cutting operation (1-2 weeks).	Planting methods from DENR in Kabugao; basket, honey and almaciga-making & marketing through NATRIPAL; crude oil boiling (Baggao) from trader; no perceived benefits; others have not availed any assistance.
Association	From buyer/trader averaging P50 000 for 2-4 week cutting operation, balance of sales proceeds upon delivery; private lender at 7% monthly interest; no bank loans availed of owing to collateral requirement; NATRIPAL received foreign grants.	Furniture making from DTI; plantation establishment seminar through DENR-SECAL project (Kabugao); community organizing and basket-making through NATRIPAL.
Private licensee	Self-financed or from bank (14 to 18% monthly interest with collateral) or buyer; average amount is P300 000 per shipment.	10 out of 12 did not avail of any technical assistance; one attended seminar on rattan planting by DENR, one on chemical treatment through NATRIPAL.

Market participant	Credit facility	Technical assistance
Semi-processor / retailer	Big operators from banks (3.5% per month); others from private lender and suppliers; also poles can be paid for in instalments; average loan is P400 000.	Only one availed of training on kiln drying, wood bending, bleaching, and chemical treatment from FPRDI and inventory management from DTI.
Furniture manufacturer	Small operators: self-financed or from coops (8.20% per year), friends / relatives, private lenders (60% per year); seldom from banks owing to collateral requirements; average loan is P45 000; medium-scale: banks (18% per year) and private lenders (36% per year); average loan is P60 000. large-scale: from banks through letter of credit.	Half availed of DTI / FPRDI sponsored training on furniture making / preservation, others already skilled. large-scale: from CFIP, PhilExport, ECCP, etc. on human resource management, market linking, trade exhibitions.
Handicrafts manufacturer	Personal savings, banks, buyer / exporter; direct exporters only from banks (14-18% per year); average is Pl million.	Only two availed DTI assistance on handicrafts making, others relied on own experience and innovations; direct exporter in Angeles City availed of training on human resource and inventory management, powder coating, etc.; seminar from DTI and FPRDI.
Furniture worker in firms	Small-scale: 50% borrow (advance payment) from employers, others from relatives / private lenders, and some do not borrow. Medium-scale: from employers. Large-scale: mostly from employer (24--36% per year); one subcontractor borrows from coop / bank	Small-scale: only two out of 18 took training from DTI, others learn from experience; Medium-scale: none availed. Large-scale: five out of 14 availed of DTI seminar; subcontractors cannot receive firm's technical assistance since not regular staff.
Handicrafts worker	In-house and subcontrctors from employer/manufacturer (advance payment).	Have not availed of technical assistance, except in Pampanga.
Furniture retailer	From personal savings / friends, not from bank owing to collateral require · ments, avarage loan is P32500.	Some do not feel the need, others say none available.
Handicrafts retailer	From coop (Tayabas) at 20% per year.	Not available, others do not feel the need.
Handicrafts exporter	From banks with or without letter of credit (16% per year); avarage loan is Pl million.	Easy access to DTI, PhilExport; human resource management, market linking, exhibitions.

Knowledge level and information availability

Among market participants, gatherers have the least access to market information. Not all know about other buyers and sellers of rattan. They are simply price-takers, the price being set by their buyers — either the association or trader. There are at least two cases where the association employs lot buying of poles regardless of species and size. As trader, the association is able to negotiate its selling price with its buyer. The semi-processor, while able to set his selling price, takes the price set by his raw material source. Small manufacturers and finished product retailers have scant knowledge of market and prices, often limited to their respective areas of operation, unlike large manufacturers and exporters whose market access extends beyond the domestic market. Selling price may be set by either the exporter or the buyer. In general, all sellers of raw materials (except the gatherers) can set the price. Sellers of finished products can also set the price or negotiate with buyers.

Sellers of raw materials, except the gatherers, generally know about DAO 4 requirements relating to cutting, transport and replanting of rattan. Among gatherers, only the head cutter is aware of such regulations while the rest do not even understand their CADC privilege as stipulated under DAO 2 (1993). Associations and permit holders/users are more aware of policies in DAO 4. However, they still pay the illegal rates and bribes which they find more beneficial and convenient for faster transport of raw materials. Such practice has already been observed for years in the country. The 1992 study conducted by the main office of DENR revealed that, aside from the permittee's violations, the inadequacy of knowledge on the part of regulation implementors as well as the indifference of the CENROs themselves on the policy contribute largely to the failure of implementing rattan regulations. The study indicated the need to reorient DENR personnel on the policy provisions, institutionalize the CENROs' participation and evaluate/police the permittees' activities. However, these have not been carried out satisfactorily until the present time.

Manufacturers and transporters of finished products, except the small operators, know the export and labour laws. There are cases in CAR and Cagayan wherein small furniture makers are made to pay "forest charges" and bribes by the DENR personnel for materia transported to the next town or province. They reported their inability to do anything about this as they believed the practice to be legal. Workers of manufacturers are generally aware only of the minimum wage, and not of rattan cutting, transport and export regulations because these do not directly affect them.

Government contractors of reforestation projects understand the terms and conditions under DAO 31 (1989). The provisions of various administrative issuances affecting rattan appear in Table 16. The most recent one, which was issued in July 1995, states that community-based forest management (CBFM) shall be adopted as the national strategy for the sustainable development of the country's forest land resources. This is a major policy shift from the current system whereby forest management is given to and undertaken by private individuals and corporation who are called TLA holders. Under this system, the communications' participation, if any, is only in providing labour without having any role in decision-making.

Market participants were also asked about their expectations on the future of the rattan industry. They were asked whether they see good /favourable or bad/unfavourable future and the reasons for these. Among the gatherers, there is still a majority (66%) who see good

prospects for the industry. They believe that they can get enough income from rattan gathering and that the supply is available despite the long distance they have to trek for it. They also believe that with good financing, rattan gathering can provide an adequate income for them. Other gatherers (2 j%), however, believe that the situation of the industry is getting worse because of the dwindling rattan supply and the hard work that they have to render to earn the limited income they receive at present. As for the associations, the majority (83%) see good prospects for the industry. The Apayao associations believed, however, that better financing/higher prices and reforms in the government are needed. The Baggao association thinks that supply is still available, while the associations in Bukidnon and Cagayan de Oro City see good prospect because of the high demand for raw materials, especially in Cebu. Only NATRIPAL perceive a poor prospect because of diminsihing rattan supply, low income that gathers receive, and corruption in the government which adversely affects their operations.

