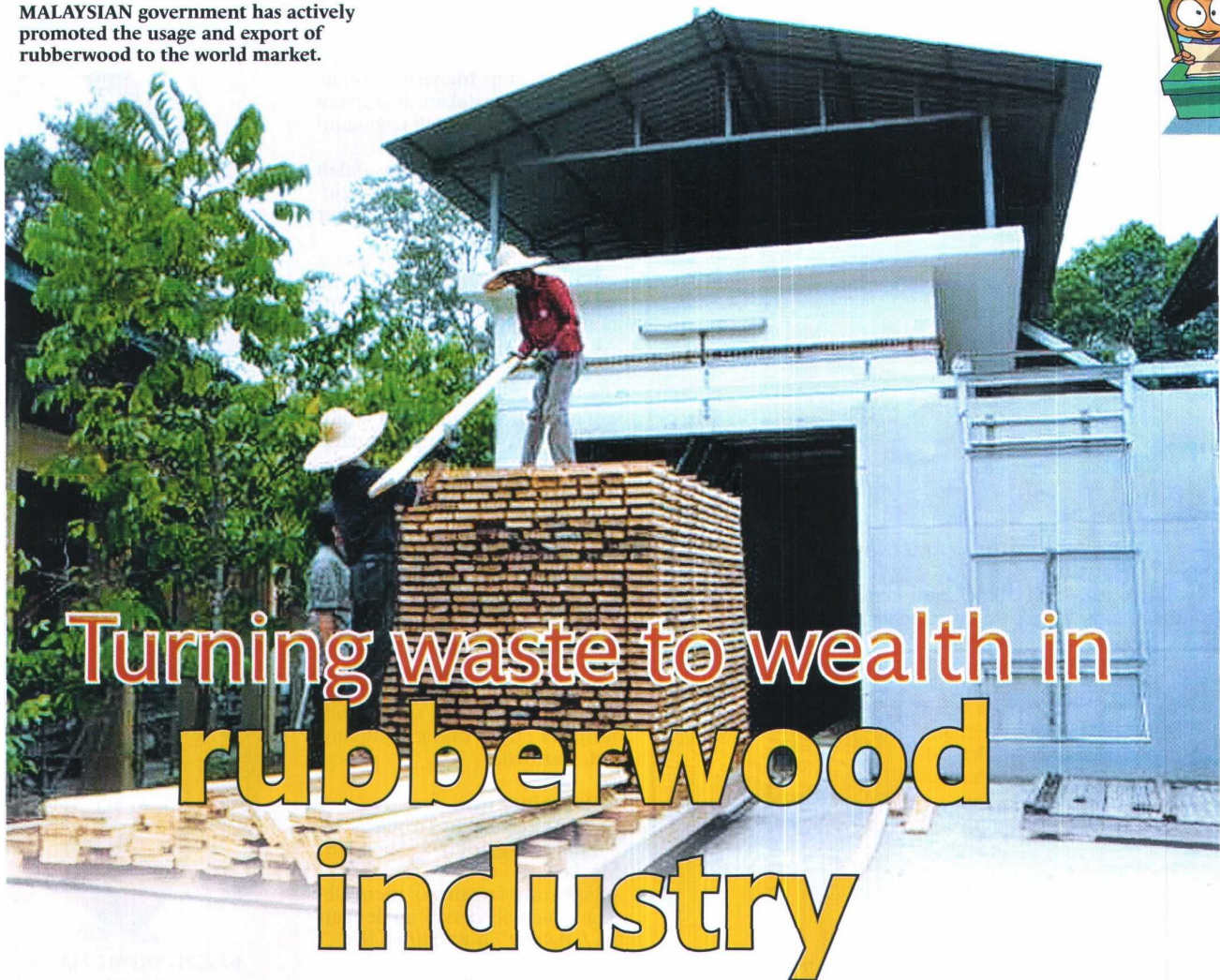
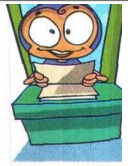


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MALAYSIAN government has actively promoted the usage and export of rubberwood to the world market.



Turning waste to wealth in rubberwood industry

By **NOOR ASMALIZA**
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role in the development of the rubberwood furniture industry.

THE Academy of Sciences Malaysia is awarding the Mahathir Science Award 2009 to the Forest Research Institute Malaysia (FRIM) in recognition of its

Rubberwood as an agro waste.....
 Three generations of Malaysians, from 1900 to 1975, knew of rubberwood only as stacks of cheap and mouldy firewood in their backyards. Rubberwood was left in various stages of decay while waiting to be chopped up and used as domestic fuel. The wood was available in large quantities because continuous replanting which was necessary for the sustenance of the rubber industry and for export.

ever, rubber growers had to pay for old rubber trees to be felled and carted away. This represented a substantial financial burden particularly to small farmers, who formed the majority of rubber growers.

