

## Appendix 5.25

### Popular Article

Title: Non-timber forest products: a sustainable income

Author: O'Regan, D.P.

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Agroforestry

## **Non-timber forest products: a sustainable income**

**Generating sustainable incomes from tropical forests without destroying them is the aim of the ‘Winners and Losers’ project, funded by the UK Department for International Development as part of their Forestry Research Programme. Dermot O’Regan, Centre for Ecology and Hydrology (CEH) Wallingford and co-ordinator of the project, discusses how forest products, like oil from the South American crabwood tree, can provide indigenous people with an important and sustainable income.**

Crabwood oil, from the rainforests of South America, is just one example of a forest product that can be utilised to benefit local people, provide income, support traditional knowledge, and help conserve the forests for future generations.

Tropical forests are being logged at an alarming rate because many developing countries need the cash. But could this be achieved without destroying the forests?

One solution is to manage the forests in a sustainable way, based on the systems that local communities have used for centuries. Over the past three years, our team at CEH Wallingford has been leading an international multi-disciplinary team investigating the opportunities for increasing the harvesting, processing and sale of non-timber forest products.

In Guyana, in South America, our collaborators, the Iwokrama International Centre for Rain Forest Conservation and Development, are working with Amerindian communities to explore the amazing properties of crabwood oil and assess its potential for benefiting the local people and their forest.

Guyana and Iwokrama

Guyana has over three quarters of its land area covered by forest. The country is at the heart of the Guiana Shield, home to one of the largest blocks of intact tropical rainforest in the world. The nation, though, faces enormous pressure to sell logging rights to generate cash needed for economic growth. Fortunately, Guyana's leaders have taken steps to follow a path that could bring in much-needed revenue from the forests without destroying them.

The Iwokrama Centre, set up ten years ago, aims to demonstrate how tropical rain forests can be both conserved and utilised to produce lasting ecological, economic and social benefits for the people of Guyana and the world as a whole.

The Iwokrama Forest Reserve, which lies in the centre of Guyana, acts as a living laboratory where scientists and other experts are researching and implementing a sustainable forest management strategy. This aim is to produce an income from a mixture of eco-tourism, timber extraction, agriculture and fisheries, ecological services, and non-timber forest products like crabwood oil.

## Crabwood oil

Crabwood (*Carapa guianensis*) is a tree of the mahogany family and one of the most common tree species found within the Iwokrama Forest Reserve. Crabwood's hard, insect-resistant wood, has long been sought-after for timber and furniture making. Crabwood also produces a brown, woody, four-cornered nut some 8 -10 centimetres across, containing several oil-rich kernels.

Using traditional knowledge and techniques, the indigenous people extract oil from the kernels. The oil has multiple uses and has long been a highly-prized household item in these communities, especially for treating common ailments. The oil is applied to the skin to treat muscle and chest pains, arthritis, and wounds. When mixed with honey, the oil can be taken as a remedy for coughs, colds, and asthma. Thrush in babies is treated with a few drops administered over a week or so. Crabwood oil is also a proven insect-repellent, warding off mosquitoes and so giving natural malaria prevention. Users of the oil welcome the moisturising effect on the skin and when applied to the scalp find it combats brittle hair and lice infestations. The list goes on!

Scientific assessment of crabwood oil properties is ongoing in order to assess the chemical basis for its antiseptic, anti-inflammatory, insect repellent, and moisturising properties. The cosmetic value of crabwood oil, for example, is due to a high oleic acid content which gives good penetration of the skin. It was also found that the oil blocks the activity of enzymes which result in fatty concentration of the skin, thus helping to keep the skin more smooth. Its content of linoleic acid provides wound-healing properties and a calming effect on itchy skin.