There are more (58%) private traders and semi-processor/retailers (SP/Rs) who perceive that the industry is not going well. Among the private.traders, the reasons cited are the high costs they incur, corruption prevailing in the government and declining supply. Among the Sp/Rs, they see declining demand for finished products, stiff competition in the export market (for Angeles City and Cebu SP/Rs) and declining supply of raw materials (for Tayabas SP/Rs).

Table 16: DENR policy guidelines that affect the rattan sector

DA0 No.	Provisions
4 (1989)	Harvesting only for those with rattan cutting licence issued by DENR; maximum area for individuals 5 000 ha, for partnerships, associations and coops — 30 000 ha; each permittee should sustain AAC of 50 000 lm. Rattan plantation development encouraged in brushlands, open lands, recently logged-over forests, and second growth forests not scheduled for relogging within next 20 years; existing govt. reforestation projects; plantation lease for 25 years renewable for the same period; area not more than 30 000 ha; provisions of seedlings at production cost and technical assistance by DENR; harvest from plantations belong to lessee who can sell but not export raw rattan. Payment of a special deposit of P0.50/lm for >2 cm and P0.20/lm <2cm rattan based on AAC, collected for new/renewal of permit; may be withdrawn for replanting purposes. ICCs may be given permit to cut and process rattan on negotiated basis; non-ICCs through bidding.
39 (1993)	Forest charges: unsplit rattan — P0.85lm >2cm and P0.65/lm ~2 cm for palasan, calape and kurakling, P0.80/lm and P0.50/lm for tumalim, limuran, ditaan, other species, split rattan — P3.50/kg; charges based on a certificate of minor forest product origin (CMFPO) issued to permit holder or his agent, after payment of forest charges, together with auxiliary invoice and certificate of transport, all of which are subject to inspection at various DENR/police check-points.
69 (1993)	Floor price rates for bidding rattan areas for licensing: P0.50/lm >2 cm and P0.46/ln <2 cm.
2 (1993)	Sets guidelines for the recognition and protection of ICCs rights to ancestral lands through a certificate of ancestral domain claims (CADC); responsibilities include proper forest management with assistance from NGO.

DA0 No.	Provisions
31 (1991)	Contract reforestation including rattan. Contractors may include private sector (families, communities, corporations) and public sector (LGUs, other govt. agencies); preference for family/community contractors through allocation of 60% of contract goal in the region, PENRO or CENRO. Area coverage: family, 5-10 ha; community, 10-100 ha; corporate, may exceed 100 ha. Duration of contract is 36 months spread over 3-4 years. Minimum survival rate upon turn over to DENR — 80% based on minimum planting density of 400 plants/ha. Contract price/cost ceiling (all slopes) — Pl3 55O/ha. Completed contracts may be converted to Forest Land Management Agreement (FLMA) areas providing for harvesting and utilization privileges for 25 years renewable for the same period.
22 (1993)	Provides for community forestry program (CEP); communities/ICCs may be awarded certificate or forest management agreement (CFMA) for 25 years renewable for same period; comprehensive forest management includes rattan.
18 (1993)	Licence/permit fee for rattan manufacturing/processing plant — P50 for every Pl0 000 authorized capitalization. Performance bonds (cash) for rattan manufacturing/processing plant — P3 for every 1 000 lm but not less than P5 000. Annual rental for rattan plantations — 1st year, none ; 6th-10th year, PO.50 ha and 1 lth year and thereafter, P1/ha.
EO 263 (1995)	Adopts community-based forest management (CBFM) as the national strategy to ensure sustainable development of the country's forest land resources (including rattan).

Among the finished product traders and furniture and handicrafts manufactures, there are still a majority who perceive a good prospect for the industry (61% for furniture manufacturers and 78% for indirect/direct handicrafts exporters). In general, these market participants see expanding markets for their products, good income source, and feel that the industry will continue to boom with better skills training. In contrast, some others (especially the small firms) face the problem of low capital (and thus low income) and lack of market for their products. Some exporters are faced with declining markets owing to increasing competition with foreign suppliers and hence they see the need to diversify.

In general, the perceptions of market participants about the future of the industry are determined by factors that affect their operations such as government policy, prices, market (supply and demand) situation, raw material supply and capital/funding availability.

Incentive structure

Incentives, which include cash and non-cash benefits, vary according to the type of activities the different groups of market participants are engaged in and not necessarily on the time they spent in such activities. Most participants work full time on rattan activities but receive differential incentives as shown in their net incomes from rattan (Table 17). Big traders and manufacturers realize much higher returns than gatherers and workers who spend even

longer hours at times. Monthly income is less than Pl 000 for gatherer, up to P2 000-3 000 for worker, up to P25 000 for rattan trader, and as high as P2.5 million for a handicrafts exporter.

Within each group, however, variations in incentives depend on time spent. Gatherers who have regular orders and receive adequate financing from their buyers spend more time in gathering. Similarly, in-house workers of large firms are employed on a regular basis, 8 hours, 6 days a week. They receive daily wages plus bonuses, insurance, leave credits, health benefits and the opportunity to work overtime during peak periods. Variations are also due to skill, work quality and length of stay in the factory. Men, who do jobs in furniture making that are more difficult and require more skills, receive higher wages than women and youth. Handicraft workers, especially those in Quezon, are usually subcontractors who do not receive additional incentives and spend less time in rattan.

Volume of poles gathered positively affects income from rattan, but years spent in schooling show a negative effect on income. This is so since those who have relatively higher schooling usually become the head cutter whose work is supervisory, and therefore they gather less rattan. Among workers, income from rattan is positively influenced by age, size of firm (large vs. small) and type of product (furniture vs. handicrafts). Age is related to skill and length of stay in the company.

Institutional arrangements

As per DA0 4, the ICCs organized as individual or groups of association(s) can apply for rattan cutting permits on a negotiated basis for a maximum of 30 000 ha Within specified boundaries and AAC. Permit is for 10 years subject to renewal every year. Non-ICCs apply through bidding. Of the six associations considered, three have 30 000 ha each, two have 10 000 ha and one has 5 000 ha. Each association has 100-200 members, and all except one was founded in the early 1990s. The membership varies depending on the availability of finances and involvement/commitment of the gatherers to sell poles to the association. In Apayao and Cagayan, the Igorot, Isneg, Bago, Kalinga and Aetas tribal groups comprise the membership; in Palawan, the Tagbanua and Batac tribes are the members; in Bukidnon, there are the Manobos; and in Lanao del Sur, the Maranaw, Muslim and Talakag tribes are members. Two associations are federation, in organizational structure. The one in Apayao which consists of five associations representing each of the tribal groups, while the other in Palawan (NATRIPAL) heads 56 associations in the entire province. AAC ranged from 30 000 to 1 million lm, averaging about 400 000 lm. Arrangement with gatherer-members and non-members does not differ much among associations. In general, only the members have credit tie-ups with the association, except in Cagayan. The association buys most of the harvest from their members (95-98%) but they also buy from non-members (2-5%). Individual permit holders are given 5 000 ha. Their AAC averaged about 242 000 lm. Permit renewal requires re-planting and payment of a special deposit. Institutional incapability of DENR is reflected in the commonness of contract violations (gathering in excess of AAC, under-reporting of harvest, non-planting), facilitated through bribes made by permittees to government personnel. Actual harvests are thus higher than AAC with the latter estimated at only 49%1 and 16% of harvest for ICC and non-ICC permit holders, respectively.

