



Federated States of Micronesia

Coconut National Export Strategy 2023-2028



About the Coconut National Export Strategy

The Coconut National Export Strategy (CocoNES) is an official document of the Government of the Federated States of Micronesia (FSM). The initiative, led by the FSM Department of Resources and Development, is part of the FSM Petroleum Corporation's Coconut for Life Project, mandated to increase the value of the coconut in the country. This Strategy was developed based on the process, methodology and technical assistance of the International Trade Centre (ITC) within the framework of its Trade Development Strategy programme.

The findings are based on extensive research and the results of several rounds of stakeholder consultations. This document summarizes the trade performance of the coconut sector in the FSM and contains a detailed, prioritized Plan of Action to support development.

Technical and drafting support was provided by Charles Roberge (ITC), Amaliia Mkhitarian (ITC), Dileepama Ratnayake (international expert), Dulara de Alwis (international expert), Marnie McDonald (editor) and Jesús Alés (designer).

The views expressed herein do not reflect the official opinion of ITC. Mention of firms, products and product brands does not imply the endorsement of ITC. This document has not been formally edited by ITC.

For any queries about the CocoNES, please contact:

FSM Department of Resources and Development

Address: Palikir, Pohnpei, FSM 9694; P.O.Box PS-12

Contact details: Tel: (691) 320-5133 Fax: (691) 320-5854

Website: <https://www.fsmrd.fm/>

Email: admin@fsmrd.fm

International Trade Centre

ITC encourages reprints and translations for wider dissemination. Short extracts may be freely reproduced, with due acknowledgement, using the suggested citation. For more extensive reprints or translations, please contact ITC using the online permission request form: <http://www.intracen.org/Reproduction-Permission-Request/>.

Street address: ITC 56, rue de Montbrillant 1202 Geneva, Switzerland

Postal address: ITC Palais des Nations 1211 Geneva 10, Switzerland

Website: <http://www.intracen.org>



Federated States of Micronesia

Coconut National Export Strategy 2023-2028



Acknowledgments

The development of the CocoNES was led by the FSM Department of Resources and Development, in close cooperation and coordination with corresponding counterparts in the four States of the FSM.

The document benefited particularly from the inputs and guidance provided by the members of the Coconut Sector Development Coalition that steered the formulation of the CocoNES, namely:

Name	Position	Organization
CocoNES Advisory Body		
Elina Akinaga	Secretary	Department of Resource & Development, FSM
Eugene Amor	Secretary	Department of Finance and Administration, FSM
Kandhi A. Elieisar	Secretary	Department of Foreign Affairs, FSM
Carlson D. Apis	Secretary	Department of Transportation, Communication, and Infrastructure, FSM
Joses R. Gallen	Secretary	Department of Justice, FSM
Coconut Sector Development Coalition		
Brandon Tara	Chief Financial Officer	Accounting Division, FSM Development Bank
Francis Ruegorong	Waab Wildlife Coordinator	Division of Agriculture and Forestry, Department of Resources and Development, Yap State Government
Gideon Bisalen	General Manager	Truk Transportation Company
Hannah Marie Isaac	Key Accounts Manager	Vital – FSM Petroleum Corporation
Hubert K. Yamada	Director	Department of Resources and Development, Pohnpei State Government
Kalvin S. Assito	Community Resources and Development Agency	College of Micronesia-FSM Cooperative Research and Extension, Land Grant
Marciano Imar	Sustainable Agriculture Programme Specialist	Division of Agriculture, Department of Resources and Development, FSM National Government
Roxanne P. Charley	Administrator	Division of Agriculture and Land Management, Department of Resources and Economic Affairs, Kosrae State Government
Stanley Raffilman	Programme Manager for Trade	Division of Trade and Investment, Department of Resources and Development, FSM National Government
Thomas Kostka	Assistant Secretary	Division of Marine Transportation, Department of Transportation, Communication and Infrastructure, FSM National Government
Venkatesh Baru	Project Engineer	Coconut for Life
Willie Wthree Williander	Deputy Director	Department of Agriculture, Chuuk State Government
Yvonne Johnny Immanuel	Special Assistant to the President on Overseas Development Assistance Matters	Overseas Development Assistance – Compact Office

Organizational and logistical support in the FSM was possible thanks to the CocoNES Secretariat, namely Stephanie Edward, Damien Semens, Lisa Marie Billy, Tiffany Mori, Jacqueline Duraen, John Gilsowuth, Crystal Irons Suka, Peterson Anson, Gibson Siba, Seylyn J. Albert.

Foreword

by the President of the Federated States of Micronesia



FSM Coconut National Export Strategy 2023 – 2028 (CocoNES) is a significant nationwide milestone to transform the coconut sector into a sustainable, export-viable industry. The Strategy contributes to the FSM commitment to 'improving quality of life for all FSM people' through 'managing the coconut industry for the benefit of both producers and processors', as per the Strategic Development Plan 2004-2023.

The CocoNES is geared to untap sector export potential for additional income opportunities, jobs, revenue growth, and country's economic stability. We all know the importance and relevance of the coconut for our people. The majority of households across the country grow this traditional crop; moreover, for outer islands, it is often the only cash crop option. The current context of growing global markets for coconuts products provides a favourable environment to introduce the FSM story of the coconut sector: authentic, unique, and novel.

The CocoNES is the consensus-based result of National and State sector stakeholders to orient the sector development in the next 5 years. Back in November 2021, we initiated the strategy design process with the Presidential Order establishing the CocoNES institutional framework. I'm delighted to see that the year-long consultative process united relevant public and private sector representatives across the country: Chuuk, Kosrae, Pohnpei, Yap. The FSM shows commitment, dedication, and enthusiasm towards achieving common goals.

I congratulate the FSM Department of Resources and Development, the States and all contributors for their *hard work and devotion to producing this Strategy*. I hereby endorse and commit it to our responsibility to ensure the CocoNES implementation is done with the same unity and commitment.

A handwritten signature in blue ink, appearing to read 'David W. Panuelo', with stylized flourishes.

David W. Panuelo
President,
Federated States of Micronesia

CONTENTS

ACKNOWLEDGMENTS	II
FOREWORD BY THE PRESIDENT OF THE FEDERATED STATES OF MICRONESIA	III
ACRONYMS AND ABBREVIATIONS	VII
EXECUTIVE SUMMARY	1
INTRODUCTION	5
GLOBAL COCONUT INDUSTRY: FROM TRADITIONAL LOCAL USE TO WORLDWIDE CONSUMPTION	7
FSM COCONUT SECTOR PERFORMANCE: AWAKENING DORMANT POTENTIAL	13
VALUE CHAIN MAPPING	21
COMPETITIVENESS CONSTRAINTS	29
THE WAY FORWARD: REDEVELOPING THE FSM SECTOR IDENTITY	39
VISION	39
STRATEGIC ORIENTATION	40
PRODUCT AND MARKET ORIENTATION	41
VALUE CHAIN UPGRADE	47
VALUE CHAIN OPTIONS	48
INSTITUTIONAL ADJUSTMENTS	49
INVESTMENT NEEDS	50
IMPLEMENTATION MODALITIES	51
PRIORITY ACTION AREAS: 'QUICK WINS' FOR YEAR 1 IMPLEMENTATION	54
PLAN OF ACTION	55
ANNEX I: OVERVIEW OF THE FSM TRADE SUPPORT NETWORK	67
ANNEX II: PARTICIPANTS ENGAGED DURING THE CONSULTATIONS	68
REFERENCES	71

FIGURES

Figure 1: World production of coconuts, by region, 2011–2021 (tons)	7
Figure 2: Area harvested (ha) and yield (tons/ha) in two top coconut-producing countries, 2011–2020	8
Figure 3: Principal coconut product segments, compound annual growth rate (CAGR) by 2026	8
Figure 4: Import volume of coconut products, 2011–2021 (tons)	9
Figure 5: Import value of selected coconut products, 2011–2021 (\$ thousands)	9
Figure 6: Production of coconuts by small island developing states* in the Pacific, 2016–2020 (tons)	10
Figure 7: Exports of coconut products in the Pacific, 2016–2020 (\$ thousands)	10
Figure 8: An overview of the classification of coconut products and by-products	11
Figure 9: Share of households with land for agriculture growing selected crops, by State, 2016	13
Figure 10: Yield in selected SIDS in the Pacific, 2011–2020 (tons/ha)	15
Figure 11: Source of coconut planting materials by State	15
Figure 12: Copra and coconut oil prices, 1992–2022 (\$ per ton)	16
Figure 13: FSM copra oil exports, value (by State) versus total volume, 2008–2018	18
Figure 14: Simplified overview of FSM institutions that impact the coconut sector	19
Figure 15: Schematic routes of nationally operated vessels	26
Figure 16: Coconut resource assessment of Pohnpei Participant Guarantee Scheme farms, 2019	31
Figure 17: Strategic and operational objectives	40
Figure 18: Illustrative list of coconut products for FSM export in the short, medium and long term (with HS codes)	46
Figure 19: Proposed coconut sector governance framework	51
Figure 20: Organigram of the Strategy Management Unit	52

TABLES

Table 1: Export destinations for SIDS key coconut products	10
Table 2: Overview of key coconut production statistics by State	14
Table 3: Share of households selling coconuts by State	16
Table 4: List of identified commercial coconut operators/processors	17
Table 5: Coconut products imported by the Federated States of Micronesia, 2021	19
Table 6: International shipping lines through FSM	26
Table 7: Comparison of ad valorem equivalent tariffs for selected coconut products entering the EU	35
Table 8: Leveraging market and product opportunities in the domestic market	42
Table 9: Building back traditional exports to regional markets	43
Table 10: New product development: Potential, requirements and suggested priorities	44
Table 11: New products to regional markets	44
Table 12: New products to new global markets	45

BOXES

Box 1: FSM economic structure	18
Box 2: Locally focused quality assurance mechanism: Participatory Guarantee System	24
Box 3: Storage upgrade to meet Hazard Analysis and Critical Control Point designation: The case of Fiji	24

Acronyms and abbreviations

Unless otherwise specified, all references to dollars (\$) are to United States dollars, and all references to tons are to metric tons.

CAGR	compound annual growth rate	ICC	International Coconut Community
CIF	cost, insurance, freight	ITC	International Trade Centre
COM	College of Micronesia	KSA	Kosrae State Department of Resources and Economic Affairs
CNO	crude coconut oil	PGS	Participant Guarantee System
CocoNES	Coconut National Export Strategy	PNI	Pohnpei State Department of Resources and Development
CRE	Cooperative Research and Extension Unit	PoA	Plan of Action
CSDC	Coconut Sector Development Coalition	R&D	research and development
DRD	Department of Resources and Development	RT	revenue ton
DECEM	Department of Environment, Climate Change and Emergency Management	SBDC	Small Business Development Centre
EPA	Economic Partnership Agreement	SIDS	small island developing states
EU	European Union	SPC	Pacific Community
FAO	Food and Agriculture Organization of the United Nations	TC&I	Department of Transportation, Communication and Infrastructure
FSM	Federated States of Micronesia	TKK	Chuuk State Department of Agriculture
FSMPC	FSM Petroleum Corporation	USPS	United States Postal Service
GAP	Good Agricultural Practices	VCO	virgin coconut oil
HACCP	Hazard Analysis and Critical Control Point	YAP	Yap Department of Resources and Development
HH	household		
HS	Harmonized System		



EXECUTIVE SUMMARY

The FSM Coconut National Export Strategy (CocoNES) is the national Government's first-ever sector-specific blueprint to develop the coconut sector into a stable industry for the well-being of FSM communities. The five-year Strategy was developed through a series of consultations between public and private sector stakeholders in the four States. It defines a clear vision and a set of concrete actions to realize the sector's potential for the nation's benefit, while ensuring its sustainability. Establishing consistent, quality-oriented production and processing; creating responsive and transparent business conditions; and complying with market requirements are crucial elements to turn the traditional sector into an additional source of income and export earnings. To achieve the Strategy's targets, stakeholders will need to implement and coordinate specified actions, monitor progress and mobilize the necessary resources.

The FSM is an aspiring newcomer to the global market for value-added coconut products. Free of any previous image, the country is yet to build and pitch its unique story for exports to the world. This story will be based on a solid foundation of product quality, authenticity and sustainability. On the way to image creation, the FSM is determined to gradually evolve from basic production to more value and sophistication. The value of the coconut will be maximized through processing of by-products. The Government will take deliberate steps to re-emerge as an exporter and move up the value chain.

Globally, the coconut has turned from a local crop for subsistence living into internationally demanded products, with an estimated market value of \$16.4 billion (2022). For years, the main output of the coconut sector in the global market was limited to 'traditional' copra, crude coconut oil (CNO) and refined coconut oil, and desiccated coconut. However, the coconut product range has recently expanded with emerging, non-traditional products. Edible 'newcomers' include, for example, coconut water, coconut condensed milk, infused coconut oil, coconut sugar; and non-edible products include cosmetics and personal care products. Non-traditional products shift the focus towards more value addition, organic practices and 'zero waste' production.