## Natural benefits

Because of the known benefits of crabwood oil, its production and use are widespread throughout Guyana and the region. Most production is done by women and in some communities this has become a worthwhile way of generating valuable income. Money from the sale of crabwood oil is used to buy children's clothes, school books, household utensils, and even outboard motors - which can help diversify people's livelihoods by trading along the river. The oil is sold both wholesale and retail and is available in local markets, drug stores, and pharmacies across the country, though returns may be lower than are possible as there is a lack of knowledge about the markets and marketing.

Internationally, there is a growing demand for 'natural', 'environmentally friendly' and 'fair trade' products. The properties of non-toxic and odourless oils, such as crabwood oil, are becoming much better known and used by companies specialising in herbal medicines, essential oils, body care lotions, candles, soaps and a variety of other health and beauty products. As sales of such products grow, so do the opportunities for producers in Guyana.

## Winners and losers

The *'Winners and Losers'* project is investigating the commercial potential of crabwood oil in Guyana and the opportunities for local people to produce and market the oil both at home and abroad. The research teams at Iwokrama, in collaboration with the Guyana Forestry Commission, are focusing on the environmental, social and economic impacts of increased harvesting and processing of the oil seeds, and of trading in crabwood oil. Hopefully, this work will help to promote an equitable distribution of the benefits and costs of increased commercialisation of such products as well as helping to prevent the destruction of the very resource we wish to conserve.

As part of the overall project, we are also working with partners in South Africa and Namibia on marketable products from the marula tree (*Sclerocarya birrea*), an African savanna tree of the mango family. Marula oil and marula fruit are already being traded internationally as ingredients in well-known brands, and we are investigating existing market chains to learn more about how these wild products could be traded.

The project team includes specialists in environmental economics, ecology, natural resource management, community development, marketing, and intellectual property rights. We aim to identify the 'winners' and 'losers' in forest product commercialisation to help establish methods of sustainable harvest of resources, benefit local producers, and resolve conflicts over resources. The knowledge gained will help forest-dependent communities all over the world to make the best use of their natural resources in a profitable, equitable and sustainable way.

As project manager Dr Caroline Sullivan points out, "This kind of research can contribute to our understanding of what is meant by 'sustainable economies'. It demonstrates how the NERC (National Environmental Research Council) research strategy has the potential to generate effective solutions to real world problems".

There is an abundance of wild and renewable forest products with the potential for development. These include edible fruit and nuts, honey, tree bark and resin, palm seed oils, and fibres for furniture and crafts. This doesn't include the plants and extracts still waiting to be discovered by medical science!

Crabwood oil is just one example of a forest product that can be utilised to benefit local people, provide income, support traditional knowledge, and help conserve the forests for future generations. We hope that this is a true example of sustainable development, where both people and the environment are winners.

**Partner organisations in this project**

<b>South Africa -</b>	<b>Rhodes University Institute of Natural Resources CISR Environmentek</b>
<b>Namibia -</b>	<b>CRIAA SA-DC</b>
<b>Guyana -</b>	<b>Iwokrama International Centre</b>

*For more information contact Dermot O'Regan, Centre for Ecology and Hydrology (CEH), Maclean Building, Crowmarsh Gifford, Wallingford, OX10 8BB, UK.*

Tel: +44 (0)1491 692417; e-mail: [dpo@ceh.ac.uk](mailto:dpo@ceh.ac.uk); web site: [www.ceh-wallingford.ac.uk/research/winners](http://www.ceh-wallingford.ac.uk/research/winners)

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Photo captions:

DPO1: *Crabwood kernels*  
*Credit: A.B (Tony) Cunningham*

DPO3: *Traditionally, crabwood kernels are boiled and worked into a paste to extract the oil.*  
*Credit: A.B (Tony) Cunningham*

DPO4: *A woman squeezing oil from boiled kernels using a matapee, a woven seive-like device used to prepare cassava.*  
*Credit: A.B (Tony) Cunningham*

DPO6: *Crabwood oil is sold in local market places and in the capital Georgetown. Crabwood oil is in the 'rum' half-bottle in the centre of the display and other smaller bottles, and is the colour of olive oil.*  
*Credit: Caroline Sullivan*