Table 17: Characteristics of Market participants (1995)

Market participant	Age (yrs)	Schooling (yrs)	Rattan experience (yrs)	Est. income (P/month)[a]		
				Rattan	Others	Total
Gatherer:						
Member	36	5	7	941	632	1 573
Non-member	41	4	6	962	692	1 654
Raw rattan trader	47	10	4	3 277	4 000	7 277
Association[b]	42	12	8	14 462	6 000	20 462
Indiv. permit holder/ user	43	13	4	864	–	4 864
Semi processor/retailer	41	13	7	25 842	667	26 539
Finished products trader:						
Handicrafts manufacturer -retailer	45	14	25	33 600	—	33 600
Furniture retailer	40	6	10	1 148	–	1 148
Handicrafts exporter	34	12	7	31 890	–	31 890
Manufacturer — furniture:						
small	39	12	4	5 000	4 207	9 207
medium	34	11	15	13 908	–	13 908
large	42	14	16	88 683	8 333	97 016
Manufacturer — handicrafts:						
indirect exporter	48	13	14	18 021	11 750	29 771
direct exporter	36	14	9	2 499 566	–	2 499 566
Worker — furniture:						
in-house						
- men	32	10	4	3 034	—	3 034
- women	32	8	3	2 548	–	2 548
- youth	18	7	2	1 968	—	1968
subcontract						
- men	36	9	4	3 576	–	3 576
- women	30	9	4	2 202	—	2 202
- youth	17	6	2	2 208	—	2 208
Worker — handicrafts:						
in-house						
- men	32	10	7	2 860	—	2 860
- women	30	9	5	3 241	–	3 241
- youth	18	7	2	1 501	–	1 501
subcontract						
- men	36	10	7	2 056	792	2 848
- women	31	10	6	2 224	—	2 224
- youth	18	7	2	(work as helpers only)		

Notes:

a = For traders and manufacturers, net income from rattan operations; for gatherers, value of rattan sold; and for workers, wages (daily or output-based)

b = Characteristics refer to permit holder.

Two associations are covered by DENR projects like the Sectoral Adjustment Loan (SECAL) and Community Forestry Program (CFP), providing funding for community organizing and various forest management and livelihood activities. For CFP, they are awarded the community forest management agreement (CFMA). CFMA provides the community with tenurial security to manage the forest resources, including sale of forest products, according to an approved forest management plan. Since this is a new approach, an NGO is tasked to provide the necessary assistance to the community. The CFP experience is planned to form the basis for the new CBFM. All are applying to obtain ancestral domain claims (CADC) certificate under DA0 31 (1993).

As members of ICCs with permits, they have market assurance, can avail of financing from the association if available, and have legal status for rattan gathering. If covered by DENR projects, they have employment and income possibilities in forest management activities. Non-members are either covered by non-ICC permit holders or engage in illegal cutting. The associations of small furniture manufacturers in Baggao and Bukidnon who obtain raw materials from illegal cutters have expressed interest to secure a permit for their gatherers.

Some traders are members of associations but are less active than big manufacturers and exporters, who are members of national and regional associations like CFIP, PhilExport, CITEM and PCCI. As such, big operators have better access to markets, inputs, price information and technical assistance provided by government agencies. Small manufacturers are mostly unorganized or belong to inactive/less established organizations. Factory workers, however, are the least organized at the most having an informal in-house organization.

Characteristics of Market Participants

Socio-economic characteristics

Gatherer-respondents are males, who are either members or non-members of an association. Their average age is 38 years. Only three may be considered of old age at 54-60 years. Most gatherers have completed primary schooling, but at least 10 were not able to go to school. All workers have gone to school, majority in the high school but none have finished college. They have been engaged in rattan gathering for 6 years and complement their main source of income with agricultural activities and gathering of other non-timber products. Those engaged in upland farming devote only limited time to this activity, often times coinciding with the rainy season when rattan gathering is difficult.

The average family size of the gatherers is six members. There is at least one member (the wife or one son/daughter), who joins the gatherer in the cutting area, and at most one family or tribe which helps in gathering rattan, as in the case of the Manobos employed by the local manufacturers in Bukidnon. The wives usually just provide assistance in scraping and cooking food during cutting trips. The gatherers usually go to the cutting area in groups. One group may consist of members of their family, relatives or neighbours/members of the. village. The highest number of members is found among Bukidnon gatherers who cut in groups of up to 16 members comprising the household head/father, mother and other women (about eight) and children/youth (for association members).

The living conditions of the gatherers are generally poor. Earning only more than P900 per month from rattan and more than P600 per month from agricultural and other forest activities, the monthly remuneration of the gatherers is way below the poverty line of P7 000 per month per household in the country. Houses are made of nipa or wood and seldom have galvanized iron' roofing. Only in Conner, Apayao, do houses have electricity. Water is available by pump, deepwell, pipes or stream. In all areas covered, the gatherers as well as the community members are deprived of any modern communication systems. Transport facilities are also lacking.

Trading and manufacturing are usually family business and both spouses work together, at times assisted by adult children. Raw material traders and semi-processor/retailers are, on average, 43 years of age and have reached second year of college schooling *(Note: the following data* on *age, schooling* experience, *etc. are all averages).* They have been engaged in rattan trading/semi-processing for *6* years. Aside from rattan, they are engaged in agricultural or non-farm activities. As large operators, they receive moderate to high levels of income from rattan and other businesses. Small manufacturers and finished product retailers receive relatively low income, while large exporters and manufacturers earn much higher income from rattan manufacturing and exporting. Finished product traders and manufacturers are about 40 years of age and have been in the rattan business for more than 10 years. Trading and manufacturing experience is longer than gatherers' at 7-25 years.

