

10.1071/PC19052\_AC

*Pacific Conservation Biology*

**The impact of ebony wood harvesting on *Diospyros samoensis* (Ebenaceae)  
on Vangunu Island, Western Solomon Islands**

*Ramokasa Anisi*<sup>A</sup>, *Alyse de Souza*<sup>B</sup>, *Gilianne Brodie*<sup>C</sup>, *Randy Thaman*<sup>A</sup>, *Stefan Peters*<sup>B</sup>  
*Laurence W. Jessop*<sup>D</sup> and *Gunnar Keppel*<sup>B,E,F</sup>

<sup>A</sup> School of Earth Sciences, Geography & Environment, The University of the South Pacific, Laucala Campus, Suva, Fiji Islands.

<sup>B</sup> UniSA STEM, University of South Australia, Mawson Lakes Campus, GPO Box 2471, Adelaide, South Australia 5001, Australia.

<sup>C</sup> School of Biological & Chemical Sciences, The University of the South Pacific, Laucala Campus, Suva, Fiji Islands.

<sup>D</sup> Queensland Herbarium, Department of Environment and Science, Brisbane Botanic Gardens, Mt Coot-tha Road, Toowong, Queensland 4066, Australia.

<sup>E</sup> Future Industries Institute, University of South Australia, Mawson Lakes Campus, GPO Box 2471, Adelaide, South Australia 5001, Australia.

<sup>F</sup> Corresponding author. Email: [gunnar.keppel@unisa.edu.au](mailto:gunnar.keppel@unisa.edu.au)

**Supplementary Material**

**Supplementary Material S1: Questionnaire**

General Information:

Date:

Village/ Place:

Respondent's Name:

Respondent's Age:

Is the respondent a harvester/ carver/ other:

Knowledge of **rihe**:

1. How many varieties of **rihe** are out there? Explain.

2. Are the varieties of **rihe** from different species or the same species? Explain.
3. What are the most preferred habitat types for **rihe**? Explain.
4. How many **rihe** populations are out there?
5. Where are they and who is/are the owner(s)?
6. What is the conservation status of the **rihe** stands?
7. Are there any pests or diseases that affect **rihe** trees? Yes/no. If so, what are they? Explain.
8. What time of the year do **rihe** trees flower and fruit?
9. What animals, insects or other organism(s) do you see/ think visit **rihe** trees when they flower (i.e possible pollinators) or are in fruit (i.e possible seed dispersal agents); and provide names, if appropriate.
10. Do you still harvest **rihe** on Vangunu? Yes/no? Comments.
11. How many **rihe** trees do you harvest in a year?
12. Techniques of Harvesting: how do you check for rihe, process of removing the heartwood and what size of ebony wood you get from Vangunu?
13. Do you still carve ebony wood harvested from Bareke? Yes or no, comment.
14. Name 5 other main wood species you use in woodcarving carving?
15. Where and how do you market ebony wood (carving) and to whom? Explain.
16. Do you practice sales or barter of ebony wood (carving) or both?
17. How do you set prizes for your ebony wood/ebony carvings? Explain.
18. How often are your ebony wood carvings sold?
19. How much do you earn from ebony wood/ ebony carving annually? Estimate.
20. How much does ebony wood /ebony carving contribute to your families overall annual income? Estimate in percentage (eg. 25%, 50%, 75%, 100%)
21. List 5 traditional uses of **rihe**?

## Supplementary Material S2 Preliminary description of *Diospyros* sp. nova ‘Lupa’

### *Diospyros* sp. “Lupa”

**Potential type specimen:** SUVA 28106 (Collectors: Bolton Varo and Ramokasa Anisi,

Location: Lupa, Vangunu)

**Description:** Tree, up to 7 m high. Bark surface, black with very fine longitudinal fissures; bark slash, outer bark chocolate brown, inner bark yellow; wood slash, hard cream coloured. Leaves, narrowly lanceolate to elliptic, base minutely cordate to mostly rounded, apex acuminate, 7- 11 cm x 2.5 - 3.5 cm size, pubescent, erect hairs on both sides of blade but more pronounced on the underside, petiole. Flowers not available. Fruits, oval, yellow, 1.4 cm x 1.8 cm in size, glabrous.

**Note:** This taxon is provisionally named *Diospyros* sp. “Lupa” because it was collected from the weather coast facing side (**lupa**) of Vangunu Island. The species may be an undescribed species or represent a range extension for a species outside the Solomon Islands. Key characteristics of this species are found in the leaves and fruit. Leaves are minutely cordate to rounded at base and pointed at the apex and are covered with erect hairs on both sides of leaves. Fruits are elliptic with 4 calyx lobes pointed at the tip. These characteristics are not found in any other *Diospyros* species known from the Solomon Islands.

NOTE: Photos on the next page



Figure: *Diospyros* sp. "Lupa"; Top left: Twig; Top right: Fruits; Bottom left: Stem; Bottom right: Herbarium specimen; SUVA 28106

**Supplementary Material S3: Major locations of rihe stands identified in the questionnaire survey.**

<b>No.</b>	<b>Location</b>	<b>Description</b>
1	Toa Batuna	Southeast of Batuna, exposed bedrock on cliff edge with little to no soil
2	Toa Gasini	South of Gasini Village, exposed bedrock on cliff edge with little to no soil
3	Turo	South to southwest of Bisuana Village, thicker soil layer on top of bedrock
4	Piropiro	South to southwest of Bisuana, thicker soil layer on top of the bedrock
5	Chote	South to southwest of Bisuana, exposed bedrock on cliff edge with little to no soil
6	Kabutotazigu	South of Cheke Village, exposed bedrock on cliff edge with little to no soil
7	Toa Ilmu	South of Telina, thicker soil layer on top of bedrock
8	Togere	South of Rukutu Village, exposed bedrock on cliff edge with little to no soil
9	Tola	South of Rukutu Village, exposed bedrock on cliff edge with little to no soil
10	Popoda	South of Rukutu Village, exposed bedrock on cliff edge with little to no soil
11	Karutinge	Two small Island southeast of Bareke Peninsula, layer of dark topsoil on limestone bedrock
12	Matiu	Three of the longest Islands, north to east of Bareke Peninsula, which are mostly exposed limestone with little or no soil.
13	Njapuchajomo	

14	Sanihulumu	
----	------------	--