The FSM coconut sector appears dormant and challenged with pressing issues. In contrast to vibrant copra activities in the second half of the twentieth century, sector performance has declined and narrowed to a subsistence crop and quick cash option. The sector is based on smallholder farming. Coconuts are grown by more than 90% of households (HHs) and mainly destined for immediate HH use and consumption. Only 42% of these farmers sell coconuts, most of which go to the domestic market, in particular directly to consumers (43%). At present, there are few commercial operators in island states, with two sizeable sector outputs: CNO and white kernel/virgin coconut oil (VCO).



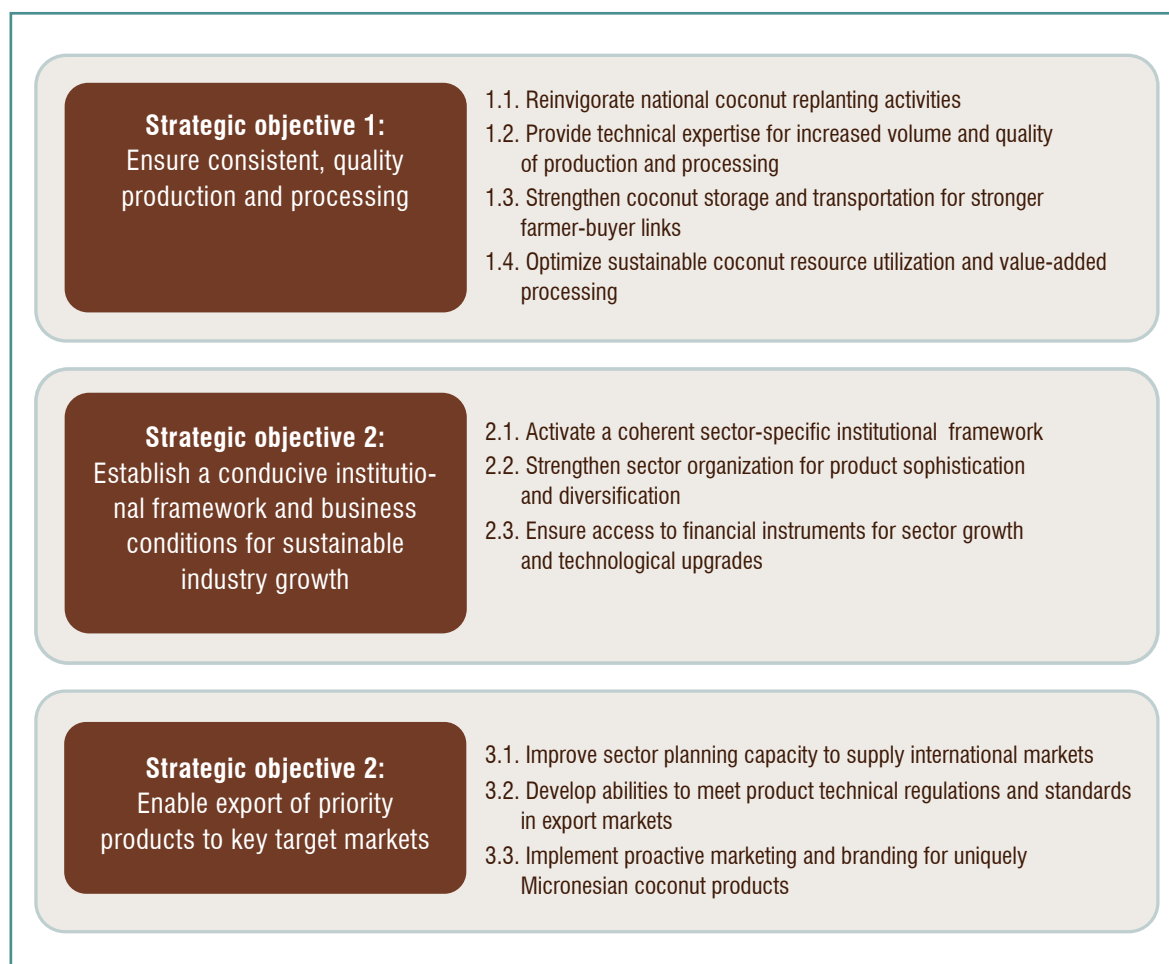
Currently, the FSM does not export significant volumes of coconut products; sizeable exports ceased in 2018. Small producers export micro quantities of VCO by air freight to the FSM diaspora and businesses run by FSM citizens abroad. The country used to be actively involved in copra export, and more recently – until 2018 – the main export product was copra oil. Pohnpei and Yap were the major exporting States; despite the fact that Chuuk has the biggest planted area and production potential, its export activity was small. In 2018, the export earnings from copra (Harmonized System (HS) code 120300) amounted to \$67,000, which is far below the top 10 products exported by the FSM.

Constraints identified affect the capacities of coconut producers and processors, the quality of the business environment, and market entry. At the farm/HH level, the challenges cover production inputs, practices, links and the availability of manpower. Coconut processing is further constrained by inconsistent coconut supply, tools, technologies, knowledge and skills. As for the business environment, limitations are related to regulatory reforms, the institutional framework, the quality of business support, and finance. While export activity is in microvolumes (not featured in official statistics) to very specific buyers, market entry is compromised by ability to conform to market entry requirements, and limited trade support services, promotion and branding.

To address constraints and embrace sector opportunities in the next five years, FSM stakeholders agreed on the coconut sector vision, geared towards restarting exports. The vision statement reflects key priorities for redeveloping the coconut sector, turning a traditionally grown crop in FSM into quality products supplied to foreign markets. The vision will be transformed into concrete results through the achievement of three strategic objectives. These objectives target major sector themes: the consistency and quality of product supply, the coherence of sector organization and the ability to compete internationally.

“ A vibrant and sustainable coconut industry:
from the heart of Micronesia to the world. ”

Strategic and operational objectives

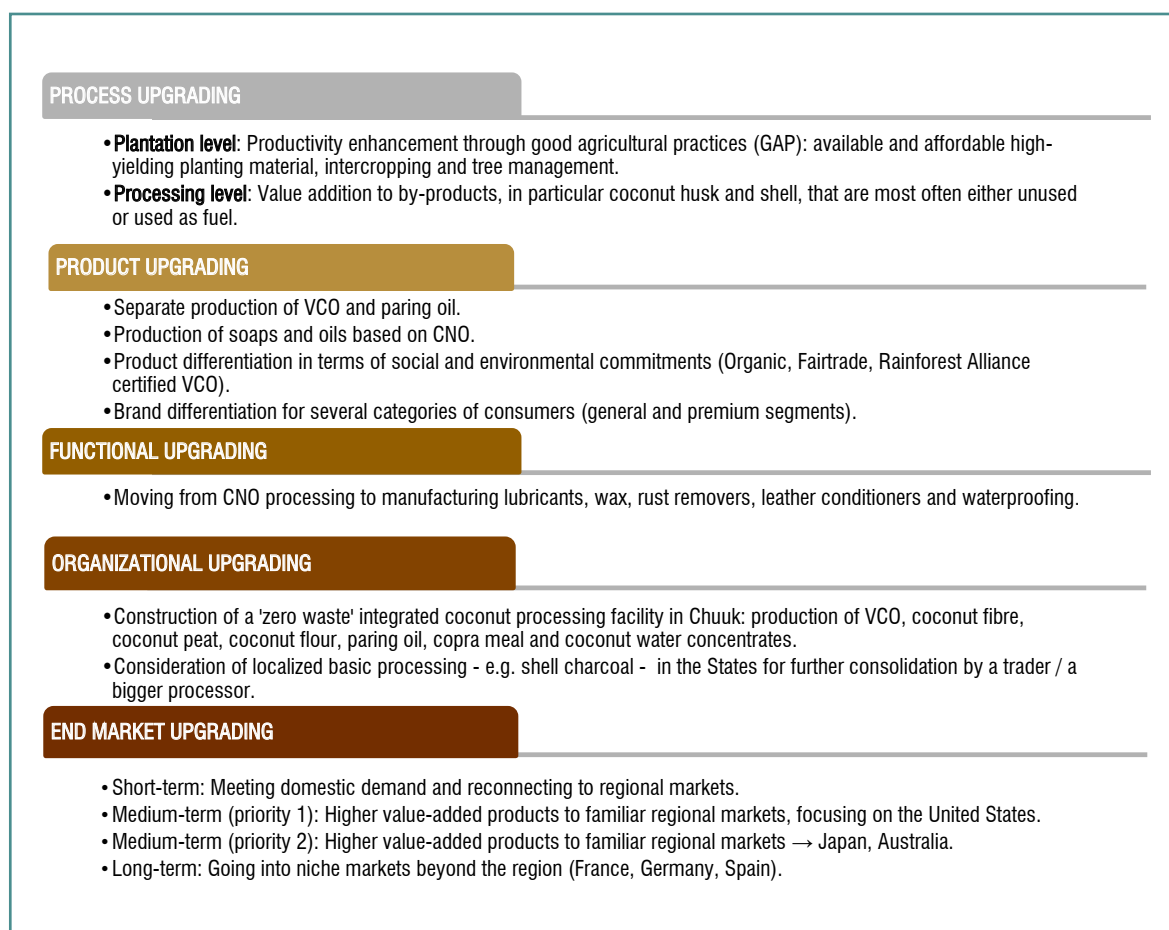


Based on global dynamics in the coconut sector, there are sustained market options for semi-processed products and visibly growing opportunities for emerging, non-traditional products. Embracing opportunities in the current context, the Government of the FSM suggests pursuing the following market options, with short-, medium- and long-term orientations:

Overview of a proposed market orientation approach

- **Short-term:** Meeting domestic demand and reconnecting to regional markets
- **Medium-term:** Value-added products to familiar regional markets, with the focus on the United States of America
- **Long-term:** Going into niche markets beyond the region.

Overview of upgrade trajectories for the FSM coconut sector



Coconut sector performance in the FSM is also inevitably connected to development considerations. Given the sensitivity of island states to climate change, the Government is mindful of its natural resources and environmental sustainability. Inclusive business practice is another priority for stakeholders. The relevance of the coconut tree is paramount for outer islands, where economic activities are limited. Moreover, the sector is also seen as capable of creating new opportunities for youth and women.

A stable and credible mechanism to drive Strategy implementation will be central to the success and longevity of the Strategy. As an immediate step, it is proposed that an adequate institutional framework be formalized and operationalized to oversee and coordinate Strategy implementation through amending the Presidential Order of 11 November 2021. Further, a set of 11 activities have been identified as high priority and recommended for immediate implementation, and these require funding. The objective of these activities is to ensure a rapid and smooth transition from the Strategy to action.

INTRODUCTION

“ He who plants a coconut tree plants food and drink, vessels and clothing, a home for himself and a heritage for his children. ”

South Seas saying

While the origin of the coconut is still debated, it is certain that it is deeply rooted in the life of producing countries... and beyond. ‘The tree of life’, ‘the tree of a thousand uses’, ‘a miracle fruit’, ‘Nature’s gift to mankind’ – numerous references point to the role of the coconut. For tropical regions, the coconut tree is of great significance: it provides millions of people with food, employment and business opportunities. More than 80 functional uses of the plant have been documented, ranging from refreshing beverages and building materials to musical instruments and medication. Furthermore, it is also attributed cultural and spiritual meanings and used in rituals and ceremonies.

Today the coconut is found not only in territories with a humid tropical climate but also on supermarket shelves in countries with less favourable climate conditions. Once the coconut has moved from local gardens –through processing and preservation technologies– to international consumers, it has established another prominent use: an additional source of income for farmers and communities. It is a sought-after product and ingredient worldwide. This provides a favourable global environment to introduce the FSM story of the coconut sector –authentic, unique and novel– for the prosperity of FSM people.



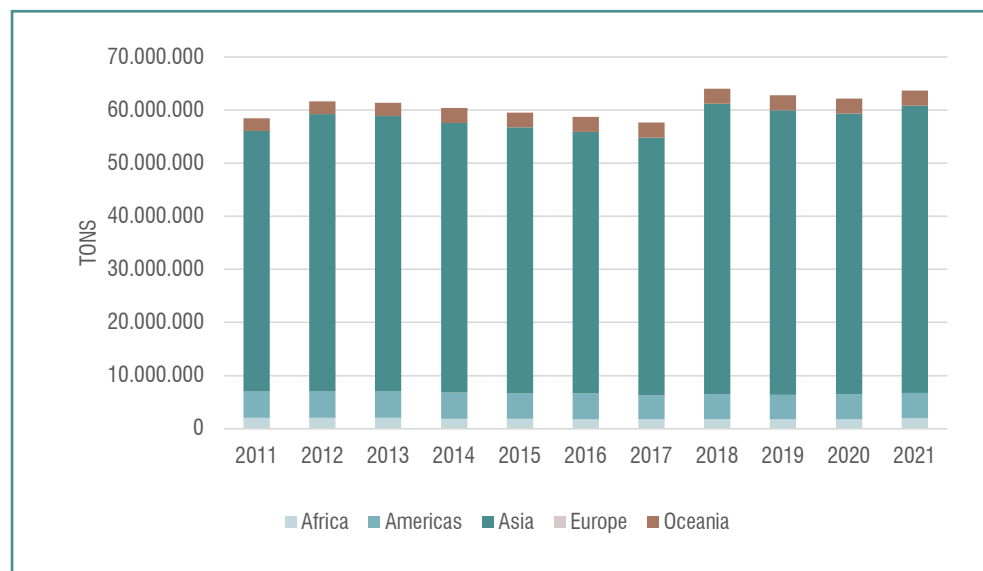
GLOBAL COCONUT INDUSTRY: FROM TRADITIONAL LOCAL USE TO WORLDWIDE CONSUMPTION

Production is stagnant

Global production of coconuts has been relatively stable over the past 10 years. The Asia-Pacific region is the heart of coconut production, accounting for around 85% of the world's coconuts. Major coconut-producing countries – such as Indonesia and the

Philippines – manage to sustain their harvest despite unforeseen disruptions by extreme weather conditions. Production volume can be maintained through increases in the area harvested, while yield has generally stayed stagnant or even declined.