Worker-respondents were distributed as 51% male, 22% female and 27% youth. Youth workers are about 18 years old. Work experience in rattan factories or under subcontract ranges from 2 years among the youth to 4-7 among adult workers.

Rattan provides the primary source of income for almost all participants. Rattan manufacturers have also diversified to timber and other NTFPs. Some others have non-farm jobs. As expected, gatherers and workers have the lowest income while big operators have the highest. Income of the gatherers and workers for 1995 was below the poverty threshold, of about P36 000 per year (based on annual per capita poverty threshold of P7 212 in 1991 for five members per household). Generally, adult men received higher income than adult women, but the difference in income between the youth and adult women is minimal.

Net incomes of market participants were based from the monthly costs and returns from rattan. Costs comprise forest charges, special deposit, trucking and shipping costs, bribes, value of poles bought, labour, and administrative and other costs for associations, permit holders/users and semi-processor/retailers. Rental, mayor's permit and other taxes, labour and administrative, transportation and raw material costs are the major cost components for finished product traders and manufacturers. Net returns were computed by deducting average monthly costs from total revenues (average volume of raw materials sold or finished products manufactured/sold multiplied by the sale price).

For the associations and private traders, aside from the value of poles bought, the forest charges/special deposit comprised the highest cost component, contributing to an average of 25% and 14% of the total costs, respectively. These are based on misdeclared costs of the volume of poles transported which is only about 1/3 of the actual volume. Trucking and shipping costs also form a major component (about 8-11% as discussed earlier, if bribes

are not paid and transport costs are lowered, then profits may be increased. All associations and private traders received profits from rattan trading, except the Lenneng association in Apayao which incurred a loss because of low gross income from sale of poles compared with its total costs.

Semi-processor/retailers (SP/Rs), particularly in Angeles City and Cebu incurred high costs in rattan trading because of the large volume of poles and semi-processed products they handle. Labour, which consists of regular employees in the office and stockyard labourers, and transport costs comprise the largest component (23%). On the other hand, the Tayabas trader, who operates on a small-scale basis, incurred only minimal costs. All SP/Rs received positive monthly incomes from rattan trading.

Small-scale furniture manufacturers spent most of their capital on raw materials (poles/splits), averaging 81% of their total costs. Other expenses incurred were rental, taxes/mayor's permit, transportation and other material costs, water and electricity which were about 20% of the total costs. Medium-scale furniture manufacturers incurred higher costs, with the cost of raw materials as the major cost component (about 90%). Unlike the small and medium-scale manufacturers, large-scale firms pay for its regular employees (administrative costs) and stockyard labour which constitutes about 2% of the total cost. Taxes and transport costs are higher in proportion (8% each) compared with smaller manufacturers. In terms of returns, the small manufacturers sold only a small volume of furniture items (1-3 sala sets, for example) when compared with medium (about 10 sala sets) and large firms (40-105 sala sets). Hence, they receive much lower net profits from rattan (P5 648/month on average) compared with their medium (P13 718/month) and large firm counterparts (P78 000/month). Moreover, large firms market diverse types of furniture, mainly in the export markets.

The main difference among these three types of furniture manufacturers is their capital intensity. Small firms have very small capital and thus can only produce very simple and a limited volume of furniture. Medium-scale manufacturers have larger capital, enabling them to buy more advanced equipment and machinery for producing more sophisticated and better quality furniture that command higher prices. They also have capital to employ more skilled labour and avail of various forms of technical assistance from government or private sectors to improve their product quality. Large-scale firms have the largest capital which permits them to employ a large labour force (managerial/supervisory, administrative and stockyard/casual workers), buy the most advanced and modern machinery and equipment, diversify product lines, and sell to the export market. They can become members of large trade associations, avail technical assistance from government and private sectors, and have the biggest market for their products through their wide market networks/linkages.

Indirect and direct exporters of handicrafts and small rattan items pay a portion (10%) of their income as taxes, apart from raw materials and other inputs that comprise the major costs (87%). Profits received are high since all of them handle a large volume of finished products.

Women and children/youth play a very important role in all activities from gathering to finished product manufacturing and marketing. Women may be engaged in scraping, removing

nodes of poles, cooking for their husbands at the gatherer's level, or administrative jobs. Youth and children (some of them school-going) assist or are directly engaged in gathering, loading, bundling, scraping, weaving or cleaning. In all activities, they receive little or no compensation for their jobs. Women and children/youth engaged in scraping can finish 100-200 poles per day and are paid only PO.250.50 per pole or an equivalent of P38-75 per day. Those who help cut and carry poles from the campsite or cook food for their husbands while in the cutting area do not receive any pay for their work. Children helping in the stockyard can earn only a maximum of P60 per day doing counting, bundling and loading. Only women and youth employed as factory workers or subcontractors earn about P2 000-3 000 per month and may receive additional benefits from the company employing them.

Dependency on rattan

Gatherers and workers appear to be the most disadvantaged groups in the rattan sector. They rank lowest (10th and 9th, respectively) in terms of income and highest (2nd and lst, respectively) in number of people involved in rattan activities. While the rattan income share is relatively small when compared with traders and manufacturers, it is significant to these groups because of their low economic base. In the event that such income is lost, the level of poverty will be worse. Considering their socio-economic situation, there seems to be little possibility for them to shift to alternative employment. Although the gatherers are willing to shift from rattan work if faced with other better employment opportunities, or unfavourable developments in rattan supply and market occur, they believe that neither the rattan supply nor the demand for it will decline. Because of this belief, they do not seem to fear loss of jobs in rattan gathering.

Comparatively, the big operators have adequate capital and educational attainment which provide them more employment possibilities just in case the rattan business fails. Gatherers and workers comprise the largest groups in the rattan sector. Any improvement in their socio-economic situation through better rattan prospects will help address the country's inequity and poverty problems.

Rattan Plantation Development Efforts

Two large companies have established rattan plantations: the Paper Industries Corporation of the Philippines/National Development Corporation (PICOP/NDC) and the Provident Tree Farms, Inc. (PTFI).

PTFI is one of the pioneering companies in establishing industrial tree plantations. It is engaged basically in matchwood and commercial timber plantation establishment through an environmentally sound management of denuded and otherwise unproductive, inadequately stocked forests. To date, about 9 446 ha of its area have been planted with various matchwood species, and 1 018 ha are planted with rattan under contract with a Cebu-based furniture exporter; both ventures are covered under the Industrial Forest Management Agreement (IFMA). Of the area planted with rattan, 843 ha has *Calamus merrillii* (palasan) and 175 ha has C. *ornatus* (kalapi). Starting rattan planting in 1985, the company has been providing valuable support to the community by employing the Manobos in planting and other activities,

giving direct employment to some of the residents in the community through livelihood projects like basket weaving, helping in the repair of bridges and culverts, and setting up artesian wells and free medical services to the local residents.

