



Nyi Nyi Kyaw (Autor)
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(*Tectona grandis* Linn.f.) in Natural Forests of
Myanmar**

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Germany

Telefon: +49 (0)551 54724-0, E-Mail: info@cuvillier.de, Website: <https://cuvillier.de>

1 Introduction

1.1 Teak in Myanmar

Teak (*Tectona grandis* LINN. f.), a species of world wide reputation as paragon among timber trees, belongs to the family Verbenaceae and is distributed predominantly in tropical and subtropical regions. It is indigenous to only four countries in South and South-East Asia, and dense natural forests with big and beautiful admiralty quality teak have degraded and shrunk so rapidly that at present they are confined only to Myanmar and to some extent to India (GYI and TINT 1998). Thus, natural grown teak has now almost become an endangered species.

Teak is one of the most important hardwood species planted extensively in several countries in the Asia-Pacific region. Being indigenous to the region, substantial experience has been gained in the management of natural and man-made stands of teak. The reasons for the relatively wide use of teak, where quality hardwoods are planted, are its ease of propagation, establishment and management, as well as its excellent wood quality. It is one of the most valuable multi-purpose timbers of the world. Its properties include:

- attractiveness in colour and texture
- strength with lightness
- durability
- dimensional stability
- non-corrosion
- ease of working and seasoning and
- termite, fungus and weather resistance.

A number of teak provenances of different girth sizes, stem forms, phenological characters and timber properties are found in different parts of India, Myanmar, Thailand, Laos and Indonesia (TEWARI 1992). These differences were tested through an international network of provenance trials, which probably provides the best

available information on general provenance variation. Early international trials in evaluation of teak provenances are described by KEIDING and KEMP (1977), WHITE (1991), who recommended the provenances Konni (India), Bangari (Indonesia), and Ban Chan Pui (Thailand). Reports on provenance trials from India, Thailand and Indonesia indicated that national provenances performed best. Myanmar provenances were not included in those series of international provenance trials implemented by DANIDA, and Myanmar trials have been examined in one country trial.

Even though teak once covered a large percentage of India, Thailand and Myanmar and a small area of Laos, there is now a very restricted distribution in each of these countries except Myanmar. In Myanmar, natural teak forests have been managed for many years with sustained timber production as the primary objective. Myanmar is the only country producing large teak logs from natural forest, which attract a price advantage compared with smaller logs from plantations and which is likely to continue in the foreseeable future. However, the area and quality of teak forests are declining with the increase in population and greater pressure on forested land for conversion to agricultural land and illicit cutting. Forest resources, which are replenishable, should be managed so as to be in line with the current situation. Therefore, the management system needs to be modified in order to suit the present status of stand structure, composition, and growth of teak forests. The study is intended to provide information to designate as a portion for future sustainable management of natural teak forests of Myanmar.

Myanmar, a country with a total area of 676,577 km², is situated in Continental South East Asia, lies between 9° 53' N and 28° 25' N latitudes and 92° 10'E and 101° 10'E longitudes. Approximately 75% of the country lies within the tropics. Consequently, it has a wide range of temperature and rainfall, which is distributed over 5 months of the year, ranges from less than 700 mm to over 5000 mm. All these contribute towards a wide variety of environmental condition and diversity in the types of forests that exist within the country.

Myanmar has a forest cover of about 33 million hectares, which is almost half of its total land surface area. The forest cover consists mainly of natural forests, about 45% of

which are teak bearing forests. The forest resources, though scientifically managed since 1856, have been decreasing gradually both in extent and quality due to increased population pressure and consequent rising demands for timber for domestic and foreign uses. Annual production of teak is estimated to be about 450,000 m³ (1991-2000 average) in the form of logs and sawn timber, of which are mostly from natural forests. About one-quarter of the total foreign exchange earning of Myanmar comes from export of timber, about 90% of which is derived from teak (HTUN and HLAING 2001).

Although there were plenty of teak trees in the natural forests in various densities, teak plantations were established in a compensatory way up to 1962. Starting from early 1970s, block plantations were formed in the areas with degraded forests and poor stocking of teak and other valuable commercial species. Up to 2000, 293,782 ha of teak plantations have been established, i.e. 41% of total plantations formed in Myanmar.

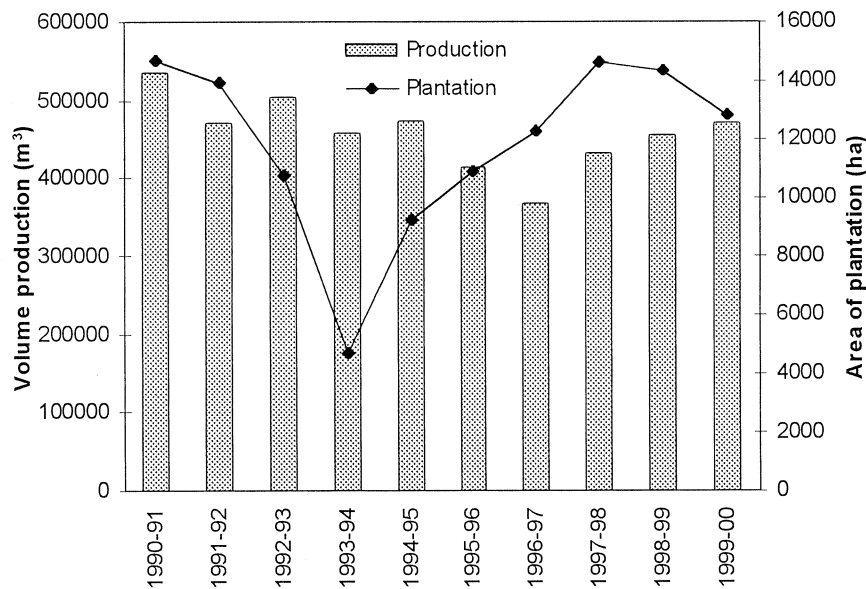


Figure 1.1 The annual production and plantation establishment of teak in Myanmar (FOREST DEPARTMENT 2000; HTUN and HLAING 2001)

In 1997, the Forest Department has launched a special teak plantation programme, which incorporates new features such as adoption of 40-year rotation, participation of interested and relevant communities with increased inputs, etc.