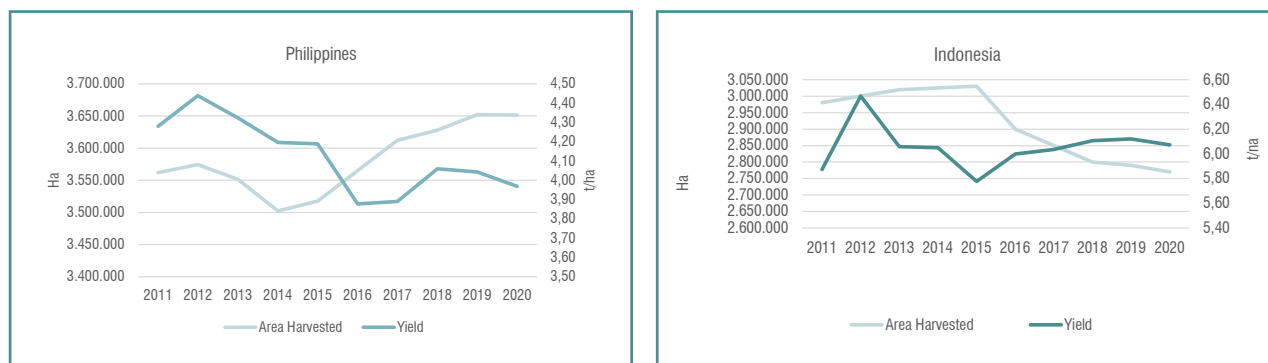
Figure 1: World production of coconuts, by region, 2011–2021 (tons)



Source: ITC calculations based on Food and Agriculture Organization of the United Nations Statistics (FAOSTAT) (<https://www.fao.org/faostat/en/#home>).

However, this decade-long stability in coconut production may be challenged by aging, unproductive trees in the biggest coconut-producing region. Currently, the estimated senility rate of coconut trees in Asia-Pacific is 50%, which results in lower yields (Asian and Pacific Coconut Community statistics, quoted in McGregor & Sheehy, 2017). This situation can be exacerbated by poor tree management, cutting down

coconut plantations for urban development and natural disasters. Realizing existing risks, governments, NGOs and multinational companies have joined forces to introduce sustainable sector initiatives. The results, and the stability of the sector, will depend on the commitment, resources and capacities to implement these activities at regional, national, enterprise and farmer level.

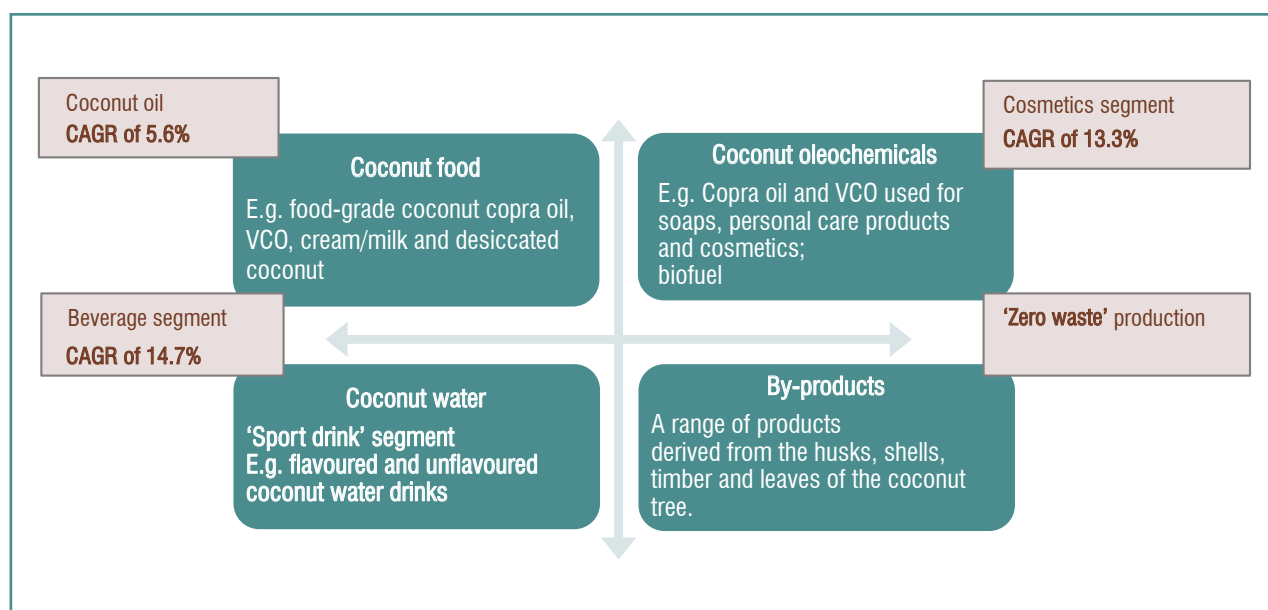
Figure 2: Area harvested (ha) and yield (tons/ha) in two top coconut-producing countries, 2011–2020

Source: ITC calculations based on FAOSTAT (<https://www.fao.org/faostat/en/#home>).

Demand increases by leaps and bounds

Coconut has turned from a local crop for subsistence living into globally demanded products, with an estimated market value of \$16.4 billion (2022). For years, the main output of the coconut sector in the global market was limited to ‘traditional’ copra, CNO and refined coconut oil, and desiccated coconut. While these coconut products show rise in demand, translated into increased volume of imports, this does not necessarily reflect growth in value, due to fluctuations in the price

of raw and primary products (see Figures 4 and 5). With changing consumer preferences – and the discovery of new uses, processing techniques and technologies – ‘non-traditional’ products have emerged on the global market. Now the sector is broadly composed of four market segments with edible and non-edible products for diverse use: coconut food products, coconut oleochemicals, coconut water/beverages and by-products.

Figure 3: Principal coconut product segments, compound annual growth rate (CAGR) by 2026

Source: Research and Markets (2019), Research and Markets (2021), International Coconut Community (2022a).

Coconut oil is the most traded coconut product, accounting for around 45% of globally imported value. Diverse types of oil allow for product differentiation from commodity to the niche/artisanal category: refined and unrefined, virgin and extra virgin, edible and for industrial use, etc. Depending on the quality and

processing technology, coconut oil can be positioned as a stand-alone product as well as an ingredient in other industries (e.g. confectionary, cosmetics). Further product variations are enabled by growing demand for 'organic' certification, driven by sustainability factors and consumer preferences.

Figure 4: Import volume of coconut products, 2011–2021 (tons)

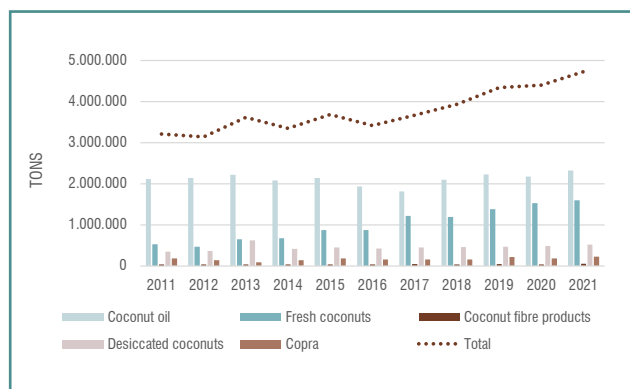
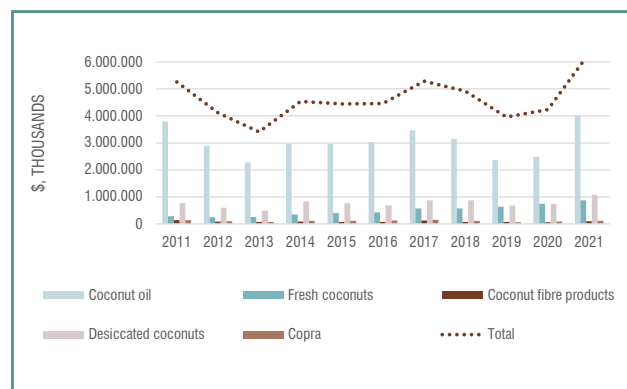


Figure 5: Import value of selected coconut products, 2011–2021 (\$ thousands)



Note: Product selection is based on the availability of a Product-dedicated HS code for accuracy of data. Not all importing countries have been considered due to discrepancies in data units. For example, Singapore imports of fresh coconuts have not been included due to reporting in units, not in tons.

Source: ITC calculations based on United Nations Comtrade and ITC statistics.

Recently, the coconut product range has been expanded with emerging, non-traditional products. Edible 'newcomers' include, for example, coconut water, coconut condensed milk, infused coconut oil and coconut sugar; non-edible ones refer to activated carbon, cosmetics and personal care products. Although traditional products are still prevailing in terms of traded volumes,

non-traditional products shift the focus towards more value addition and fetch higher prices. The interest in coconut-based products is attributed to the rise in popularity of veganism and the increase in consumption of plant-based food and beverages. The growth of the market is also supported by surging demand for natural and organic personal care products.

Asia-Pacific drives supply to the world

As the world's biggest coconut producer, the Asia-Pacific region has absolute dominance in both domestic consumption and exports of coconut products. The top five exporters from the region account for almost 70% of world coconut exports, led overall by coconut-producing giants: the Philippines and Indonesia. Other regional countries demonstrate stronger export performance for individual coconut products, such as Thailand in coconut water, coconut milk/cream and milk powder (International Coconut Community (ICC) Statistics); and Sri Lanka in desiccated coconut and coconut milk/cream (Sri Lanka Coconut Development Authority, 2020). Interestingly, while trade in copra has generally declined, the biggest industry players keep sourcing this primary product from other regional producers to

fuel their processing facilities and meet the demand for value-added products.

The United States, European Union (EU) and China are the leading buyers of coconut products, jointly accounting for about 75% of international demand. While Asia-Pacific countries remain naturally significant consumers of coconut products, the United States is the fastest-growing coconut market, specifically for VCO and coconut water, with well-established brands Nutiva and VitaCoco. Among European countries, the Netherlands, Germany, France, Italy and the United Kingdom of Great Britain and Northern Ireland are responsible for increasing demand. Apart from consumption, the Netherlands is highly involved in processing and further

re-export: the country is ranked first in oils and fats refinery and storage, and third in biodiesel production. The EU has voluminous markets for desiccated coconut, coconut oil, coconut milk/cream and coconut

water. China – unlike the EU market, which is focused on kernel-based coconut products – imports sizeable volumes of coir fibre and activated carbon.

Figure 6: Production of coconuts by small island developing states* in the Pacific, 2016–2020 (tons)

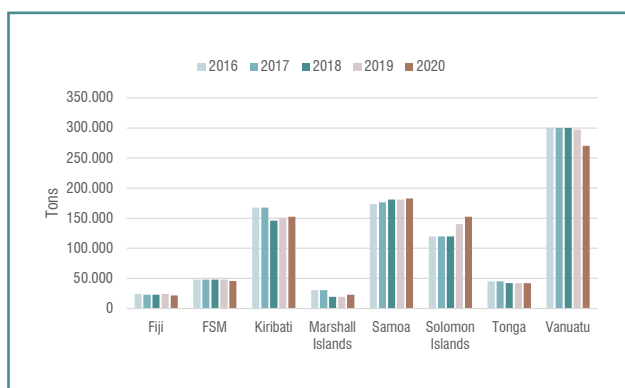
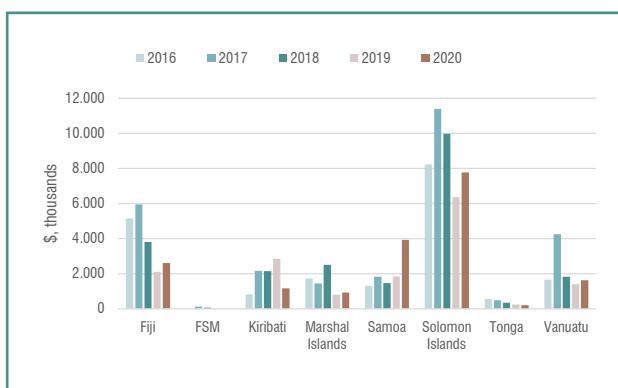


Figure 7: Exports of coconut products in the Pacific, 2016–2020 (\$ thousands)



Notes: Subproducts included in the chart are, with their HS codes: 080111 Desiccated coconuts, 080112 Fresh or dried coconuts, 080119 Coconuts other than desiccated, 120300 Copra, 151311 and 151319 Coconut oil, 230650 Oilcake, 530511 and 530519 Coconut 'coir' fibres, 570220 Floor coverings. Since there are missing data for some countries, these figures are indicative.