PICOP-NDC rattan management project is covered by the Rattan Plantation Lease Agreement (RPLA) No. 1, which has a tenure of 25 years and is renewable for another 25 years. The project started in 1983 and covers an area of 5 792 ha. But only 5 108 ha has been planted with *C. merrillii.* The plantation was established within the concession of PICOP, in two stages. During the initial stage (1983-85),most of the planting materials used were wildlings collected from naturally growing rattan species and from seeds directly sown in designated planting spots. Nursery-grown seedling were only used during the second stage of planting (1990-92).

The activities and strategies applied by the respective companies in the establishment and maintenance of rattan plantations differed from one another. For PTFI, the management regimes applied were seedling production and maintenance, survey/delineation/blocking, strip clearing, staking, ring weeding, holing, planting, sampling inventory, and maintenance (fertilizer application, weeding, and collection and application of compost). The activities pursued by the PICOP/NDC rattan plantation include seedling procurement, survey and blocking, site preparation/planting, plantation maintenance (weeding, protection, inspection), and provision of incentives when blocks are turned over to PICOP by the communities commissioned to do the planting and maintenance.

A previous study, conducted by Rivera in 1992, found that the expenditure incurred by PTFI on a per ha basis was P4 255.72 in the first year, P520 in the second year and P260 in the third year. On the other hand, PICOP incurred P9 090 per ha in the first year, P2 979 in the second year and P3 860.40 in the third year. The difference in costs may be attributed to the differences in the management strategies applied by the respective companies.

The prescribed rattan stocking density was 400 plants per ha. The PICOP management expected that the company could harvest in years 8, 11 and 14. The estimated yield per ha was 400 poles on the first harvest and 800 poles each on the second and third harvests. However, an on-site inventory and assessment by ERDB in 1994 found that the total length of mature canes in the plantation was 345 722 lm or 270 lm/ha at an average of six plants/ha. There is still much to be expected from immature plants which were estimated at 109/ha or a total of 572 306 plants in the area. It was also computed that the length of the mature canes per plant on the average is just about 11 m, although this length contains some portions that may not be acceptable to rattan buyers. The final commercial length after harvesting and pre-marketing treatments will thus be reduced to about 9 m. The immature canes averaged less than 2 m in length. The ERDB report concluded that, although there was an adequate number of growing stock in the area, it might take at least 15 years to reach commercial size and this depended on the silvicultural treatments applied to accelerate their growth.

With the findings of this assessment and the actual condition of the rattan plantation, the first harvest was projected to be in the 16th year and succeeding yearly harvests thereafter. Thus, using cost estimates of the activities identified in the study done by Rivera and the actual yield inventory done by the ERDB team, the computed net present value of the

PICOP / NDC rattan project at 20% rate of interest is P10 609 and the benefit-cost ratio at interest rate 20% is 0.18.

The PICOP / NDC rattan project may seem not to be a viable endeavour because of the high expenses incurred on tools, equipment and vehicles, high overhead costs, and low yield. Low yield was due to improper management of the rattan plantation and poaching. The ERDB report stated that to ensure a good rattan yield, proper management of the plantation has to be done by opening-up of stands to allow entry of sunlight into the forest floor and regular application of silvicultrual treatments. Some silvicultural measures, such as weeding and loosening the soil, was done only during the first three years of the plantation and no other maintenance activities were carried out thereafter. Management of the plantation was not given proper focus owing to some problems encountered. For instance, when some cuttings or thinning were to be done, the company had to secure a cutting permit. Although thinning is needed for rattan plantations, it was not pursued as it was not within the scheduled activity of tree plantations. In short, rattan was considered a secondary crop and thus given second priority. It may be said that had the company adopted proper rattan management measures, it would have realized the expected profits since the rattan poles are of a quality that commands a good market price.

A crucial activity which the ERDB team identified in the management of the plantation is protection from poaching. C. *memillii* has edible shoots and once the shoots are cut, the cane stops growing. Therefore, the management regime needs to include protection of the area to minimize premature harvesting or cutting of shoots or canes.

As far as the PTFI plantation is concerned, there is no actual inventory or research study done on its potential yield. The yield estimates provided by the company and the costs incurred in plantation establishment; which was indicated in the study of River-a (1992), were used in the computation of the profitability indicators. The computed net present value and benefit-cost ratio at 20% rate of interest were P1 246.38 and 1.12, respectively. Because of the expected higher yields and lower costs incurred compared with the PICOP / NDC rattan plantation, PTFI was able to project better financial returns.

Considering these profitability indications, it seems that investing in rattan plantations is not very promising in view of the risks involved. It takes 15-16 years for rattan to mature for harvest. Furthermore, investments made in terms of human, material, financial and technological resources in the establishment and maintenance of the plantations prove to be too high to expect decent returns. Management of a large plantation by one company seems to be labour and capital-intensive. Inclusion of rattan in the community-based forest management (CBFM) approach — wherein local communities are harnessed and are identified as partners in forest production, utilization and protection — may seem to be a good move. Furthermore, if vertical integration is encouraged, then the profitability indicators may show positive returns and imply financial feasibility since the harvested poles may be transformed by the plantation owners into high-value products, such as furniture and other home items which are in demand in the export market. Nevertheless, transforming rattan into high-value products entails more research as well as financial, material,. labour and technical inputs.

The presence of support trees is a requirement for rattan to grow; thus, it is but proper to plant these in areas identified for forest production. However, these forest production areas are state-owned. In this scenario, it may be ideal that the government takes the initiative in pursuing this activity. Although private individuals or corporations are perceived as the sole end-users of rattan poles and the direct beneficiaries of all revenues from the sale of rattan products, it is nevertheless imperative that the government and the private sectors work hand in hand to attain their respective objectives: forest cover restoration/rehabilitation, conservation and preservation on the part of the government, and an optimum and steady supply of and demand for rattan raw materials and finished products on the part of the private sector.

With the government's launching of CBFM program as the national strategy in forest production, conservation and utilization, the importance of the local communities cannot be overlooked. These people will be included as partners in the protection, conservation and rehabilitation of forests. Thus, the requirements in establishing a rattan plantation may be partly met by these forest dwellers.

