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| **refs itemname** | Book |
| **Bibliography** | Bourke, R.M. (1997) Management of fallow species composition with tree planting in Papua New Guinea, RMAP Working Paper (Resource Management in Asia-Pacific Program (Australia)) (5), 11 pages, Australian National University, Research School for Asian and Pacific Studies, Division of Asian and Pacific History, Canberra, ACT |
| **Abstract / Content summary** | In response to increasing population pressure and demand for food to feed pig herds, villagers are intensifying land use in Papua New Guinea (PNG). Managing the species composition of fallow vegetation is one intensification technique used. The most important species used is Casuarina oligodon. Minor species include Parasponia rigida, Schleinitzia novo-guineensis, Albizia spp. And Piper aduncum. Casuarina is a multi-purpose species grown throughout the highlands that provides timber for fencing, firewood and house construction. In four regions of the highlands, villagers transplant self-sown seedlings into food gardens towards the end of the cropping phase to enhance soil fertility. These grow to form dense stands of trees which dominant the fallows. About 1.3 million people plant some casuarina trees and about one fifth of these manage fallow species composition with casuarina. The technique is most commonly used over an altitudinal range of 1400-2100 m where slopes are steep (over 20o), the landform is hills or mountains, the lithology is sedimentary, vegetation is grasslands, and the annual rainfall is relatively low (2000-3000 mm). Land use intensity in these locations is very low to low. Limited soil analysis indicates that casuarina increases levels of nitrogen and carbon in the soil. In two of the four regions where casuarina is used most intensively, the practice has been adopted since the 1920s. In another, it has increased greatly since the 1930s. Pollen evidence indicates that casuarina planting increased after 500 AD in parts of the highlands. It is suggested that this represented limited planting to provide timber as nearby forest was depleted, but not widespread fallow management. It is hypothesized that the management of fallows by casuarina planting has been adopted more recently, probably over the past 150 years. It is concluded that there is potential for adoption of the technique in other locations in the PNG highlands. Many aspects of the tree and its use are poorly understood and deserve further systematic study. [Original abstract] |
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