

**KOMODITAS: AREN
PROQUEST 2010**

PLANT ECOLOGY (5 JDL)

Diversity and conservation of palms in Andaman & Nicobar archipelago T N Manohara, E L Linto, C Renuka.

Biodiversity & Conservation. London:Dec 2010. Vol. 19, Iss. 13, p. 3655-3666

Abstract:

The palm resources of Andaman & Nicobar Islands are quite rich and unique with a substantial number of endemic species. Andaman & Nicobar Islands, falling within the Indo-Burma region constitute "hottest hotspot" of global biodiversity with an exceptional concentration of endemic species, but are experiencing alarming loss of habitat. The flora and fauna of Andaman group of islands show striking dissimilarities with that of Nicobar group. Palms such as *Arenga pinnata*, *A. westerhoutii*, *Calamus baratangensis*, *C. basui*, *C. longisetus*, *C. palustris*, *C. viminalis*, *Corypha utan*, *Daemonorops aurea*, *D. kurziana*, *D. manii*, *D. rarispinosa*, *D. wrightmyoensis*, *Korthalsia rogersii*, *Licuala spinosa*, *Phoenix andamanensis*, and *Pinanga andamanensis* which occur in Andaman groups of islands are absent in the Nicobar group of islands. While *Bentinckia nicobarica*, *Calamus dilaceratus*, *C. nicobaricus*, *C. pseudorivalis*, *C. semierectus*, *C. unifarius*, and *Rhopaloblaste augusta* are confined to the Nicobars, but seldom found in the Andamans. *Areca triandra*, *Calamus andamanicus*, *Caryota mitis*, *Korthalsia laciniosa*, *Licuala peltata* and *Pinanga manii* are widely distributed in both the group of islands. There is a considerable reduction in their natural population probably due to habitat destruction, low regeneration, and inability to compete with other plants. In addition, calamities like tsunami caused irrecoverable loss of valuable genetic diversity of palms. If conservation efforts are not undertaken, many of the existing species, if not all, are likely to disappear within a foreseeable future. There is dire need for habitat preservation and for in situ conservation. Appropriate conservation strategies should be taken to prevent further genetic erosion of these species and to protect these invaluable plant resources. [PUBLICATION ABSTRACT]

Traditional perennial crop-based agroforestry in West Java: the tradeoff between on-farm biodiversity and income /Satoru Okubo, Parikesit, Koji Harashina, Dendi Muhamad, Oekan S Abdoellah, Kazuhiko Takeuchi.

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Agroforestry systems have been re-evaluated with a renewed scientific interest as appropriate models for achieving sustainable production while maintaining planned and associated biodiversity and agroecosystem functioning. Traditional bamboo-tree gardens in West Java are known to play substantial ecological and socioeconomic roles. In this study, we attempted to elucidate the relationship between income generation and biodiversity by studying 83 bamboo-tree gardens that varied in species

composition and degree of commercialization. We conducted a survey of the vegetation and interviewed the owners or managers of each plot. We identified 42 planned and utilized species and 19 associated non-use species. Eight vegetation groups were identified by two-way indicator species analysis (TWINSPAN), each of which varied in individual densities of different utilization species types, Simpson's diversity index, management intensities, and potential annual gross income. The group with the highest potential income generation was dominated by clove trees (*Syzygium aromaticum*); however, this group also had a lower level of diversity and higher levels of management intensity than the other groups, but all of the pairwise groups were not significantly different. About 60% of the villagers used at least some fuelwood as a domestic energy source, and almost all of them collected fuelwood from bamboo-tree gardens regardless of ownership. There were no significant differences in density of potential fuelwood species among the vegetation groups. There were significant positive correlations between income and most management activities. The regression model between gross income and Simpson's diversity index with the best fit was a unimodal curve, which strongly suggests that maximum diversity can be conserved at an intermediate level of income. Nevertheless, this intermediate level of gross income is probably not adequate as the primary source of income for garden owners, although some gardens had the potential to achieve higher income levels with no decline in diversity. We suggest that maximizing individual density and multistratifying canopy layers could improve profitability within perennial crop-based agroforestry systems in West Java.[PUBLICATION ABSTRACT]

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Abstract:

Tropical botanical gardens have played an important role in the distribution, naturalisation and spread of non-native plants worldwide. Appropriate guidance relating to risk assessments of established botanical garden collections is often scarce. This paper uses the Amani Botanical Garden (ABG), Tanzania, as a case study to highlight appropriate methods to assess the risks posed by existing and future collections in tropical botanical gardens. Key considerations included field assessments of species status using accepted definitions of naturalisation, spread and invasion, distinguishing between intentionally and unintentionally introduced species, identifying taxonomic patterns in invasion status, assessing patterns in habitats colonised, and determining how knowledge of invasion elsewhere might be useful in forecasting risk. Out of the 214 alien plant species surviving from the original plantings in the early 20th century, 35 had only regenerated, 38 had locally naturalised while 16 had spread widely in the botanical garden. A further 16 species with unclear introduction records in the garden were also found to be naturalised. A greater proportion of introduced species were potentially invasive than might be expected from previous analyses of global floras. Overall, just over half of all naturalised and spreading species were also observed in forest fragments and edges. The proportion of species that had been recorded elsewhere as naturalised/invasive was significantly

related to their status in ABG, with 94% of spreading species and 79% of naturalising species being recorded as naturalised or invasive elsewhere, compared to 57% of species that were only regenerating and 49% of species only surviving. Recommendations for further risk assessments of botanical garden collections are discussed. [PUBLICATION ABSTRACT]