Rubberwood as a substitute for tropical hardwood - an absolute nonsense?!

When the idea was first mooted that rubberwood could be used as a substitute for primary forest timbers, people thought that was the crankiest of all ideas. Initially, the sceptics were proven right. The logs from rubber trees were undersized and of poor quality compared to jungle logs. The first attempts to produce furniture from rubberwood failed disastrously because of fungal and insect attack. It turned out that rubberwood has an extraordinarily high content of starch in the wood.

However, recognising the potential of rubberwood, in 1978, the then Ministry of Primary Industries established a Rubberwood Research Committee to co-ordinate research in the utilisation of this timber. Extensive and intensive research into rub-



THE older practice was to just burn the logs at the end of the tree's latex-producing cycle.

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THE wood of felled rubber trees was traditionally used for fuel.



RUBBERWOOD furnishings are very solid and smooth.



THE Malaysian rubberwood-based industry has produced a wide range of furniture products

berwood, led to the successful discovery of preservation, processing and drying techniques by the Rubber Research Institute of Malaysia (RRIM) and FRIM. Through breeding and selection, RRIM 2000 series latex-timber clones were produced – these were excellent yielders of both latex and timber. The government has, through the Malaysian Timber Board (MTIB), actively promoted the usage and export of rubberwood to the world.

The great transformation in the natural rubber industry...

Tan Sri Dr Salleh Mohd Nor, the then Director of Forest Research Institute (FRI) mobilized a team of researchers in FRI to undertake intensive and dedicated research. As team leader, he sourced for the funds to support the research and coordinated the efforts of the team.

The members of the team comprised Hong Lay Thong (wood preservation), the late Ho Kam Seng (sawmill processing), Sim Heok Choh (wood processing), the late Dr Tho Yow Pong and Daljeet Singh (entomology).

It took years of team research to develop ways to handle rubberwood properly, through a combination of techniques in wood seasoning, preservation, precision cutting, glueing and finishing, based on knowledge of the structure and properties of rubberwood. These technologies developed through R&D have been disseminated to the local entrepreneurs and industry alike through seminars and training courses on rubberwood from time to time.

Recognition from international community...

As more and more favourable reports were published, market opinion began to change and old prejudices were discarded. In about twelve years, rubberwood was well

on its way to become the timber of choice for a new furniture and wood-composite industry. The entire body of knowledge about rubberwood was published in many individual research papers dealing with specific topics such as wood treatment, pest control, mechanical and engineering properties and timber usage.

The growing body of new information on rubberwood was brought together at the first Rubberwood Seminar in June 1982. Then in 1995, FRIM published a complete synthesis in the book entitled Rubberwood - Processing and Utilization. In this way, Malaysia's rubberwood experience was made available to rubber growers everywhere. The experience gained through the years of R&D has indeed made FRIM a global centre of excellence in rubberwood research.

Kudos, FRIM!

FRIM developed clever technical solutions to problems in the tropics. They've been particularly successful in developing once low-valued rubberwood into manifold high quality products. Their experience and thoroughly professional demeanor have enabled them to be influential in the rubberwood industry.

Rubberwood research has few equals in terms of economic and social impact: the wood furniture industry has created a tremendous number of job opportunities and has elevated Malaysia to be one of the major exporters of wood furniture in the world. Currently, there are 1578 furniture mills in Malaysia and approximately 70% of wood furniture products are manufactured from rubberwood.

A new era has been opened to convert waste to wealth: the rubberwood industry is currently estimated to be worth over RM6 billion annually while the furniture industry itself is worth more than RM4 billion an-

nually. There is no room here to list all the accomplishments; it is an impressive list!

Characteristics of Rubberwood:

General Characteristics: The heartwood was whitish when freshly cut, becoming light brown with a pink tinge on exposure. It was not distinct from sapwood. The texture is moderately coarse and even; grain straight; has a characteristic sour smell; luster low

- **Weight:** Basic specific gravity (oven dry weight/green volume) 0.46 to 0.52; air-dry density of 35 to 40 pcf.
- **Working Properties:** The timber is reported to saw without difficulty and planes easily to a smooth surface; tends to split in nailing.
- **Durability:** The timber is perishable and stains readily. It is also highly susceptible to borer and termite attack as well as powder-post beetles.

Source From:

Chudnoff, Martin. 1984. Tropical Timbers of the World. USDA Forest Service. Ag. Handbook No. 607.

Facts and Figures

Common name:

Para Rubber tree

Scientific name:

Hevea brasiliensis

Family:

Euphorbiaceae

Distribution:

Amazon Basin, but widely planted in Southeast Asia and West Africa for rubber production.