Aside from these two plantations covered by long-term lease agreements (25 years), rattan plantation establishments are contracted under the DENR's reforestation program started in 1989. Some of these are undertaken through various community-based forestry initiatives. Contracts specify establishment and maintenance by the contractor for three years after which Planations are to be turned over to DENR. Founding is provided through an ADB loan to the Philippine government and, as per contract with family or community contractors it will be given in three releases, the last one on the third year after inspection by DENR personnel.

As of Decembers 1991, contractors cover 6037 ha, 87% of which are under community contractors. Total cost of contracted planation for 1989-91 is P53 million. Interviews with DENR Personal indicate that monitoring has been poor and that only about 40% of these contractors have actually have been turned over to DENR. The rest seem to have given up the third funding release but DENR could not tell about status of these planations.

Only regions I,V,IX and X provided partial status reports on their rattan planations. A total of 2 280 ha was reported have to been planted in Region I including 1899 ha established under the Philippine Forestry Development Project in Ilocos Norte (PFDPIN) during 1988-93. All these, expect 86. ha in Pangasinan which were abandoned and planting discontinued, were either turned over to DENR or are being maintained by PFDPIN. The Regional Office also reported an average survival rate of 66% and an average plant height of 1.4 m, Both of which are indicative of fair establishment performance. In Region V, a total of 545 has was reported including plantations established in Camarines Norte, Camarines Sure and Albay. About 420 ha not recorded in the December 1991 list and are part of the second phase reforestation project were included. These were planted in 1995. All areas except 19 ha site in Camarines Sur have been Turned over to DENR in 1989 and 1994-95. These are being maintained by the DENR or local associations and NGOs in the respective areas. Only 20 ha were included in the status report in Region IX which were planted way back in 1980 in Zamboanga City. Based on the report, all areas have already been abandoned and converted as *kaingin* farmlots. In region X, 687 ha have already been reported established

in the provinces of Bukidon Malaybalay and Cagayan de Oro and Button City. These were Planted in 1989-91. Of these, 262 ha have already been turned over to the DENR, 400 ha were being evaluated for turnover at its final stage and 25.1 ha have been abandoned.

Another rattan plantation establishment effort being done is to require licensees to replant each year in order to renew their licences. As per DA0 4(1989) a rattan special deposit (RSD) is collected from each Licensee for using in replanting activities. The deposit amounts to P0.50/lm for large diameter poles (2 cm and above) and P0.20lm for small diameter ones (below 2 cm) based on the AAC. The amount collected must be deposited in a DENR -accredited bank and may be withdrawn on the basics of an annual budget program on basic rattan planation establishment activities of the licensee of the implementation of the replanting program itself.

According to the associations and private permit holders interviewed, they do some replanting activities. Apayao-association are involved with SECAL and Community Forestry Program in which community members are contracted to plant rattan tree species. The Cagayan association asks its member gatherers each year to plant 625 seedlings occupying about 7 ha of the harvested area. In Palawan, NATRIPAL-member packet communities who hold the permit are required to clear 1 ha of land each year in order to plant about 4 000 seedlings. In Bukidnon, the association targets to plant 10 wildlings per 100 Im it harvests each year. It employs its own gatherers and other people in the village for nursery establishment and planting activities However, replanting is not strictly followed by most private permittees They would. rather pay the special deposit in full amount and not withdraw this money because they believe DENR officials do not monitor replanting activities and nurseries established. This was also reported by association permittees . They are also willing to pay any bribe for violation of the regulation.

Problems and Constraints

In general, problems are socio-economic, technical, financial and institutional in nature and highly interrelated and policy cuts across these areas. In harvesting the gatherers still use traditional methods (use of bolo, transport by food and horse/carabao, very distant travel) which, apart from being tedious, might also destroy immature rattan. First-stage processing used by the gatherers is also very crude and limited (scraping sun drying/smoking during the rainy season). The gatherers do not have the required facilities or know-how for semi-processing (only manual sorting and grading methods are used, storage, and preservative techniques are lacking) and consequently, can neither ensure the quality of the poles they collect nor improve their income. Even at the manufacturers level, particularly the small firms, simple tools equipment and manual labour are much employed. Machines are very costly for them to semi process their poles and technical knowledge on the use of these lacking .

Financial problems are prevalent among gatherers because of the low income received. Small manufacturers and retailers have low sales and small operating capital. Most of these market participants also do not have to capacity to borrow from formal sources (such as banks) and have little knowledge of credit sources or how to improve their skills and income. The gatherers rely mostly on their financiers (associations or private traders).

Among factory workers and subcontractors in big manufacturing and exporting firms, the problems is the need to increase income levels. They also lack access to formal credit and technical assistance. Institutional and policy problems are those related to, apart from the ambiguity of policies, certain DENR's regulations such as: the non-payment of legal rates of forest charges and other fees by the traders, and their readiness to pay bribes instead; the non-compliance with replanting requirements; harvesting more than the AACs; use of other's permits; and laxity in monitoring and indifference of DENR officials.

In terms of income, the poorest market participants are the gatherers and workers. Small manufacturers and finished product retailers are also among the poor and disadvantaged groups; but being the exployers/owner-managers, they are in a better position compared with gatherers and workers.

In general, the poor socio-economic situation of the gatherers is related to their inability to secure access rights to forest resources, limited bargaining power with buyers, lack of technical knowledge on value-addition and efficient production, and inadequate operating capital. All are related to the nature and implementation of polices and programs on access to natural resources, capital, markets, infrastructure development and technical assistance. Small rattan operators, including workers, face almost similar problems.

At the exporter's side, institutional support from government and trade associations are needed to address the pressing problems of increasing transport and material costs, high labour wages, product rejection owing to poor quality, and declining export markets.

Potential Interventions

Interventions should focus mainly on proper supply management and market development. Intervention goals should include equity, efficiency, empowerment of disadvantaged groups in particular, employment and sustainability.

Interventions for problems related to technical aspects at the gatherer's level include improvement of harvesting methods, trainings/seminars on pole preservation, proper sorting and grading systems, development of proper storage facilities. At the manufacturer's level, exposure of small firms to production and other operations in large firms, product quality improvement, provision of technical and financial assistance and market information, and market linking with large-scale operators are needed. These require cooperation from agencies like DENR, NGOs, financing and research institutions (banks, DTI, FPRDI, ERDB), and coordination with support from trade associations and the concerned agencies. Interventions to meet financial needs include strengthening the gatherers and their associations/small firms' associations and cooperative, and assisting in availing of credit with less stringent procedures.