A revision of *Borassus* L. (Arecaceae) /R P Bayton.

Kew Bulletin. Norwich:2007. Vol. 62, Iss. 4, p. 561-585 (25 pp.)

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Rural Livelihoods and Burning Practices in Savanna Landscapes of Nusa Tenggara Timur, Eastern Indonesia /Jeremy Russell-Smith, Siliwoloe Djoeroemana, Josef Maan, Petrus Pandanga.

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Abstract:

Substantial attention has been given in recent years to forest and peatland degradation, transboundary haze, and biodiversity and economic impacts associated with major fire events in perhumid western Indonesia. Conversely, little information is available concerning underpinning conditions associated with burning practices and resultant fire patterns in other parts of the Indonesian archipelago, especially in markedly seasonally dry regions. As part of a broader study examining the patterning and drivers of burning in the monsoonal province of Nusa Tenggara Timur (NTT), the paper explores cultural, socioeconomic, biophysical, and, in discussion, political dimensions associated with landscape-scale patterns of burning at each of two village locations on the islands of Sumba and Flores. Assembled data illustrate that: (1) study villages are reliant on a range of subsistence agricultural activities, particularly annual food crops, livestock (especially pigs), and forest products; (2) while villages encompass mostly extensive areas of grassland savanna, proportionately most income/products are derived from limited areas of arable agricultural and very diminished forested lands; (3) despite this, considerable economic potential exists for developing certain tree products especially in agro-forestry settings, and more intensive livestock management; (4) these patterns are representative generally of surrounding regional agricultural landscapes. While burning is used as an essential

agricultural management tool in defined seasonal contexts in all study villages, the reality is that today much burning is unmanaged and uncontrolled, with attendant significant economic impacts. As for western Indonesia, underlying drivers of such behavior are multiple and complex, but pointedly include: rapid societal change; conflicts within and between villages, and between villages and regulatory authorities (especially the Forestry Department), over access to land and resources; and continued nonrecognition in national and provincial fire policy frameworks of the practical necessity for using fire (wisely and safely) in many agricultural contexts. It is axiomatic that, without effective fire management and a supportive policy environment, sustainable livelihoods development will continue to be elusive in fire-prone savanna landscapes of eastern Indonesia.[PUBLICATION ABSTRACT]

PESTS OF PLANTS (1 JDL)

A review of the issues and management of the red palm weevil *Rhynchophorus ferrugineus* (Coleoptera: Rhynchophoridae) in coconut and date palm during the last one hundred years /J R Faleiro.

International Journal of Tropical Insect Science. Cambridge:Sep 2006. Vol. 26, Iss. 3, p. 135-154 (20 pp.)

Abstract

The red palm weevil (RPW) *Rhynchophorus ferrugineus* (Olivier), a concealed tissue borer, is a lethal pest of palms and is reported to attack 17 palm species worldwide. Although the weevil was first reported on coconut *Cocos nucifera* from South Asia, during the last two decades it has gained a foothold on date palm *Phoenix dactylifera* in several Middle Eastern countries from where it has moved to Africa and Europe, mainly due to the movement of infested planting material. In the Mediterranean region, RPW also severely damages *Phoenix canariensis*. Currently, the pest is reported in c. 15% of the coconut-growing countries and in nearly 50% of the date palm-growing countries. Infested palms, if not detected early and treated, often die. However, palms in the early stages of attack respond to chemical treatment with insecticide. RPW has been managed in several countries employing an integrated pest management (IPM) strategy including the use of food-baited pheromone traps. Early detection of infestation in the field is important for the success of any RPW-IPM programme. Ideally, movement of planting material from infested plantations within the country and also from one country to another needs to be stopped. Wherever this is not possible, it is essential to implement strict pre- and post-entry quarantine regimes, wherein only pest-free and certified planting material can be transported. The existing pheromone-based IPM programme can be strengthened by intensifying the search for effective natural enemies, coupled with the introduction of resistance in palms to RPW. This article reviews the work done during the last 100 years on various aspects of RPW viz. life history, damage and symptoms of attack, seasonal activity, spatial distribution, host range, IPM and its main components, including trapping adult weevils and chemical control, besides biological control, host plant resistance and male sterile technique. [PUBLICATION ABSTRACT]

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