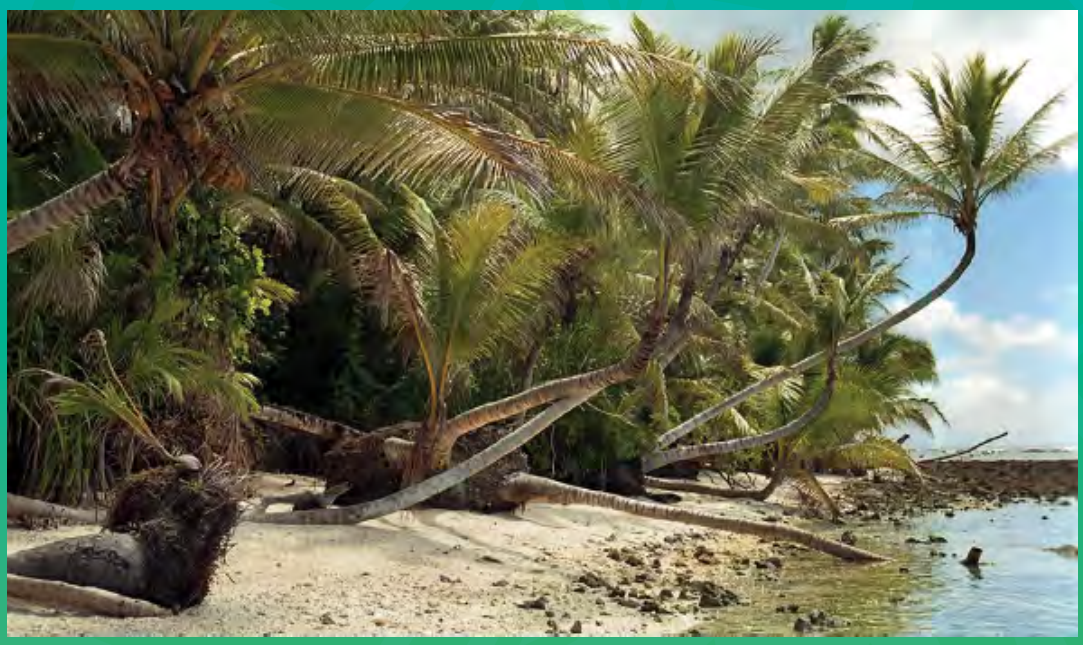
Pacific Community
Communauté du Pacifique

Coconut Risk Management and Mitigation Manual for the Pacific Region



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Suva, December, 2021

LRD
Land Resources Division

Original text: English

Pacific Community Cataloguing-in-publication data
Bourdeix, R. (Roland)
Coconut risk management and mitigation manual for the Pacific region / compiled by R. Bourdeix, J. M. Sourisseau and J. Lin

1. Coconut – Oceania.
2. Coconut – Oceania – Handbooks, manuals, etc.
3. Coconut – Management – Oceania.
4. Coconut industry – Oceania.
5. Coconut products – Oceania.

I. Bourdeix, R. (Roland) II. Sourisseau, J. M. III. Lin, J. IV. Title V. Pacific Community

634.6170995 AACR2

ISBN: 978-982-00-1429-9

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To cite this manual:

Bourdeix, R., Sourisseau, J. M., & Lin, J. (Eds.). (2021). Coconut Risk Management and Mitigation Manual for the Pacific Region. Land Resources Division, SPC.

To cite a chapter of this manual:

Lin, J., Alasia, J. P., & Helsen, J. (2021). Risks linked to organizational and policy issues. In R. Bourdeix, J. M. Sourisseau & J. Lin, J. (Eds.). *Coconut Risk Management and Mitigation Manual for the Pacific Region* (pp 99-100). Land Resources Division, SPC.

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1. INTRODUCTION

A. CONTEXT OF COCONUT AGRICULTURE IN THE PACIFIC REGION

By R. Bourdeix, E. Tamasese, and N. Tuivavalagi

The coconut industry in the Pacific is one of the foundations of commercial agricultural crops that came into the region with colonialism. It quickly became a major export and dominated the Pacific Island economies up to the 1980s.

In the mid-1980s, the price of coconut oil dropped significantly, causing many producers to discontinue production and diversify to other crops or industries. A contributing factor to the collapse in demand for coconut and coconut products was the potentially flawed assumption that the product's saturated fat[6] content was a contributor to heart disease. However, later scientific studies that showed the health benefits of coconut oil led to changing dietary trends and a change in perception of coconut oil and saturated fats in general. In the early 2000s, demand for virgin organic coconut oil began to significantly increase the production of coconut oil as an edible product.