*Papua New Guinea is excluded from this graph to focus on smaller islands. Countries with comparatively small production do not feature on the graph.

Sources: ITC Trade Map (exports) (<https://www.trademap.org/Index.aspx>) and FAO data (production).

Small island developing states (SIDS) also show remarkable sector export performance, with concentration on a few key products. Predominantly associated with traditional coconut products, Fiji, the Marshall Islands and Solomon Islands show significant trade activity compared with the production volumes and traded values across regional peers (see Figure 6: Production of coconuts by SIDS* in the Pacific). Copra and CNO remain the two most exported products from the island

states, destined primarily for a few export destinations within the region: the Philippines, Malaysia, Australia, New Zealand and Sri Lanka. Notably, given their production capacities, SIDS exporters tend to have 1–2 key export destination for their products. For example, in 2018 almost all coconut oil exported from the Marshall Islands went to Malaysia; in 2020, more than 70% of coconut products exported from Fiji were supplied to Malaysia (see Table 1).

Table 1: Export destinations for SIDS key coconut products

	Copra (HS 120300)	CNO (HS 151311)	Coconut oil (HS 151319)	Oilcake (HS 230650)
Solomon Islands	Philippines (\$5.225 million, 39%) Bangladesh (\$1.372 million, 10%)	Switzerland (\$5.043 million, 38%)		Australia (\$448,000; 3%)
Marshall Islands		Malaysia (\$2.492 million, ≈100%)		
Fiji		Malaysia (\$632,000, 25%)	Malaysia (\$1.223 million, 48%)	
Vanuatu	Philippines (\$9.027 million; 88%), Malaysia (\$506,000; 5%), Sri Lanka (\$313,000; 3%)			

Notes: The percentage (%) shows the share of export value destined for a given import market out of the total coconut product exports of the exporting country. Due to data availability, the figures for Solomon Islands and Marshall Islands refer to 2018, while for Fiji and Vanuatu they refer to 2021. The reference is made to direct data, with the exception of Vanuatu (mirror data).

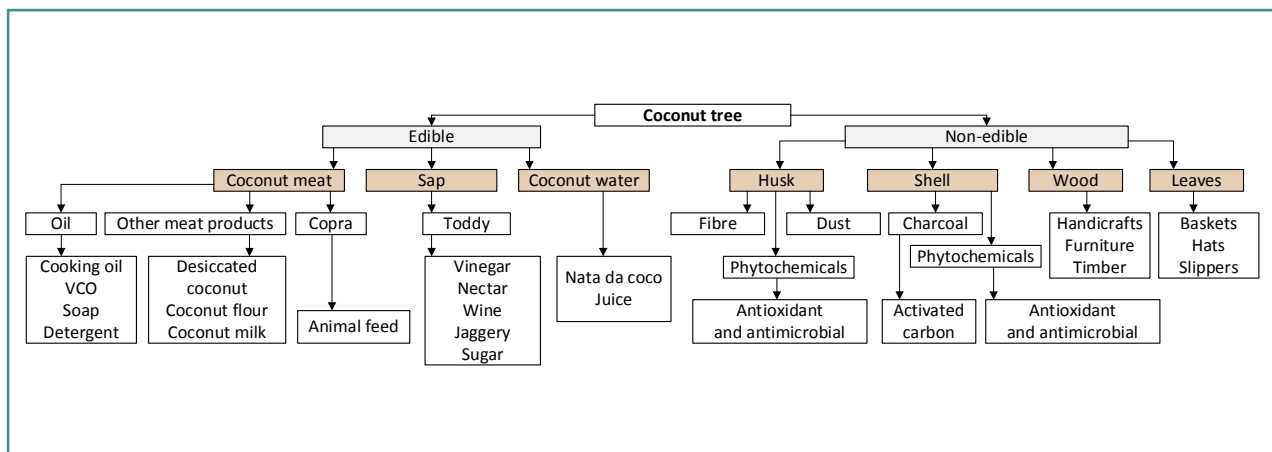
Source: Calculations based on ITC Trade Map (<https://www.trademap.org/Index.aspx>).

‘Wealth from waste’ is on the agenda

The coconut tree is often referred as a ‘zero waste’ resource of production, with each part of the tree having its commercial use and value. The world is awakening to the value of coconut trees. Producers are expanding their processing activities beyond a kernel-based product range to other parts of the fruit (e.g. testa, coir, shell) as well as the flower, trunk and leaves. The concept of ‘wealth from waste’ focuses on commercial viability and income generation from coconut by-products. The secondary products of fruit processing include

coconut water usable as a beverage; the husk, as a source of fibres, charcoal and chemicals; and the shell as a source of charcoal, activated carbon, homewares. Further value could also be extracted from testa/parings (brown skin suited for yielding oil and cake) and defatted desiccated coconut powder as ‘waste products’ from VCO production. Thanks to research and development (R&D), these parts have increasing applications in various industries as a food ingredient and as phytochemicals, fibres, biofuels and absorbents.

Figure 8: An overview of the classification of coconut products and by-products



Source: Singh et al. (2022).

Industry sustainability gains visibility

Around 60% of consumers are willing to change their shopping habits to reduce environmental impact, while almost 80% indicate that sustainability is important to them. This demonstrates that sustainability is likely to be a key factor that drives consumers' future purchases (Haller et al., 2020).

With the rising demand for and growing popularity of coconut products and their benefits globally, many multinational organizations, NGOs and giants in the food industry have come forward to help make the coconut industry sustainable while supporting farmers and suppliers.

- In 2020, Unilever signed up to the first Sustainable Coconut Charter, an industry initiative to improve smallholder incomes and livelihoods while enhancing the supply chain.
- AAK, a giant in the edible oil industry, has also signed the Sustainable Coconut Charter to support its suppliers.
- In 2019, Nestlé added coconut to its list of priority raw materials, purchasing coconut in several forms (including oil, milk and other related raw materials) and working directly with suppliers and farmers.
- ‘Nutiva’, a market leader based in the United States that sells a range of superfood products, works in partnership with its organic coconut farmers in the Philippines to source coconut products while supporting farmers' livelihood development.

Current trends add to positive industry outlook

The coconut product market is estimated to double by 2027, compared to its value in 2020 (\$11.6 billion).¹

Rising health-consciousness: Coconut products are gaining in popularity due to the public's perception that they have numerous health advantages. Some of the reported health benefits – for example, for coconut oil – include promotion of healing in the body, contribution to fat burning because of its anti-inflammatory qualities, lowering blood glucose, support in the battle against infections (antibacterial properties) and reduction of cholesterol levels (ICC, 2022c).

Dietary shift to alternative, lactose-free products: Consumers are seeking plant-based milks, butters, yogurts and cheeses. The booming dairy alternatives market shows no signs of slowing down, with expected CAGR growth of 11.2% from 2020 to 2027. Almond (61%), soy (56%) and coconut (43%), are the preferred plant-based alternatives to dairy for European consumers (Amcor, 2022).

Booming innovations: This new momentum for the plant known for millennia is underpinned by growing innovations. Thanks to technological developments, there are ways to preserve and transport previously perishable goods. A prominent example is coconut water. In the past, it was mostly consumed locally but now is available in stores all over the world. Innovations also allow for more advanced processing technologies

which result in the emergence of new coconut-based products, including creamed coconut butter, coconut milk powder and coconut water powder. R&D has uncovered other coconut applications as inputs into different industries: food, cosmetics, HH detergents, paints and coatings, soaps and textile chemicals.

International marketing of product benefits: In certain segments, coconut products have to compete with other, often cheaper alternatives (e.g. vegetable oils). To promote coconut products by establishing an appealing image, coconut research institutes and the relevant business community are continuously involved in research activities to discover and prove the benefits of the coconut. The findings of this research are then used in international marketing campaigns that contribute not only to an individual company but also to the industry in general.

Competitive landscape: There are established local and global players with their own networks of suppliers. The international majors include Vita Coco, Bio Planète, Dr Organic, Nutiva and Planet Food. Owing to globalization, most companies are actively involved in product innovation and mergers and acquisitions to maintain a considerable share within the industry. With quality at the core of certain industries (e.g. cosmetics, pharmaceuticals), one shipment of products with altered quality may affect the image of not only an individual company but an entire country.

Key takeaways

- Coconut is a 'zero waste' resource of production. Its value should be seen in its entirety, including testa, shell and husk / coir.
- The value of the global coconut market is expected to double by 2027, driven by shifts in consumer preferences towards healthier diets, innovation and an increasing product range.
- All four key segments of the coconut market show positive CAGRs, with the beverage segment expanding by almost 15%, followed by coconut oleochemicals with 13%.
- The Asia-Pacific region has absolute dominance in both domestic consumption as well as exports of coconut products.
- The export performance of SIDS is concentrated on a few key primary products supplied to 1–2 regional export markets.
- The United States, EU and China are the leading buyers of coconut products, jointly accounting for about 75% of international demand.

1.– Multiple studies, including: ICC (2022b), Fortune Business Insights (2021) and Research and Markets (2020).

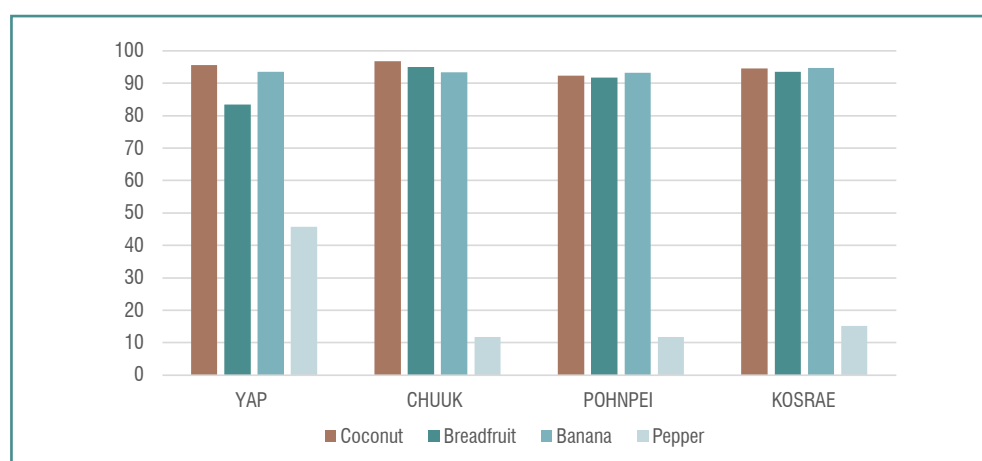
FSM COCONUT SECTOR PERFORMANCE: AWAKENING DORMANT POTENTIAL

Production overview

Coconut is an integral part of the agroforestry system of the FSM. In 2020, the FSM harvested 17,414 ha (down from 18,252 in 2019), according to FAOSTAT (<https://www.fao.org/faostat/en/#home>). Situated in the biggest coconut-producing region in the world, the country enjoys favourable climate conditions for coconut growth. Coconut trees are widespread throughout the country, on both main islands and more remote, outer islands. Coconuts are mainly grown on coastlines and upper slopes; however, they are not always easily reachable. 'The tree of life' often grows in mountainous areas where access is either limited or too difficult to be worthwhile. Trees are grown as a part of a mixed cropping system (FSM Department of Resources and Development (DRD) Statistics Division, 2019), together with other crops and tree species.

As for production capacity, Chuuk State is the largest producer of coconuts (37%), followed by Pohnpei (35%), Yap (21%) and Kosrae (7%).² Coconut trees are grown by smallholders and HHs; there are no industrial-level plantations. Chuuk has the highest number of HHs with agricultural land growing coconuts, reaching 97%. Almost all these HHs (98%) report harvesting coconuts, compared with 84% in Kosrae and 94% in the FSM in general. Due to the dominance of tall varieties, harvesting is commonly done by collecting nuts from the ground, rather than by using picking techniques. Many coconuts are not harvested and grow by themselves without human control.

Figure 9: Share of households with land for agriculture growing selected crops, by State, 2016



Source: FSM DRD Statistics Division (2019).

2.– The shares correspond to the number of trees in each island state. Vital (2013) and a 2015 Ernst & Young internal document on the business case for developing an integrated coconut processing facility that was sighted by the author; bilateral meetings with Vital.

The coconut is traditionally perceived as a subsistence crop in the FSM, particularly on remote islands. Patterns of coconut consumption vary across the country, depending on the distance to main islands, the principal source of HH income and ownership of domestic animals. Thanks to its robustness and compatibility with island conditions, the coconut tree remains a key source of livelihoods on outer islands. The coconut is used daily for various purposes: food, cooking, construction, animal feed and firewood. Rough estimates suggest that HHs on outer islands use twice as many coconuts for subsistence as HHs on the main islands (estimated 100 coconuts against 50 coconuts per week, respectively).³

Coconut trees are often left to grow naturally with no interference; seedling selection, use of organic fertilizers, pest and disease management are not typically practised by farmers. Agricultural extension services are provided by the State authorities and address a full range of crops. Agricultural extension agencies provide advice, information and other support services to farmers to improve the productivity of their crop and animal production. There is only one extension specialist who focuses on coconuts. Otherwise, most extension workers assist with general agricultural guidelines, and are

less aware of the different varieties of coconuts grown in the FSM.



coconut (pixabay), palm-1824502.jpg

Table 2: Overview of key coconut production statistics by State

	Chuuk	Kosrae	Pohnpei	Yap	FSM
Population	39 350	5 811	31 159	11 037	
HHs that grow coconuts	5 561 (96.8%)	842 (94.6%)	4 854 (92.3%)	2 044 (95.6%)	13 301 (94.7%)
HHs that harvest coconuts	5 454 (98%)	706 (84%)	4 491 (92.5%)	1 831 (90%)	94%
Number of trees	473 857	85 537	454 223	265 178	1 278 795
Senile trees*	50%	50%	50%	50% – 75%	
Average yield (bunch)	4.4 coconuts	4.4 coconuts	4.1 coconuts	3.9 coconuts	48–50 coconuts annually
Potential harvest*	23.8 million	4.5 million	22.3 million	12.4 million	≈ 60 million

Note: Estimations are based on stakeholders' perception, backed by the estimates from McGregor & Sheehy (2017).

