



Above: Simple processing techniques for rattan can reduce presently high deterioration losses. Below: Labour-intensive and rural, the rattan industry seems well-suited to developing countries.

Photos: John Dransfield
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FEATURE

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RESEARCHERS COME TO THE HELP OF THE RATTAN INDUSTRY

by MICHAEL GRAHAM

Rattans, climbing palms that grow throughout Southeast Asia, are such an important component of rural life in the region that some people rate them as the most important forest product after timber. In spite of this, however, and the fact that the international trade in rattans has grown into a multimillion dollar business, rattans have often been regarded as minor forest products, and have, until recently, received but passing attention from researchers.

During the past five years a surge of interest in rattans and rattan products has brought about a healthy trend toward organized research into some of the more important aspects of rattan culture and utilization. This has proven fortunate as the disappearance of large tracts of more easily accessible forest, uncontrolled rattan collection, improper handling and treatment, and increasing demand threaten to destroy this industry.

By sponsoring a regional workshop that brought together government and university researchers and trade representatives, in Singapore, to discuss Rattan Research Priorities in Asia, the International Development Research Centre (IDRC), of Canada, hoped to enhance the ability of this labour-intensive, rural-based industry to contribute to the socioeconomic development of the region's rural areas.

Rattans, palms of the sub-family Lepidocaryoidae, display a tremendous diversity. Stem diameters range from 3 mm to over 20 cm, and they vary in length from a few metres to over 200. All species share some characteristics, however. Two of the most important, because they are

major hindrance to rattan collection, are the characteristic spiny leaf sheaths and the climbing organs that allow the plant to attach themselves to the trees that both support them and allow them to reach the sunlight in the forest canopy. These long whip-like organs with their attached reflexed thorns make rattan collection very unpleasant work. Not only are they a constant source of irritation, but because they anchor the rattan so firmly in the trees, it requires much hard pulling -- often by three or four men -- to dislodge the canes.

The cane is generally cut 30 to 200 cm above the ground and then pulled from the tree. Any part that cannot be freed is normally cut off and left. Soon after the rattan is pulled down, it is cut into pieces of varying lengths depending on the species, the size of the rattan, its intended use, the specifications of the buyer, or to suit the convenience of the collectors.

After the canes have been transported to a central depot, the leaf sheaths adhering to the cane and the silicified outer skin are removed. The simplest but most time-consuming method involves twisting the cane by hand and rubbing it with fine sand, steel wool, coconut fibre or sack cloth. The canes are then dried for about a week to prevent or reduce blemishes and to prevent deterioration. Finally, they are transported to the exporter who sorts the rattan and rejects the cane of unacceptable quality -- usually 30-40 percent.

Further processing involves steeping the canes in a mixture of diesel oil and coconut or palm oil. This step is thought to rid the canes of unwanted gums and resins as well as moisture. The rattan is then sun-dried for 7-12 days.

To preserve the canes exporters wash them in a hypochlorite solution and fumigate them with sulfur dioxide. The rattan is then safe from deterioration for many years, and ready for processing into baskets, mats, furniture and other products.

During the workshop, grave concern was expressed by the representatives from Indonesia, Malaysia, the Philippines, Thailand, India and Sri Lanka -- all producing countries -- that, without management, the constant exploitation of this important resource might lead to the collapse of the industry. In fact, processors -- often located in non-producing countries like Hong Kong and Singapore -- are already experiencing difficulty in obtaining adequate supplies of large cane species.

The lack of research on rattans in the past points to the tremendous scope for systematic research on almost every aspect, from the resource itself to its final utilization. The need for research is heightened by the potential benefit the industry can bring to rural people, particularly as the popularity of the finished product has boomed.

The participants, anxious to avoid possible collapse in the industry, gave highest priority to areas of research that would be of immediate relevance. Three broad areas requiring attention were identified: the conservation of existing stocks; the standardization of research procedures; and extension and training.

Urgent attention should be given, it was felt, to the complete reappraisal of the legislation governing the exploitation of rattans. To date, rattans have not been included in forest management plans, and until they are, chances of conserving existing stocks are minimal. With the rapid disappearance of forests throughout the region, rattans -- especially those of economic importance -- are a severely threatened plant group. Serious consideration must therefore be given to their strict protection in nature reserves, and the establishment of gene pools in arboreta and botanical gardens. At the same time, rational control of exports of raw rattan would help to control exploitation while promoting local rattan industries.

Immediate gains can accrue to these local industries with the introduction of standardized grades and specifications for rattans, and the dissemination of existing information on better methods of processing practiced in other countries in the region. The introduction of improved

processing techniques and the training of rattan workers will not only benefit rural communities, but will have a positive effect on the trade as a whole.

Three main areas requiring investigation were identified: large diameter rattans, especially those greater than 25mm; small diameter rattans, particularly the most commonly used; and their utilization.

The difficulty in obtaining large diameter rattans places high priority on several areas of research. There is a need for an extensive regional survey, involving the collection of botanical specimens and samples for commercial testing. A complete reassessment of the qualities and potential of large diameter rattans, as determined by commercial testing of cane samples, is also required. Using the information gained in the national survey and from the results of the commercial testing, it should be possible to identify those large diameter rattans with the most potential. Silvicultural trials could then follow and the most promising species used to establish pilot plantations.

Where species with silvicultural potential have already been identified, research can be carried out immediately. It is very important, however, that the presence of an already promising species not preclude the survey work which could lead to the identification of others with greater potential.

Small diameter rattans are still relatively plentiful, thus there was a different emphasis in the research priorities drawn up by the participants. High priority areas included a socioeconomic and management study of the existing smallholder rattan plantations in the Barito Selatan area of Central Kalimantan, Indonesia, as a basis for the immediate establishment of plantations of these species elsewhere. Two related areas were the analysis of the growth of these rattan species in order to be able to predict their levels of production, and the establishment of reliable seed sources.

Priorities in rattan utilization were also established. High priority was given to the improvement of handling methods to reduce wastage and the effort involved in collection, and to the investigation of the scientific basis for current processing techniques so that they may be better understood, and perhaps improved and standardized.

The extension to rural communities of improved methods of harvesting and processing were also felt to be important. This would have the dual effect of increasing the economic benefits to the primary producers in the rural areas while improving the quality of the cane.

Utilization research can only be successfully carried out in close cooperation with the rattan trade, however, as product improvement is normally beyond the scope of research institutes. Close cooperation could lead to mutual benefits as anatomical studies, for example, could provide excellent projects for short-term research by the universities in the region.

In general, emphasis on increasing personal contact and the exchange of information will lead to a better understanding of regional problems, and ultimately aid in the development of this important rural-based industry.

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Michael Graham, technical editor with IDRC's Communications Division, attended the workshop in Singapore. The proceedings will be published by the IDRC later this year.