This event has led to the growing demand for coconut oils and coconut products in general, elevating prices to once again make the coconut a viable investment as a commercial agricultural commodity.

Coconut agriculture is now a two-speed economic phenomenon. Some countries, such as Brazil, India, and Thailand, have started to apply advanced intensive cultivation methods on Dwarf and Hybrids cultivars. For instance, Brazilian farmers often use irrigation, fertigation and high-level mineral fertilization (up to 7 kg/palm/year), together with a leguminous cover crop to fix nitrogen. These farmers often obtain very high yields. Small farmers regularly reach 250 tendernuts/palm/year by using the Brazilian Green Dwarf variety with a planting density of 222 palms per hectare. Many plantations reach 180 mature nuts/palm/year with Dwarf x Tall hybrids, at a density of 180 palms/ha. In these countries, coconut cultivation has become a very profitable business. Some private companies are now investing in the production of advanced planting materials for farmers. In India, for instance, hybrid seedlings are often sold by private companies for more than 5 USD each, and farmers queue to buy and obtain this elite planting material. The cultivation methods applied in these countries are generally neither organic nor environmentally friendly. Much of this activity aimed to increase production due to limited supply of material for the processing stage of the value chain.

The Pacific, however, has a significantly underdeveloped processing sector. Due to this, and despite increasing prices and demand, millions of coconuts are left unharvested on the ground. For example, from the estimated 84 million coconuts per annum produced in Samoa in 2018, only 10% of those are exported after processing. Coconut is also widely self-consumed

[6] Coconut's fatty-acid profile is dominated by medium-chain triglycerides, especially Lauric Acid (49%), which does not confer the same health risks as longer chain saturated fatty acids. For further information, see risk description n°40.

and used to feed animals. Based on the current going rate for coconuts (approximately 11 cents USD per nut), about 9 million USD per year worth of coconuts are left on the ground.

Some countries, many of them from the Pacific region, continue to plant traditional varieties selected in a very basic manner. Their national average yield is sometimes no more than 40 coconuts per palm per year. The palms are cultivated in a way said to be 'organic', but in most cases, nutrients are generally not available to the palms, which rely only on 'mother nature'. Cover cropping is not practiced. Thus, to reach the production of one hectare as in Brazil, Pacific farmers would need to plant and manage more than four hectares. As most of the work is manual, and with no cover crop installed, farmers injure themselves by weeding very fast-growing wild plants**.** Farmers often abandon the maintenance of their coconut groves: in some countries, up to 30% of the coconuts rot in the bush, no longer being harvested. It would appear from the Samoan example that a significant focus needs to be directed to the reasons for the inability to harvest the yields from the existing plantations, rather than only increase yields from the field.

Experts and economists call for a change in agronomic and commercial practices, in order to enter the large and promising market linked to a modern and globalized coconut industry. But local and regional markets also exist, relying on specific demand and needs, and generate specific risks. In addition, the economic functions of Pacific coconut cultivation and production are embedded in environmental, social, and cultural functions. Depending on the functions considered, the nature of the risks to consider may be common (phytosanitary threats and climatic hazards for instance) or differ; price ruptures or commercial risks are crucial from the industry perspective, and intra-familial or community disputes are part of the 'social' risks.

Sometimes, of course, economic and social functions are linked. For instance, it seems that there is a great willingness of institutional actors to increasingly move towards organic agriculture, to secure the market for Pacific countries. Is this willingness shared by farmers? Are the risks associated with this strategy, from a stronger exposure to markets' instabilities to possible tensions within the communities, if one farmer begins to sell a lot on the international markets?

Another major focus area is assessing the risks that led to the decline of the industry in the 1980s. What were the factors that led to the collapse of a multi-million dollar industry? What interventions or strategies can be implemented to ensure such a collapse can be avoided in the future?

B. A BRIEF OVERVIEW OF VALUE CHAINS AND STAKEHOLDERS

By J. Lin and R. K. Myazoe

The coconut palm is a versatile crop from which a wide variety of products can be prepared or manufactured. The entire nut from the husk, shell, kernel to the water can be used for various products. The value chain is split into multiple levels of processing and for different end products and markets.

Plate 1 provides a graphic overview of the coconut value chain. First, all products are derived from raw coconut materials. In order to produce quality coconuts, additional inputs in breeding, planting, and cultivation are crucial. Since coconut is a perennial crop, it can be harvested all year round, though cyclone season can often threaten the supply of coconuts. In Pacific Island countries, fallen coconuts are collected. This method makes the supply of coconuts inconsistent and unpredictable.