Source: FSM DRD Statistics Division (2019), Vital (2013), McGregor & Sheehy (2017).

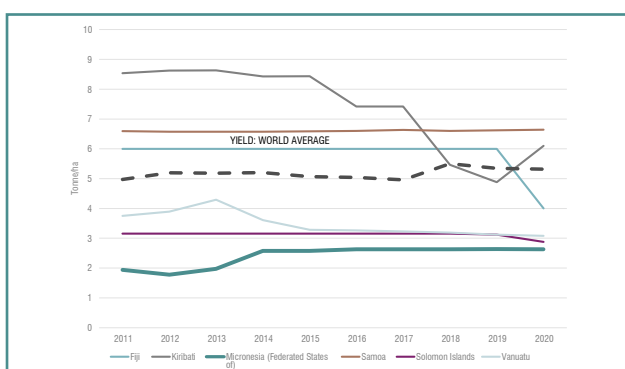
The key source of planting material in FSM is farmers' own seeds (coconuts). According to the 2016 agricultural census, most planting materials in all the four States come from 'own seeds/plants' (e.g. 88% for Kosrae, 97% for Chuuk). The selection of seed nuts is predominantly based on the visual characteristics of the nut: colour, shape and size. Establishment of coconut nurseries is not widely practised in FSM, though there

have been some individual initiatives implemented at the State level with support from the national budget. In 2019, one nursery was set up in Kosrae, which resulted in the distribution of 3,000 nuts to 30 farmers. Otherwise, adequate planting material could be identified and marked by extension agents based on certain criteria: healthy plants, good observed yield, coconut size, etc.

3.– Stakeholders' consultations, Kosrae, 11 August 2022.



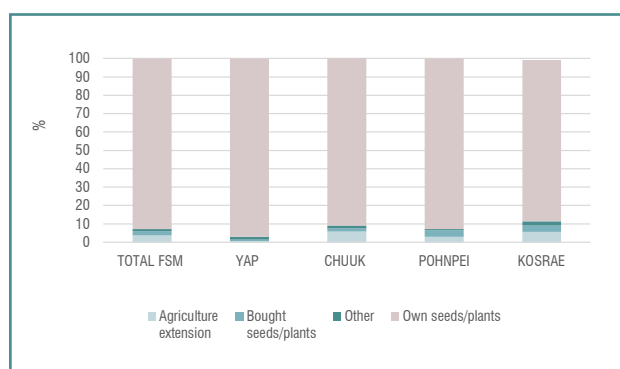
Figure 10: Yield in selected SIDS in the Pacific, 2011–2020 (tons/ha)



Note: FAO data based on imputation methodology and unofficial figures.

Sources: FAOSTAT (<https://www.fao.org/faostat/en/#home>) 2020, McGregor & Sheehy (2017), Vital (2013), World Bank (1986); FSM DRD Statistics Division (2019).

Figure 11: Source of coconut planting materials by State



The national Government has been providing assistance to replant senile coconut trees through the FSM Coconut Rehabilitation Programme since 2012. Given that an estimated 50%–75% of coconut trees in the sector are ageing and/or senile, the FSM recognized the need to foster replanting activities throughout the country. The funding of \$50,000 is allocated annually to reimburse replanting costs; each planted seedling is reimbursed at \$0.50. In the past, DRD would pay

any farmer reporting tree replantation, whether the tree grew or not. Now reimbursement is implemented after counting and validation of surviving seedlings. State authorities are supposed to monitor the status of the project in their location and report back to the national level for the consolidation of results.

Business activity: Scope and scale

Coconut is mostly perceived as a subsistence option rather than a cash crop. The sector is based on smallholder farming, with no organized industry-level plantations.⁴ Coconuts are grown by over 90% of HHS and mainly destined for immediate HH use and consumption. Only 42% of these farmers sell coconuts, the

majority of which (91%) go to the domestic market, in particular directly to consumers (43%). The priority is often given to alternative crops such as kava (*sakau*) that seem more economically appealing, easier to harvest, and fetch higher prices for primary products.

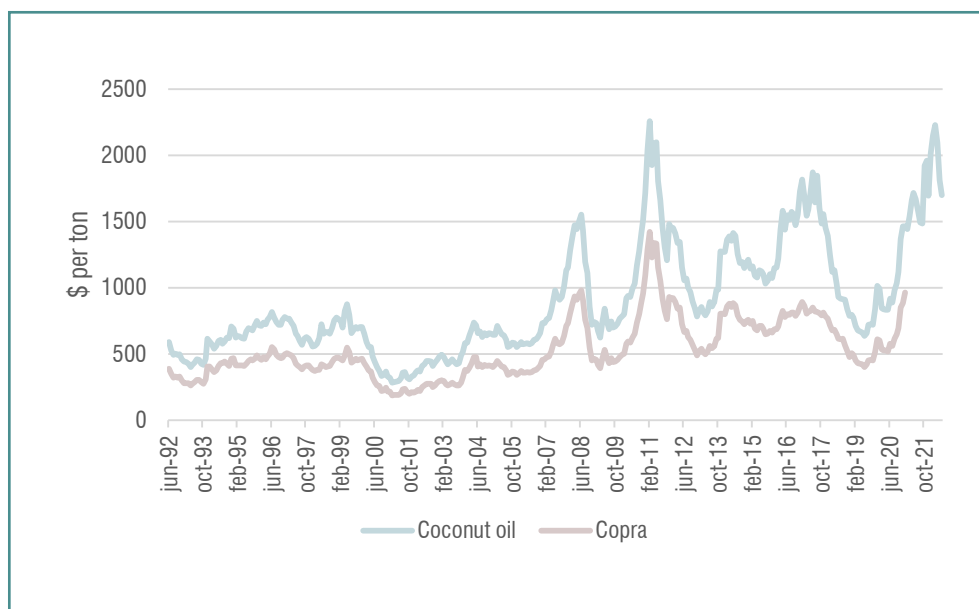
Table 3: Share of households selling coconuts by State

	Chuuk	Kosrae	Pohnpei	Yap	FSM
Number and percentage of HHS selling coconuts	2 574 / 46.3%	347 / 46%	1 514 / 31%	1 063 / 52%	41.6% – FSM average

Historically, copra was a common cash crop throughout the FSM but saw significant decline in the 1990s and 2000s. Primary coconut products were not only consumed locally but also exported to regional markets, with Japan being one of the largest destinations. In some States (Chuuk), there were some centralized trading/collection points where farmers could bring,

weigh and sell coconuts to traders who would then ship them to export destinations (mostly Japan). However, coconut production decreased and export activities dropped due to volatile prices for copra, the increasing senility of palms and transportation issues (FSM DRD, 2012).

Figure 12: Copra and coconut oil prices, 1992–2022 (\$ per ton)



Note: Coconut oil (Philippines / Indonesia), bulk; cost, insurance, freight (CIF) Rotterdam.

Source: Index Mundi (2023), based on World Bank Data Catalog (<https://datacatalog.worldbank.org/search?q=gem%20commodities>).

4.— Dr Nacanieli (Nat) Tuivalagi, Researcher, College of Micronesia.

Processing activities were further affected with the introduction and adoption of the Codex Alimentarius (original status adopted in 1963, while the FSM has been a Member since 1993) and, subsequently, national-level standards. The Codex includes standards for many foods – whether processed, semi-processed or raw – for distribution to the consumer. It consists of provisions for food hygiene; methods of analysis and sampling; food additives; pesticide residues; contaminants; labelling and other (World Health Organization, 2003). While for some coconut products it provides explicit standards – aqueous coconut products: coconut milk and coconut cream – for others it gives a general definition, e.g. for ‘virgin oils’: there is no specific standard for VCO.

At present, there are few commercial operators in island states that are involved in primary and advanced processing. Around 10–15 small businesses, often family-run or one-man operations, produce cooking oil, white kernel oil/VCO and coconut syrup/wine; and recently initiated coconut lumbering (at the municipal level in Pohnpei). On a larger scale, there is the FSM Petroleum Corporation (FSMPC, also known as Vital) with an operational processing facility in Pohnpei. Vital sources coconuts from Participant Guarantee Scheme (PGS, a formal farmer cooperative system) groups, offering \$0.15 a pound for husked coconut (Pohnpei).⁵ Current supplies of coconuts come from Pohnpei and Yap; Chuuk does not currently supply coconuts/copra and neither does Kosrae. With an initial processing



Image by Huyền Lương Ngọc from Pixabay

capacity of 5,000 per day, the current daily facility load is around 2,000 nuts (the sustainable coconut harvest is over 100,000 nuts per day (Vital, 2013)).⁶ The main outputs of the processing facility are copra, copra meal and VCO, which is further used for the production of fragrant oils and soaps.

Table 4: List of identified commercial coconut operators/processors

Level	Company name	Products
National	FSMPC: Processing in Pohnpei Isla Nesia (trademark)	Copra, VCO, copra meal, fragrant oil, soaps
Chuuk	Three processors	VCO
Kosrae	VCO small producer (Pohnpei State reseller Dionne Asher)	VCO
Pohnpei	Pingelap VCO Co-op (Contact Mayor or Melner Isaac)	VCO
Pohnpei	Salapwuk Group of coconut producers (not PGS)	Coconut oil
Pohnpei	Pakin Group of coconut producers (not PGS)	Coconut oil
Pohnpei	Pilot project with coconut lumbering (municipal level)	Lumber
Yap	Coco Inc. (group of 4–5 farmers)	Husk, shell, coir, fresh coconut milk, graded copra by-products (cake)
Yap	Moon Ngof Store	Cooked coconut oil (skin)
Yap	Coconut producer	Coconut shell handicrafts
Yap	Ifalik (Makiy compound)	Tuba (palm wine)
Yap	Palm wine producer	Tuba (palm wine)
Yap	Coconut producer	Copra, fresh coconut and coconut oil

5.– Ant atoll is another location where Vital sources coconuts, paying \$0.13 a pound to factor in the cost of transportation.

6.– The initial production capacity was planned for 5,000 nuts per day, with the ability to expand to up to 10,000 nuts per day.

Box 1: FSM economic structure

The private sector represents 22% of gross domestic product, with a major focus on retailing goods and services to the local economy. At the same time, the FSM has a large HH sector comprising subsistence and informal sector activities representing 24% of gross domestic product (as compared to 13% in the Marshall Islands and 10% in Palau). The public sector accounts for 25%.

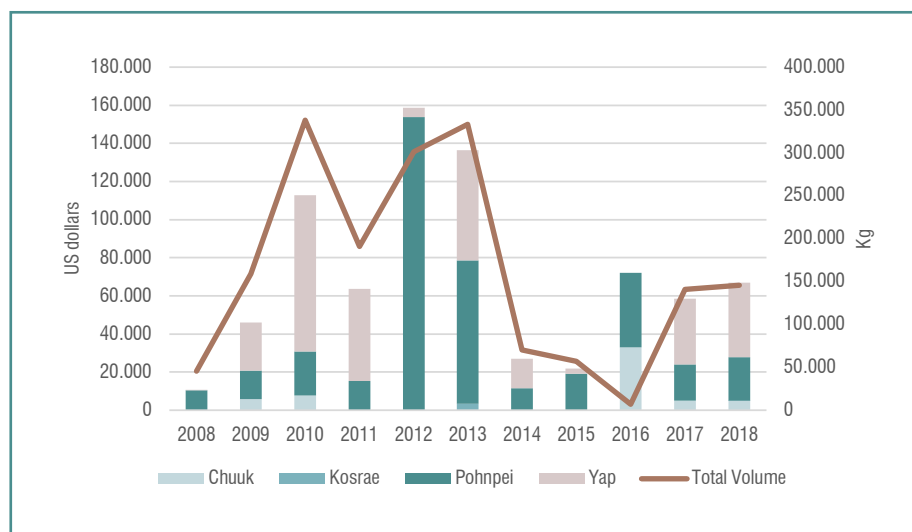
The FSM economy faced a high level of volatility between 2001 and 2019, with an average growth rate of 0.2%. In terms of fiscal structure, sovereign rents derived from fishing fees and the domicile for major Japanese corporations represent a large share of tax revenue in the FSM (43%). Grants remain a critical component of the economic landscape, at 38%. FSM's State and national planning efforts are aimed at promoting a multisector private sector-led growth strategy.

Source: Asian Development Bank (2022).