Institutional interventions highlight the need to review and assess existing policies of DENR regarding forest charges, AACs and transport requirements, improvement in its monitoring system, and imposition of penalties on illegal practices. The local government unit's participation is needed in improving the infrastructure for better transport of raw materials. For large-scale firms, interventions required are for product quality improvement and wider

market opportunities. For their workers, there is a need to improve their performance and income by improving their skills and productivity, with the support of their companies. A nation-wide effort to sustain the supply of raw materials is needed. This calls for the active participation of large exporting firms, private plantation companies and the research arm of the government in carrying out proper supply management of the resource through developing rattan plantations and extending research activities. Policy cuts across all these aspects; thus, there is a need to streamline some policies on rattan as a whole, as well as for continuous consultations and follow-up on recommendations if workshops conducted.

Resource management

Consistent with Executive Order (EO) 263, CBFM seems a viable and rationa l approach to raw material supply management for at least three reasons:

1. Communities comprising the disadvantaged group who will get tenuria1 security will be involved;
2. Operation need not be large-scale, which requires high investment as in the case of large plantations; and
3 Communities need not be entirely dependent on rattan harvesting since they will have access to other NTFPs.

The last mentioned aspect is important to reduce pressure on the rattan resource base. The major issue, however, relates to the availability of support services for the communities to respond to the challenges of the new system and associated responsibilities. Support for the communities should include technical (harvest to post harvest), financial (for running business operations) and institutional (community organizing and re-orientation) assistance. Institutional strengthening is important for DENR to address policy streamlining in light of new developments, and thrusts and implementation problems. Non-ICC permit holders, including manufacturers, can still engage in plantation development with the involvement of local people. More coordinated research effort is needed to build up the information base for plantation development, considering the limited plantation experience in the Philippines.

Market development

There is need for product and market diversification to sustain strong demand for rattan products. Manufacturers must continue to be innovative and offer new product designs and explore new markets, including the domestic market. The latter appears to be steadily growing and can be further developed. Assistance, particularly to small operators, for greater access to technology, markets, information and capital will allow them to expand operations and provide greater value to their products. Marketing and value addition should likewise be integrated in CBFM. A program for skills and productivity improvement for factory workers and subcontractors will increase their income.

3 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study brings into focus the following:

1. Price differential for large diameter poles from the gatherer's to the trader's level is large. Gatherers are the ones who receive the lowest share, about 25-36% of the trader's price for both pole diameter sizes. In terms of product value distribution, the gatherer's contribution to the product share is only 521% while the bulk is attributed to exporter (63-87%) and traders (8-16%). The major cost component for traders is transport costs, while the inputs comprise mostly the manufacturer-exporter's costs.

2. Functions of the market participants are highly interrelated and the sustainability of the rattan sector is dependent on the performance of all. Gatherers deliver their raw materials to associations and traders, while the traders supply to the manufacturers and exporters. The efficiency in the performance of each is highly affected by the technical and institutional problems within the marketing system such as: the inadequacy of transport, storage facilities and preservative treatment; difficulties in material transport caused by the need for bribing; illegal activities like not paying the legal charges; and overharvesting/ exceeding AACs. These contribute to decrease the resources, increase the costs and reduce the competitiveness of products.

3. The gatherers, workers, small-scale manufacturers and finished product retailers rank lowest in terms of land, machinery and equipment ownership and workforce availability, and have the least access to technology, information and financial resources. Small-scale manufacturers and finished product retailers perceive a poor market prospect for the rattan industry because of their limited markets.

4. Corollary to the above, these market participants are the most disadvantaged in terms of income distribution in the sector. An average family of five members earns less than P36 OOO/year, which is below the poverty threshold of P7 212 per capita. Although ICCs are given access to rattan resources, value addition and income generation are much hampered by poor access to non-rattan resources.

5. Rattan production system in the Philippines is extensive and highly extractive. All domestically produced rattan comes from natural forests. Unfortunately, concerted plantation development efforts are inadequate. Although the government undertakes a contract reforestation project nation-wide, the extent of its success is still unknown and information on its status inadequate. The mandatory replanting activities are not being followed by the licensees. Two large corporations have established and are managing rattan plantations. However, their long-term benefits remain to be determined. The viability of the industry is threatened by declining raw material availability manifested in higher prices, growing pole imports and declining foreign exchange earnings from rattan products.

6. The problems affecting rattan production and marketing system are socio-economic, technical, financial, and institutional in nature, with policy cutting across all these areas. As these are interrelated, interventions require a holistic approach that addresses concerns of both suppliers and demanders of raw materials and finished products. CBFM may be a promising strategy to raw material supply management but should have strong policy and institutional support for providing communities access to non-rattan resources. Market development (domestic and foreign) is essential to sustain demand for finished products, and support for small operators will address the poverty problem. Aside from these, various program components — such as community organizing, plantation development/enrichment planting, market development and linking, skills development for post-harvest and manufacturing, credit support for trading and manufacturing, managerial assistance for business operations, research and policy, extension services and infrastructure-are recommended.

Recommendations

Based on the results of the study, a Rattan Development Program (RDP) with a strong research component is recommended. The program rationale, goals, components and implementing strategies are outlined below.

Rationale

The Philippine rattan sector is composed of many interrelated participants that include gatherers, traders and processors of raw materials, and manufacturers and traders of finished products. Raw material production employs an extensive and extractive method largely dependent on rattan growing naturally in forests. The raw material output is entirely absorbed by the manufacturing subsector, which produces premium quality products for the international market and generates more than US$2OO million annually for the country (the value for products going to the domestic market is undetermined).

The increasing requirements of the manufacturing industry, coupled with rapid deforestation in the country, are creating raw material problems for the sector. Although the industry appears resilient and has adopted appropriate market and product development strategies, its long-term sustainability is threatened by the growing competitiveness of other countries, which have an adequate resource base and are keeping pace with product development technologies.

Among dependant people numbering about 4 million, the gatherers, labour force and small firms appear to be those who will be most adversely affected by these unfavourable developments. Any fall in the industry's competitiveness will be translated into losses of income and employment for these people. Also, the much needed foreign exchange that supports the country's agro-industrial development efforts will also suffer.

A research and development program for the rattan sector is needed to support the following thrusts of the Philippine government:

1 Sustainable development of the country's natural resources;
2 Poverty alleviation for the most disadvantaged groups; and
3 Rural area-based, employment-oriented, agro-industrial development strategy.

