

Nypa fruticans, a Weed in West Africa

Terry C.H. Sunderland
African Rattan Research
Programme
C/O Limbe Botanical Garden
B.P. 437
Limbe, Cameroon

AND

TUNDE MORAKINYO
Iroko Foundation
83–85 Prince of Wales Road
London NW35 3LY, UK

Nypa fruticans, the mangrove palm, was introduced into West Africa in the early Twentieth Century and is now becoming a serious weed.

The natural range of the mangrove palm, *Nypa fruticans* Wurmb, occurs from Sri Lanka and the Ganges Delta to Australia and the Solomon and Ryukyu Islands (Uhl & Dransfield 1987). However, the ability of *Nypa* to colonize areas outside its existing natural range has been reported from Trinidad (Bacon 2001), Panama (Duke 1991) and probably most extensively, West Africa (Zeven 1973). It is speculated that the source of the germplasm that has led to the establishment of colonies of *Nypa* in the Neotropics originated in West Africa (Bacon 2001), where it was introduced during the early and middle parts of the 20th century. Unlike in West Africa, the colonies of *Nypa* reported from the Neotropics are said to be somewhat localized and do not currently cover vast expanses of coastline.

Nypa in West Africa

Although *Nypa fruticans* is currently restricted to SE Asia, its historical distribution was much greater, and pollen and fruits of *Nypa* are common fossils in many parts of the world. *Nypa* has not been present in West Africa since the end of the Eocene (Gee 1989); however, *Nypa fruticans* was introduced to West Africa at two main locations in Nigeria. In 1906, seeds from the Botanic Gardens of Singapore were used to establish a trial plantation in Old Calabar from where a subsequent plantation was initiated in Oron in 1912 (Holland 1922) – the Cross River Delta population. In 1946, a further 6000+ seeds originating from Malaya were planted throughout

the brackish swamps of the Niger Delta (Zeven 1971). It is from these two single points of entry that the species has today colonized large areas of coastline throughout West Africa.

Zeven hinted at the potential capacity of the species to become naturalized and forecast that “.. [*Nypa*] will eventually spread rapidly throughout the coastal districts of West Africa” (Zeven 1973: 36). Today, *Nypa* has colonized large areas along the coastline of the Bight of Biafra, particularly in brackish and sheltered tidal areas such as river deltas – areas where the dicotyledonous mangrove species are more commonly found. The species has now established itself as far south as the Wouri Estuary near Douala, Cameroon and westwards to Lagos.

Unfortunately, this colonization has considerable ecological implications. It has been observed that *Nypa* is a highly opportunistic species and the dense monospecific stands that the species forms are out-competing the indigenous mangrove vegetation. This opportunism is exacerbated by the fact that much of the mangrove forest of Nigeria and Cameroon is being felled to provide fuel wood for smoking fish for commercial sale. The resulting exposed mudflats are ideal colonization areas for *Nypa*, and the indigenous mangroves are unable to re-colonize the areas.

Recent environmental impact assessments carried out for the oil industry observed that *Nypa* has invaded the mangrove areas of the Niger Delta especially around the Bonny and Imo Rivers and

is causing long-term ecological damage (SGS Environment, 1995). Mangroves in areas adjacent to petrochemical installations are frequently in poor condition. Wherever mangrove cover is poor and the ground is bare *Nypa* can rapidly invade, out-competing native mangrove species and causing permanent displacement. The study concluded that "*Nypa* is extending its range within the Niger mangrove system and has the potential to become a substantial problem" (SGS Environment, 1995).

It has been observed that where *Nypa* colonizes the mangroves, it completely chokes the mangrove vegetation in which fish breed. It is possible that dense *Nypa* colonization is affecting the breeding of fish in the Niger Delta thus contributing to the decline of fish populations throughout the area (Living Earth Nigeria Foundation, pers. comm.).

The Nigeria Delta and the communities that live there are relatively remote from mainstream life in Nigeria, and thus, *Nypa* colonization has barely begun to be an issue in Nigeria. Some environmental organizations are beginning to realize that *Nypa* could be a potential problem. Two years ago, the Nigerian Conservation Foundation (NCF) began project to assist local communities with the manufacture of jewellery from *Nypa*. The idea was that utilization would curtail the growth of the palm in the area. The project has made little impact because it seems that NCF did not consider the marketing aspect and certainly to date, there is no mass market for *Nypa* jewellery in Nigeria. A more viable alternative might have been to teach local people in Nigeria how to tap the *Nypa* palm for alcohol as is widely practiced in SE Asia (Fong 1993; Päivöke 1984).

Conclusion

There is an urgent need for research to be undertaken into the effects of the *Nypa* palm on the ecology of the West African mangrove ecosystem and fish populations. Additional research is also needed into possible means of developing biological control methods to supplement human control through harvesting and utilization.

Why was *Nypa* introduced to Africa in the first place? Initially intended to provide the people with "a crop more valuable than mangroves" (Zeven 1973: 36), it was hoped *Nypa* would provide cheap and readily available sources of thatching as well as a light alcoholic drink (to provide an alternative to felling the oil palm, the traditional source of palm wine). Unfortunately these development interventions were not appreciated by the local people and, despite some

minor cutting for thatching (Holland 1922), the *Nypa* palm remains considerably under-utilized in West Africa. Most communities in the Niger Delta seem to be completely unaware of the possibility of obtaining 'palm wine' from *Nypa*. Teaching local communities to tap the inflorescence would certainly restrict the ability of the species to reproduce. Hence the spread of *Nypa* throughout West Africa could be somewhat curtailed.

There have been some encouraging developments recently. In June 2002, Elf Petroleum Nigeria Ltd. announced that it would investigate means by which the *Nypa* invasion could be controlled (Obari 2002). A month later, the Nigerian Federal Ministry of Environment announced that plans were underway to eradicate *Nypa* and rehabilitate the Niger Delta's mangrove habitat (Oghifo 2002).

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