Currently, the FSM does not export significant volumes of coconut products. Small producers export micro quantities of VCO by plane to the FSM diaspora and businesses run by FSM citizens abroad. Historically, the country was actively involved in copra exporting, and more recently – until 2018 – the main export product was copra oil. Over the observed period of 2008–2018, copra oil exports were volatile, with the peak reached in 2012–2013 (see Figure 13). Pohnpei and Yap were the major exporting states; despite the fact that Chuuk

has the biggest planted area and production potential, its export activity was not prominent. In 2018, the export earnings from copra (HS 120300) amounted to \$67,000, which is far below the top 10 products exported by the FSM. The only sizeable FSM coconut export has ceased due to inefficiency, inconsistent supply and highly fluctuating commodity prices. Up until 2018, copra oil was supplied to regional island markets, including Guam and Hawaii as well as to Chinese Taipei and the United States mainland.

Figure 13: FSM copra oil exports, value (by State) versus total volume, 2008–2018



Source: FSM DRD Statistics Division.

While it is recognized that coconut resources in the country are underutilized, the FSM also imports certain coconut products. Three states – with the exception of Kosrae – import considerable amounts of coconut milk and cream (HS 21069060, 2021) from abroad. As reported by sector stakeholders, it appears easier to purchase certain products than produce them

domestically, especially due to the absence of technologies to preserve perishable goods and packaging. Interestingly, Pohnpei also imports a considerable amount of copra (HS 120300, 2019–2021). Other imported products include limited quantities of desiccated coconut, crude oil, and VCO or products thereof (see Table 5).

Table 5: Coconut products imported by the Federated States of Micronesia, 2021

HS code	Description	Unit	Chuuk		Kosrae		Pohnpei		Yap	
			Qty	CIF (\$)	Qty	CIF (\$)	Qty	CIF (\$)	Qty	CIF (\$)
08011100	Desiccated	Kg	58	85			94	642	7	103
08011900	Other	Kg	237	763	250	7 397	174	2 068	65	307
12030000	Copra	Kg					493 797	276 096		
15131100	CNO	Kg	19	185			89	835	9	65
15131990	Other	Kg	11	59			1 641	28 099	6	85
21069060	Coconut milk and cream	Kg	2 747	8 801			4 082	7 055	5 373	11 182

Source: FSM Customs data.

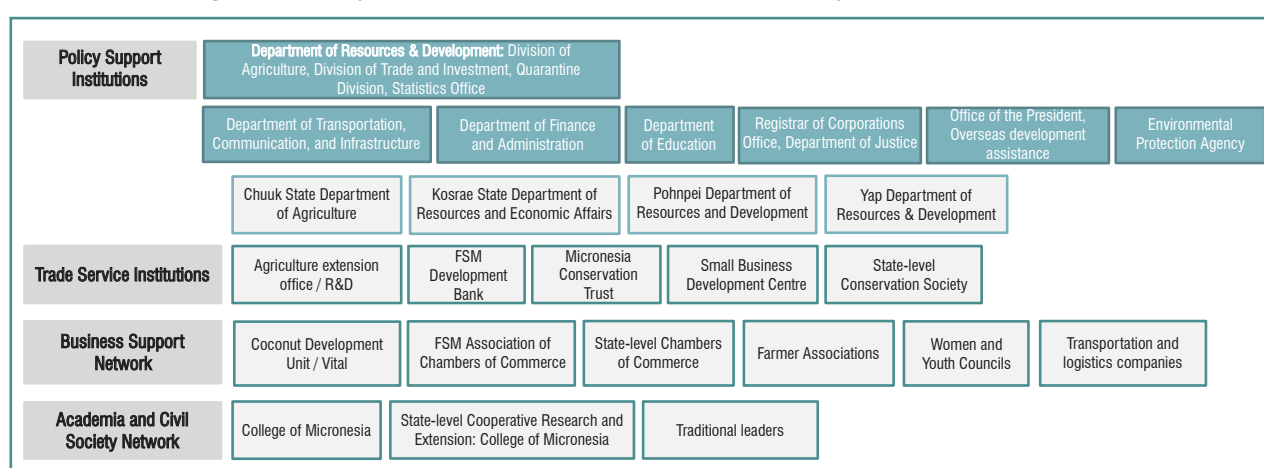
Institutional and policy framework

The coconut sector involves a range of institutions that have a direct or indirect impact on its development. The institutions can be broadly categorized into four groups: policy support, trade services, business support, and academia and civil society. While some institutions are naturally better positioned to promote sector growth, gradual development can only be achieved with coherence and consistency of sector activities by all relevant stakeholders (see Figure 14).

DRD is one of the key government units with a high level of influence on sector development, established coordination, a history of interventions in the sector and adequate human resource capacities. DRD is

responsible for policymaking, regulations, extension services, research and statistics, trade activities and other topics of direct sector interest. In each State, there is a corresponding local counterpart which has a similar scope of work and implements national-level plans and strategies, while also pursuing their own initiatives to address local needs and preferences.

In June 2014, the FSM Congress passed Public Law 18–68, commonly known as the ‘Coconut Tree Act’. This act dissolved the FSM Coconut Development Authority and transferred this authority along with all Coconut Development Authority assets and personnel to FSMPC, also known as Vital.

Figure 14: Simplified overview of FSM institutions that impact the coconut sector

Source: Stakeholder consultations August–December 2022.

Vital initiated Coconut for Life to rehabilitate the coconut industry to improve the livelihoods of the people of the FSM. The project aims to enhance capacities in the buying, selling, exporting, manufacturing, processing and distribution of copra and other products

from coconut trees in the FSM. Farmers will benefit by having a stable and continuous market for their resource. At community level, the income from regularized trade in coconuts and other agricultural products will allow communities to become less dependent on

government and foreign aid, increase food security and enhance long-term opportunities for all sections of society, including youth.

In November 2021, the President issued the Order establishing a CocoNES. The Order sets a coherent institutional framework to organize the strategic oversight and technical lead of the coconut strategy. The CocoNES framework for the FSM comprises:

1. A task force called the CocoNES Advisory Body
2. A Coconut Sector Development Coalition (CSDC)
3. A CocoNES Secretariat.

The coconut sector perspective is also oriented by the country's broader development agenda and policy framework.

FSM Strategic Development Plan 2004–2023: The National Strategy seeks to achieve sustainable economic growth and self-reliance. It prioritizes sustainable development through a selected range of sectors, including agriculture and private sector development. As per the relevant mission statement, the agriculture sector 'shall provide: (i) food security, cash incomes and healthy livelihoods; and (ii) opportunities for domestic and export markets, while promoting environmentally sustainable production within a stable and consistent policy framework'.

- Strategic Goal 1: A well-resourced and properly focused agriculture sector operating within a stable and consistent policy framework
- Strategic Goal 2: Increase production of traditional farming systems for home nutritional and traditional needs, and cash incomes
- Strategic Goal 3: Increased volumes of saleable surpluses to be marketed by the private sector into local and regional markets.

FSM Trade Policy: The key objectives include creating an environment that is conducive for investment and private sector development; addressing supply-side constraints and non-tariff barriers; promoting import substitution and exports of value-added goods and services; and promoting export-led sustainable economic growth, with the ultimate objective of raising the standard of living in the FSM. Major action areas refer to promoting import substitution, agricultural production and value addition; developing an export strategy to promote FSM products abroad; and creating conditions for private sector development.

FSM National Agriculture Policy (2022–2032): The Government is conducting a series of workshops to finalize the policy that will direct agricultural development for the next decade. The Policy will recognize both the independence of the four States, and that their plans should reflect their priorities and needs.

Currently, there are **several support programmes** directly linked to the coconut sector at both national and State levels:

- A replanting programme (funding based on reimbursement) initiated by the FSM Congress
- A funding scheme through a subsidized price of copra in the State of Yap (national funds, additional \$0.05 per pound)
- Funding to cover export shipping costs in the State of Kosrae (State initiative to support the only State exporter)
- A pilot project on coconut lumbering in the municipality of the State of Pohnpei (now applied only within the municipality)
- Coconut for Life project by Vital
- Development of a regional coconut product quality standard (in partnership with the Pacific Community, SPC).

Key takeaways

- Coconut is an integral part of the agroforestry system of the FSM; more than 90% of HHs grow coconut trees, mainly destined for immediate HH use and consumption.
- The growth of coconut trees is often left to nature with no intervention; seedling selection, use of organic fertilizers, and pest and disease management are not typically practised by farmers.
- The coconut is traditionally perceived as a subsistence crop in the FSM, not as an additional stable source of income.
- 'Everywhere, yet nowhere': while coconut trees grow all over the islands in 95% of HHs, coconuts are rarely available in cafes / restaurants.
- Historically, copra was a common cash crop throughout the FSM but saw significant decline in the 1990s and 2000s.
- At present, there are few commercial operators in island states that are involved in primary and advanced processing. Common perception has seen the value of the coconut as being in kernel-based products. The potential of by-products is largely unexplored.
- A sizeable FSM export – CNO – ceased in 2018 due to production inefficiency, inconsistent supply and highly fluctuating commodity prices.

VALUE CHAIN MAPPING

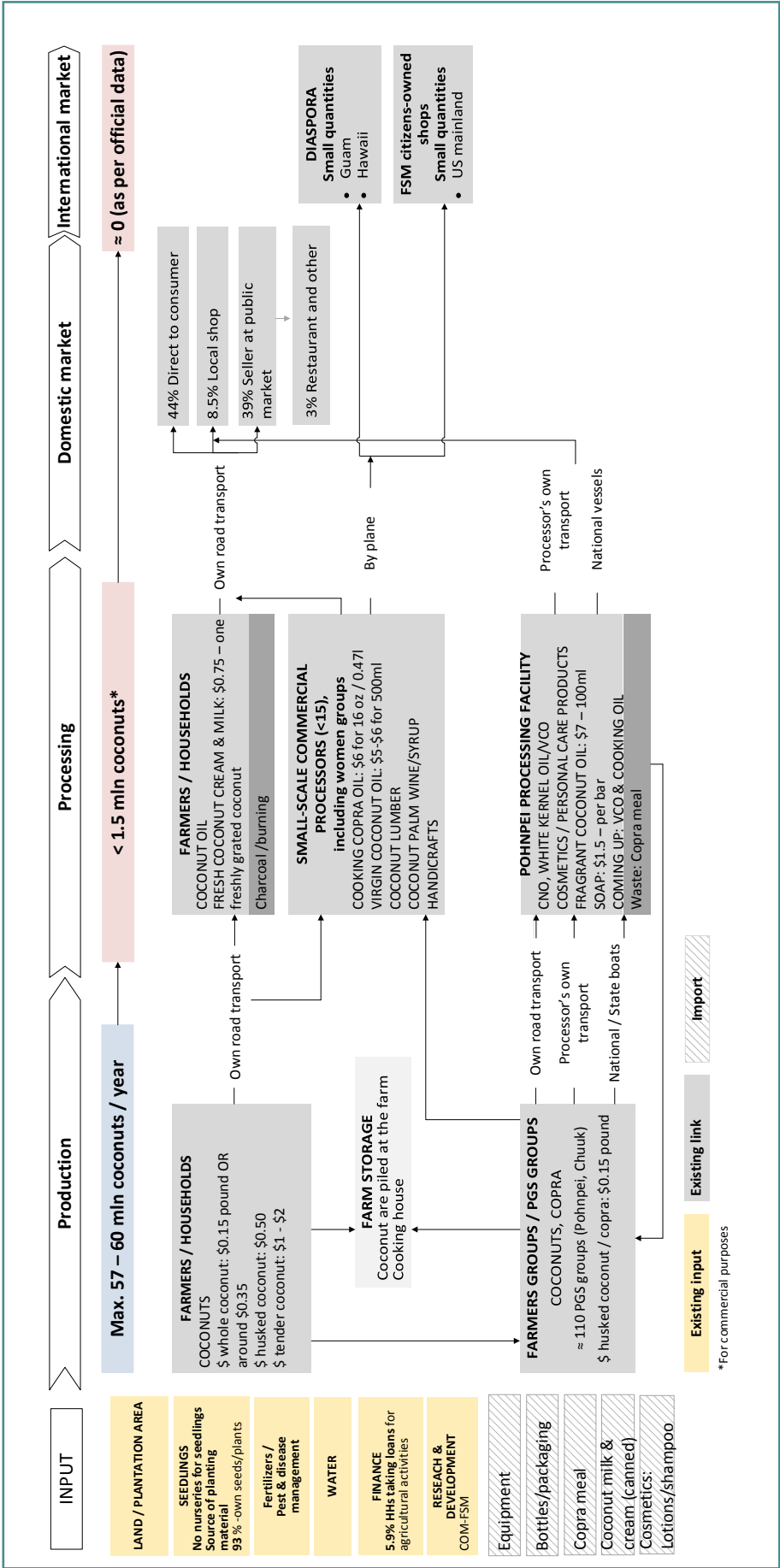


Second CocoNES stakeholders' consultations, March 2023, Kosrae @CocoNES Secretariat

Coconut sector development is nascent and the links within the value chain are yet to advance. Following the legacy of copra development back in the 1960s–1970s, the coconut sector is still heavily associated with primary products. This is reflected in the current value chain, which has hardly developed beyond coconuts and copra. The more one moves along the value chain towards processing, the fewer actors and links are present.