Goals

The RDP for the Philippines will aim to support the sustainable development of the industry, and improve the socio-economic situation of dependent groups, particularly the most disadvantaged. The Specific objectives will be:

1 Promote rattan plantation development and sustainable use of existing stocks of rattan resources;

2 Maintain the country's competitiveness in product development in the international market and explore/develop the growing domestic market;

3 Institutionalize strong research-extension linkages;

4 Improve the quality of life of dependent disadvantaged groups through support services covering credit, markets, technical assistance, information and infrastructure; and

5 Provide inputs to policy-making in the rattan sector.

Implementing strategy

The RDP strategy should be consistent with:

1 The policy framework as stipulated in EO 263 adopting CBFM as the national strategy for the sustainable management of the country's forest resources;

2 Basic principles of the Philippines 2000 and the Social Reform Agenda of people empowerment and participation of forest communities in the protection and management of the forest ecosystem; and

3 Provisions of the Philippine Master Plan for Forestry Development (MPFD), which outlines recommended courses of action for managing forest resources and improving the socio-economic conditions in the uplands and forest areas.

CBFM focuses on the direct participation of local communities in the protection, management and sustainable development of forests and forest land resources with the assistance of (a) DENR, being the major forest administration agency, (b) NGOs/AOs for technical assistance, and (c) local government units (LGUs), including research and other government agencies, in providing valuable support services. Community organizing is a primary thrust for ensuring unity, cohesiveness and full participation of the members of the forest communities involved. Tenurial security for the community is through the grant of a 25-year Community Forest Management Agreement (CFMA), renewable for the same period. CFMA is meant to provide incentives to communities to undertake the required forest management activities and reap associated benefits.

CBFM (formerly Community Forestry Program — CFP) has been in pilot implementation during the last 3-4 years, prior to the issuance of EO 263. Program support is being provided through the Natural Resources Management Program (NRMP), funded by USAID and currently in its second phase.

CBFM supports the development of all forest resources contained in a given community. Area selection of the proposed RDP may involve:

1. Sites (municipalities or groups of barangays) which are largely rattan-based or which have potentials for development of rattan resources in such communities and are not presently CFP sites; or

2 Present CFP sites which have not received adequate support.

The RDP must also have strong research linkage with institutions, such as UPLB, FPRDL, and regional research centres. The research agenda must be consistent with the needs of the RDP.

The proposed RDP could be part of existing IFAD projects (e.g. Cordillera Highland Agricultural Resources Management or CHARM Project and Rural Micro-Enterprises Finance Project, both co-financed by the Asian Development Bank) or an entirely new project considered for funding the implementation.

Program components

1. Community Organizing: With the support of DENR, NGOs and GOs, communities are introduced and oriented to CBFM.

2. Plantation Development/Enrichment Planting: Aside from CBFM, rattan operators are encouraged to initiate plantation development through various lease arrangements on the use of public lands with DENR.

3 Market Development and Linkages: With support of NGOs, GOs and trade associations, associations are to be formed for small manufacturers; technical assistance, capital and machines are to be provided; and market linkages with large-scale operators are to be established through the associations. For large-scale operators, continuing market and product quality development efforts are to be strengthened with the assistance of GOs and trade associations.

4 Skills Development on Post-harvest Handling and Manufacturing: For ICCs and gatherers, training on improved harvesting system through seminars; and development of simple but effective harvesting tools, preservation, sorting and proper storage facilities, to be conducted in coordination with NGOs, research institutions and DENR. For in-houses/factory workers and subcontractors (including women and youth), training for skills development for quality and productivity improvement through seminars organized with the support of large operators.

5 Credit Support for Trading and Manufacturing: For ICCs and gatherers, strengthening of associations and development of financing schemes through cooperative development and improved management. For factory workers and subcontractors, provision of capital with support of large-scale operators and health protection facilities.

6 Managerial Assistance in Business Operations: For associations and small-scale operators, development of their respective associations/cooperative development and training for improved management system.

7 Research and Policy: Development of research programs (growth and yield, plantation establishment, proper management, benefit-costs) linked to extension activities of new

plantations and streamlining of policies; closer coordination between research institution (e.g., ERDB and DENR personnel), communities and private plantation owners; continuous consultative efforts and follow-up on recommendations of workshops; and active participation of agencies and market participants involved.

8 Extension Services: DENR field personnel's close monitoring and extension services on all CBFM projects and plantation development activities.

9 Infrastructure: Improvement of road networks for transport of raw materials from trader's stockyard in the province to the city with the help of LGUs; streamlining of procedures by DENR to facilitate movement of raw materials and finished products at the lowest cost possible in coordination with shipping lines, traders and truckers. At cutting area, provision of access roads and trails with support of the whole community.

FURTHER READING

BETP (Bureau of Export Trade Promotion / International Group). 1994. Furniture industry sector profile. Philippine-German Export Development Project, BETP, DTI, Makati City, the Philippines.

FMB (Forest Management Bureau). 1994. Pehilippine forestry statistics. FMB, DENR, Diliman, Quezon City, the Philippines.

Kilmer, G.D. 1994. Rattan processing in the Philippines: and analysis of the subsector.

Appropriate Technology International, Washington, D.C., the United States.

Lancion, C.M. 1995. Fast facts about Philippine provinces. Tahanan Books, Manila, the Philippines. 176 pp.

NSO (National Statistics Office). 1993. Philippine statistical yearbook. NSO, Manila, the Philippines .

National Coordinating Office, DENR. 1994. Policies, memoranda and other issuances on the National Forestation Program. Vols. IV and VII. DENR, Diliman, Quezon City, the Philippines.

Pabuayon, I.M. and Espanto, L.H. 1995. Bamboo and rattan sector database. Final Report submitted to INBAR. UPLB, College, Laguna, the Philippines.

Planning and Policy Studies Office, Policy Studies Division. 1990 and 1993. A compilation of DENR policy issuances. DENR, Diliman, Quezon City, the Philippines.

LIST OF ACRONYMS

BETP	:	Bureau of Export Trade Promotion
CFIP	:	Chamber of Furniture Industries of the Philippines
CITEM	:	Center for International Trade Expositions and Missions
DENR	:	Department of Environment and Natural Resources
DTI	:	Department of Trade and Industry
ERDB	:	Ecosystems Research and Development Bureau
FPRDI	:	Forest Products Research and Development Bureau
NATRIPAL	:	Nagkakaisang Tribung Palawan
NFDO	:	National Forestation and Development Office
PBSP	:	Philippine Business for Social Progress
PCCI	:	Philippine Chamber of Commerce and Industries
PhilExport	:	Confederation of Filipino Exporters Foundation
SECAL	:	Sectoral Adjustment Loan
UNAC	:	Upland NGO Assistance Centre
UPLB	:	University of the Philippines at Los Banos