This map presents an overview of existing links between economic operators and their value addition during the process of product transformation. It is a consolidated version of the national-level value chain constructed through individual value chains for each of the four States. The current performance of the FSM coconut sector, domestically and internationally, suggests that the sector is challenged all along the existing value chain. The identification and prioritization of these constraints will be an essential 'ingredient' in developing a viable way forward.

Current coconut value chain in FSM



Inputs

Land: Generally, available agricultural land is already allocated to various crops. The FSM area in which coconuts are harvested accounts for 17,414 ha (2020, down from 18,252 in 2019, FAOSTAT). While the estimated area of land used for agriculture is 69,038 acres (approximately 28,000 ha, Agricultural Census (2019)), agroforestry and palm crops appear to use around 60% of the land.

One-third of HHs in the FSM report 'no land available' as a barrier to agricultural development.⁷ Thus, unlike some coconut-producing countries (Indonesia, Philippines),⁸ expanding the area planted with coconut in the FSM is less of an option to increase the coconut yield. To increase yield, the country can consider removing senile, unproductive and diseased trees, replanting them with quality seedlings. The share of senile coconut trees in the country is estimated to be high (50%–75%).

Planting material: Farmers predominantly use their own seeds to replant coconut trees (93% of HHs in the FSM). Nurseries are established and seedlings distributed only occasionally, mainly within individual projects or government initiatives. Previously, seedlings from Yap – due to the perceived quality of its coconut trees – were selected and distributed to other States. The selection of seedlings is predominantly based on the visual characteristics of the nut: shape and size.

Organic fertilizers: FSM has naturally favourable conditions for coconut growth. Coconut trees often grow with mixed crops as part of the agroforestry system. Fertilizers are not commonly used in this setting. Due to the perception that coconut palms grow wild and do not require additional effort, replanting activities do not necessarily result in high-yield trees.

Pest and disease management: This task is organized at the national level within DRD, with extension into the States. Farmers may flag their concerns to State authorities who then initiate inspection/ investigation activities. Pests are present⁹ but they are not seen as being a high risk. However, there are potentially dangerous pests in the region. Particularly, Guam has the coconut rhinoceros beetle, a serious insect pest of coconuts, resulting in significant yield losses and tree mortality.

R&D: currently, there is no coconut-specific research. In Kosrae, DRD cooperates with the College of Micronesia (COM-FSM) Cooperative Research and Extension Unit (CRE) for research on resilient varieties, focusing on crops that hold onto the soil, including the coconut palm.

Tools and equipment: Tools for harvesting are not (widely) used; coconuts are mostly picked up from the ground. Basic de-husking tools are available. Equipment for commercial-level processing (as well as packaging) is imported.

Production

Coconut production is carried out by smallholders and HHs (about 95% of HHs grow coconuts on their agricultural land), as in many coconut-producing countries. Some farmers organize into informal farmer groups to collectively reach the volumes required for processing or export. In 2018, the FSM introduced a formal cooperative system – PGS – to organize farmers into registered entities to stabilize supply of coconuts into the existing processing facility.

Under favourable conditions, tall coconut palms start flowering five years after planting (three years for dwarf varieties), with fruits ripening within 11–12 months. The palm produces 12–15 inflorescences each year; this leads to the formation of a bunch of coconuts every month. In the FSM, the number of fruits varies from 3.8 to 5 coconuts per bunch. Given the estimated 1.3 million trees in the FSM, potential production capacity adds up to around 60 million coconuts per year. Chuuk is the biggest coconut-producing State, closely followed by Pohnpei, then by Yap and Kosrae.

7.– FSM DRD Statistics Division (2019).

8.– FAO data, 2020.

9.– According to correspondence with John P. Wichap of FSM DRD, a China Academy of Tropical Agricultural Science assessment 2017–2019 identified the following insect pests and a weed affecting coconuts: insect pest, coconut beetle – *Brontispa longissima* (mainly affecting dwarf coconuts); insect pest, moth – *Agonoxena pyrogramma* (all varieties); weed pest / vine – *Merremia peltata*. Coconut rainbow termites are present in Kosrae and little fire ants in Yap, among others (FSM DRD).

Box 2: Locally focused quality assurance mechanism: Participatory Guarantee System

The notion of the Participatory Guarantee System is still novel to local communities. In 2018, the FSM introduced the system to formalize farmer groups as a locally focused quality assurance mechanism. A PGS group guarantees to provide a certain quantity of produce (coconuts), of a certain quality standard and at a certain time, such as every month. The buyer will guarantee to buy the quantity guaranteed by the suppliers (as a minimum), at a certain guaranteed price, at a set time.

There are currently PGS groups in Pohnpei and Chuuk, at different stages of maturity. Two other States remain uncovered and are yet to explore the role and benefits of the proposed system. Moreover, certain principles and values of the system remain largely unexplored, such as peer learning, trainings, management of common funds, etc.

Education, training and information – PGS groups are encouraged to provide education and training for their members. One PGS group aim is to help build the capacity of their communities.

Cooperation among PGS groups – PGS groups serve their members most effectively and may strengthen the group marketing movement by working together through local, national, regional and international structures. There may be a peak body that can serve PGS groups.

Source: FSM (2018).

Harvesting and postharvest management

Coconuts are harvested (or rather collected from the ground) over-matured, which affects the quality of the coconut, its meat content and further processing. After collection, coconuts are generally stored at the farm: either piled up or in jute bags under trees/the cooking house. Coconuts of different maturity are collected together. To ensure supply, processors currently accept

coconuts even of lower quality. If supplying the processing facility, coconuts are normally de-husked on-site by suppliers (farmers/HHs) which decreases the weight of the coconut, resulting in substantial savings in transportation. At the same time, husk –with its potential commercial value– often remains unused.

Box 3: Storage upgrade to meet Hazard Analysis and Critical Control Point designation: The case of Fiji

Food-grade products have to conform to strict production and processing requirements to ensure food safety for consumers. Taking a step forward, the Fiji Coconut Millers factory in Savusavu renovated its storage space and can now store whole coconuts in a more hygienic setting. Before the upgrade, coconuts were stored on the ground, where they would come in contact with muck and grime, making the processing operations performed unsanitary. The project on storage area improvement, costed at \$80,000, was completed. The Government contributed \$70,000, while Fiji Coconut Millers covered the remaining expenses. The company has also achieved Hazard Analysis and Critical Control Point (HACCP) designation for its food-grade products as a result of the storage space being renovated. In order to lower the danger of contracting any foodborne illness, the HACCP system outlines how to monitor the entire food system, from production to consumption.

Source: ICC (2022b).

Processing

At the commercial level, the FSM has around 10–15 small-scale processors, mostly one-man operations, which either use their own coconuts or buy them from farmers. The main output, derived from the coconut kernel, is VCO. Apart from kernel-based production, there is a range of products made from other parts of the coconut and coconut palm tree in small quantities: coconut vinegar and wine (inflorescence), coconut lumber (wood), coconut jewellery (shell) and baskets (leaf).

There is one bigger processing facility with a maximum capacity of 10,000 nuts per day, currently

operating under 50%. The enterprise enters a formal contractual relationship with PGS groups to get supply of de-husked coconuts and copra of agreed quality and quantity, while the buyer guarantees the price. The processing facility currently gets its supply of de-husked coconuts from Pohnpei and copra from an outer island of Yap. The supply is heavily dependent on PGS operational readiness and transportation links. The key processing outputs are CNO, white kernel oil/VCO and copra meal as a by-product. VCO is used to produce fragrant oils and soaps.

Marketing and distribution

More than 90% of coconuts sold by HHs go to the domestic market, primarily directly to consumers (43%) and public markets (29%). As highlighted by stakeholders, there is no consistent and regular domestic market. Many operations are conducted on demand and as a source of quick cash.

Small-scale processors distribute their products locally directly to consumers, markets and shops. Packaging is basic, often re-using plastic bottles and containers. As for exporters, they work with the FSM expat community (often family and friends), supplying

small quantities of products to their shops, and through the diaspora. The export destinations are the regional markets of Guam, Hawaii and the United States mainland, where there is a rather large FSM expat community.

The processing enterprise in Pohnpei supplies its products – fragrant oils and soaps, packaged and branded under its own trademark ‘Isla Nesia’ – to shops in Pohnpei, Chuuk, and more recently Yap. Copra meal is distributed back exclusively to PGS groups. As for larger-scale exports of copra oil, according to statistics, they ceased in 2018.

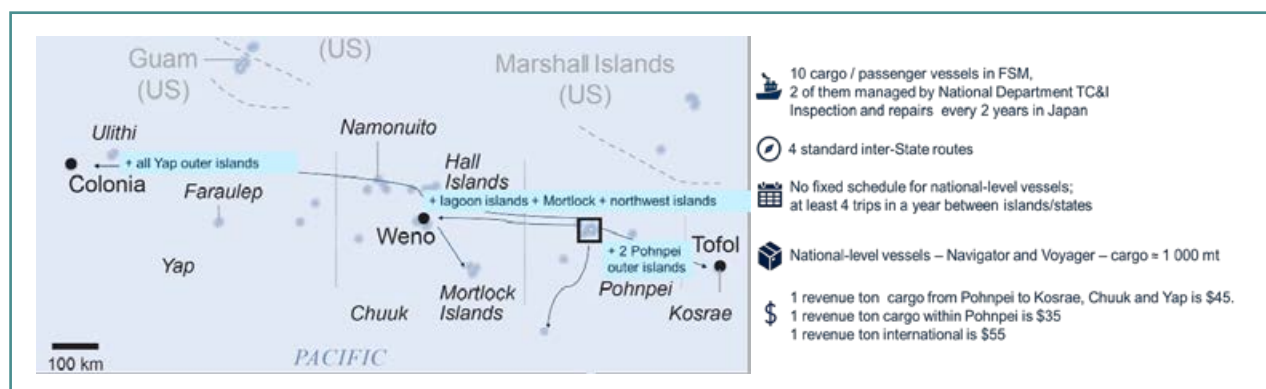


coconut (pixabay), coconut-oil-on-wooden-spoon-2090575.jpg

Mode of transportation

In the case of the FSM, goods –especially in the bulk category– are mainly carried by sea transport. Marine transport is often an optimal option for island countries to deliver cargo within its territory as well as abroad.¹⁰

Figure 15: Schematic routes of nationally operated vessels



Note: RT = revenue ton.

Source: ITC compilation based on information from FSM Department of Transportation, Communication and Infrastructure, and Pohnpei Port Authority.

State level: Chuuk (one unit + one to be purchased), Pohnpei (one unit + one to be purchased), and Yap (two units) have their own vessels, managed by the corresponding State Department of Transportation.¹¹ The boats connect outer islands with the main State island; their cargo capacity is often limited. Kosrae, the State without outer islands, does not have its own vessels. In the case of smaller remote islands, the infrastructure does not always allow for national and/or State vessels to dock, and requires using smaller connecting boats.

Commercial private ships/boats: There are several commercial private operators renting small boats in Chuuk and Pohnpei. They normally take closer routes than those by State-owned or national lines. In Pohnpei, privately owned boats do not service outer islands nor inter-State routes. They operate around closer islands such as Ant and Pakin. Cargo capacity seems minimal.

International shipping lines: Private shipping agents co-ordinate with international ships, owned by the Mariana Express Lines and Kyowa shipping companies (Matson now use Kyowa to transport their containers as they no longer have their own vessel servicing the islands).

Table 6: International shipping lines through FSM

Service company	State	Frequency	Destinations
Kyowa Shipping Company	Chuuk–Pohnpei–Kosrae	Every 14 days	Guam, Busan (Republic of Korea), Yokohama–Tokyo (Japan)
Kyowa Shipping Company	Chuuk–Pohnpei–Kosrae	Every 11–16 days	Marshall Islands
Mariana Express Lines Shipping	Yap–[Palau]	Every 14 days	Hong Kong (China)
Mariana Express Lines Shipping	Kosrae–Pohnpei	Every 14 days	Nansha/China

Sources: Stakeholders' bilateral discussion, Mariana Express Lines (2023), Kyowa Shipping Co., Ltd (2023).

10.– The price for one revenue ton (RT) of cargo from Pohnpei to Kosrae, Chuuk and Yap is \$45; within Pohnpei is \$35; and international is \$55. An RT is a unit measure used in marine transport, on which a shipment is freighted. Cargo is rated as weight or measure depending on the commodity. Weights are based on metric tons and 1 metric ton = 1,000 kg (2,205 lbs.). Measures are based on cubic metres (m3).

11.– Interview with Tomas Kostka, FSM TC&I, May 2022.

Key takeaways

- Following the legacy of copra development back in the 1960s–1970s, the coconut value chain is still heavily associated with primary products.
- Out of a maximum production capacity of 60 million coconuts per year, only around 1.5 million are processed, and almost none of these products are exported in sizeable quantities.
- At the input level, prominent sector ‘ingredients’ refer to planting materials, tree maintenance, R&D, and the availability of manpower and tools.
- At the production level, the main actors are smallholders and HHs; in 2018 the FSM introduced a cooperative model to organize farmers into PGS groups.
- Coconuts are harvested over-matured, which affects the quality of the coconut, its meat content and further processing. To ensure supply, processors now accept coconuts of lower quality.
- In terms of formal commercial activity, FSM has around 10–15 small-scale processors, mostly one-man operations. There is one bigger processing facility, with CNO and VCO as two principal outputs.
- Marine transport is a common option to deliver cargo; current transportation links appear asynchronous, which results in delivery delays and coconut quality deterioration.
- Regarding markets, fresh sector produce and limited processed products are now sold domestically, and micro quantities of VCO are shipped by airfreight to FSM citizens abroad.



Port in Pohnpei, @ITC



COMPETITIVENESS CONSTRAINTS

The coconut sector in FSM has been dormant, challenged with pressing issues. In contrast to vibrant copra export activities in the second half of the twentieth century, current sector performance has declined and narrowed down to subsistence and a quick cash option. Sector stakeholders face multiple constraints limiting inclusive and sustainable industry growth. Identifying these constraints and prioritizing which ones need to be addressed most urgently are essential to developing a viable way forward.

The identified constraints affect the capacities of coconut producers and processors, the quality of the business environment and market entry. At the farm/HH level, the challenges cover production inputs, practices, links and availability of manpower. Processing is further constrained by inconsistent coconut supply and limited tools, technologies, knowledge and skills. As for the business environment, limitations are related to

regulatory reforms, the institutional framework, the quality of business support and finance. While export activity is in microvolumes (not featured in official statistics) to very specific buyers, market entry is compromised by inability to conform to entry requirements, trade support services, promotion and branding.

Coconut sector performance in the FSM is also inevitably connected to development considerations. Given the sensitivity of island states to climate change, the Government is mindful of its natural resources and environmental sustainability. Inclusive business practice is another concern raised by stakeholders. The relevance of the coconut tree is paramount for outer islands, where economic opportunities are limited; however their remote location from main islands adds to the complexity of sector links. The sector is also seen as capable of creating new opportunities for youth and women.

Supply side

Main problem	Root causes	Plan of Action (PoA) reference
Limited availability of quality planting material and inadequate planting techniques reduce production capacities	<ul style="list-style-type: none"> • Scarce R&D and no audit of existing coconut varieties; no research on hybrid varieties • No organized and systematic approach to selecting, preparing and distributing seedlings; no functioning commercial nurseries 	1.1.2–1.1.4, 1.2.3
Insufficient tree management / maintenance – including keeping senile, unproductive and diseased trees – affects yield throughout a tree's life cycle	<ul style="list-style-type: none"> • Lack of awareness of good agricultural practices (GAP); very few coconut-focused extension specialists • No incentive to remove old trees and replant • Challenging access to certain land planted with coconuts 	1.1.5–1.1.6, 1.2.1
Limited availability of manpower affects coconut production and harvesting, which translates into inconsistent supply	<ul style="list-style-type: none"> • Outmigration, remittances • Preference for less arduous work in office jobs / the public sector • Limited time allocation, 'weekend farmers' 	1.1.7, 1.3.2
Basic or unavailable tools and technologies for harvesting and processing limit the sector to fresh produce upon HH demand	<ul style="list-style-type: none"> • No commercial interest and available funds / financial support for small farmer groups • Lack of awareness among farmers 	1.2.2, 2.2.5, 2.3.1
Limited storage practices and the absence of storage and postharvest facilities and services cause delays in coconut supply and product line expansion	<ul style="list-style-type: none"> • No consistent large-volume buyers of coconuts • Lack of investment 	1.3.4

LIMITED AVAILABILITY OF QUALITY PLANTING MATERIAL AND INADEQUATE PLANTING TECHNIQUES REDUCE PRODUCTION CAPACITIES

There is limited understanding and knowledge of varieties, both those already available in the country and those with potential in the context of the FSM. Information on the present coconut types is not organized or recorded, and R&D activities have been ad hoc and limited. Decisions about replanting materials are left to farmers, who do not necessarily have relevant skills and knowledge. Understanding and knowledge of varieties suited for specific coconut products is also limited. Consequently, replanting efforts may not bring expected results in higher coconut production.

Further, even though adequate planting material allegedly exists in the States, there is no organized and systematic approach to selecting, preparing and distributing seedlings. Stakeholders report that coconut seedlings from Yap¹² were used as good planting material for some past initiatives. However, nurseries are established and seedlings distributed only occasionally, mainly within individual projects or government initiatives (for example, Kosrae distributed 3,000 coconut trees to 30 farmers in 2019).

INSUFFICIENT TREE MANAGEMENT/ MAINTENANCE – INCLUDING KEEPING SENILE, UNPRODUCTIVE AND DISEASED TREES – AFFECTS YIELD THROUGHOUT A TREE’S LIFE CYCLE

It is generally perceived that coconut trees can grow wild, without any farmer intervention. This ‘passive’ approach to coconut growing, coupled with nonexistent tree management, may result in lower tree productivity. While the coconut tree is indeed less demanding compared with other tree crops, it does require regular maintenance and monitoring. Limited awareness of GAP by farmers and very few coconut-focused extension specialists may translate into lower tree productivity and, more broadly, sector profitability.

Further, keeping senile, unproductive and diseased palm trees limits sector productivity. The share of senile coconut trees in the country is estimated to be high

(50%–75%). The owners or custodians of ageing coconut plantations may be either unable or unready to finance tree removal and replantation, given the time before new plantings become productive. The perceived benefits (cultural, cash income, subsistence consumption, by-products and environmental) are insufficient to justify the costs. Moreover, Kosrae State reported having regulations that may restrict the use of land for coconut production. According to the existing rules (Title 19, Kosrae State Code), the clearing of elevated land (farmer- or State-owned) requires development approval from various authorities (Environmental Protection Agency / Kosrae Department of Resources and Economic Affairs, Kosrae Island Resource Management Authority).

Coconuts are mainly grown on coastlines and upper slopes; however, they are not always easily reachable. ‘Difficulty getting to the land’ is listed as one of the barriers to agriculture by 26% of HHs.¹³ ‘The tree of life’ often grows in mountainous areas where access is either limited or too difficult to be viable. Farmers would rather plant alternative crops that can easily be grown in their backyard rather than take long and strenuous walks to access coconut palms.

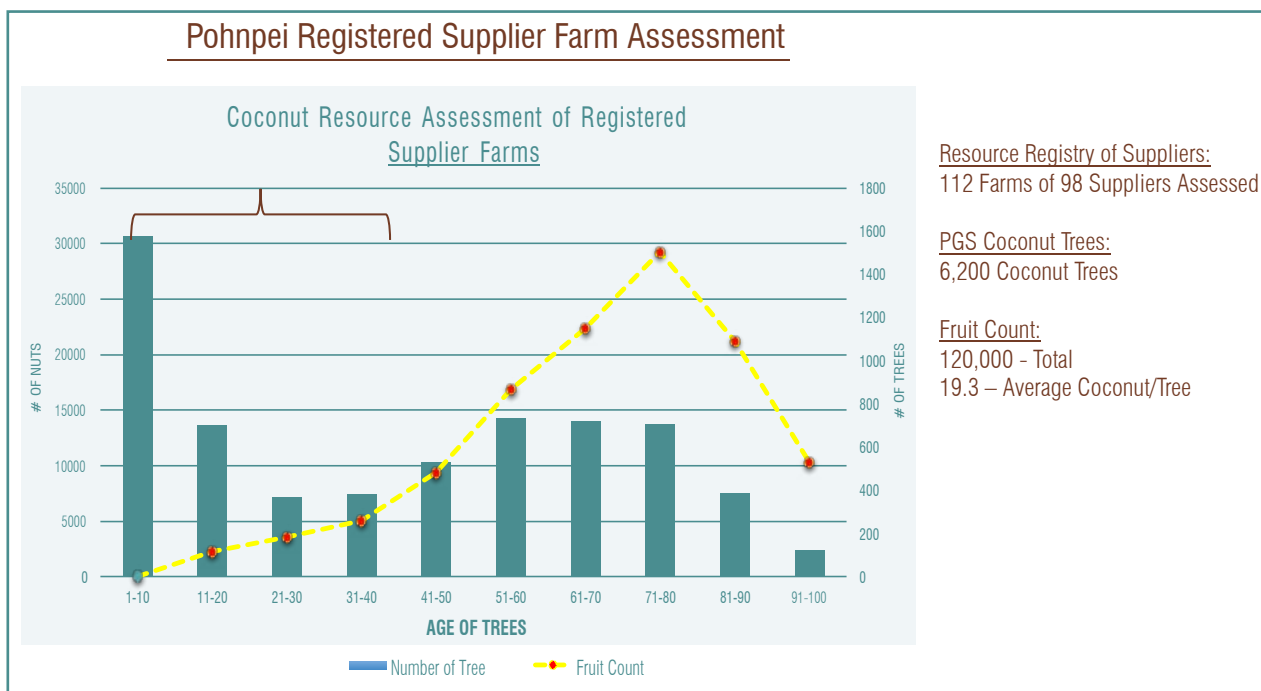
LIMITED AVAILABILITY OF MANPOWER AFFECTS COCONUT PRODUCTION AND HARVESTING, WHICH TRANSLATES INTO INCONSISTENT SUPPLY

Multiple factors contribute to this issue, including outmigration, a preference for office/public sector jobs, ageing farmers and farming being a part-time occupation for many coconut farmers. Outmigration has been increasing recently and may total more than 45,000 people by 2023.¹⁴ Those who settle down abroad send remittances back home, which also affects the need to engage in any economic activity. Also, coconut production is often a secondary source of income or a quick cash option. In this context, ‘weekend farmers’ engage in coconut activities during their spare time. Most of their primary jobs are in the public sector. Some 25% of HHs reported agriculture as the main source of cash income; while only 14% were focused on growing crops. Further, many farmers require assistance due to coconut cultivation’s arduous nature and demands on time. Assistance in this context refers to manpower

12.– According to Vital (2013), the fresh kernel weight per nut of coconuts in Yap (0.50 kg / nut) is much greater than all other states (Kosrae 0.35 kg/nut and Chuuk to Pohnpei 0.36 to 0.4 kg per nut). Historically, Yap was said to have the most genetically suitable coconut seeds, according to the United States Department of State. In the 1950s–1960s, 220,000 selected coconut seed nuts were sent to Rota, Truk, Ponape and the Marshall Islands from Yap (see Bourdeix, 2019).

13.– FSM DRD Statistics Division (2019).

14.– Asian Development Bank estimates (see Asian Development Bank, 2022).

Figure 16: Coconut resource assessment of Pohnpei Participant Guarantee Scheme farms, 2019

Source: Vital (2013).

as well as tools and technologies that would facilitate farmers' work.¹⁵

BASIC OR UNAVAILABLE TOOLS AND TECHNOLOGIES FOR HARVESTING AND PROCESSING LIMIT THE SECTOR TO FRESH PRODUCE UPON HH DEMAND

Farmers lack the necessary mobile equipment to collect and de-husk coconuts on the spot. Coconuts collected are naturally fallen, not harvested; and coconuts of different maturity are collected together, which is not optimal for processing. Primary processing is essential to rationalize transportation, especially at the pick-up point in remote and/or mountainous areas. For example, in practice, one bag fits around 10 whole or roughly 50 husked coconuts. Currently, de-husking is a manual process performed with basic tools (for example, a pointed tool or spike) by individual farmers. This labour-intensive activity requires substantial manpower and time. (Coconut) farmers' associations or PGS groups could obtain and loan some equipment to their members to facilitate harvesting and delivery to storage facilities.

LIMITED STORAGE PRACTICES AND THE ABSENCE OF STORAGE AND POSTHARVEST FACILITIES AND SERVICES CAUSE DELAYS IN COCONUT SUPPLY AND PRODUCT LINE EXPANSION

Coconuts are either piled at the farm or stored in cooking houses. Existing storage systems are neither sustainable for primary output nor suitable for processed products or by-products (shell, husk, flakes). Proper storage is an essential prerequisite for getting production and processing certificates to supply products to external markets.

Primary processing such as copra extraction can be carried out at the farm gate or at the community level. Initial processing activities do not require heavy capital investment; however, farmers need to have basic equipment and conform to certain quality requirements, which are often an issue. With proper techniques and skills, basic processing can be adequately implemented by a small producer before further processing. The quality aspect is of utmost importance for niche/boutique products where smaller island states could establish their competitiveness.

15.— Some of the equipment includes a ladder operated by a power tiller, a coconut tree climber machine, a coconut picker, etc.

Business environment

Main problem	Root causes	PoA reference
The inconsistent price of primary products – whole/husked coconuts, copra – discourages farmers from engaging in coconut harvesting	<ul style="list-style-type: none"> Other crops (betel nut, <i>sakau</i>) get higher prices with lower effort Coconut's value is perceived to be mainly in the kernel; water, shell and husk are mostly wasted 	1.4.2–1.4.5, 1.1.6
Fragmented sector organization blocks the establishment of a sector supply chain and growth	<ul style="list-style-type: none"> Absence of coconut-oriented farmer associations Limited dialogue between farmers / business and national authorities Unclear classification of PGS groups for incorporation at the national level 	2.1.3, 2.1.5, 2.2.5
The lack of a coherent institutional framework for the management of coconut resources leads to scattered sector information and limited accountability	<ul style="list-style-type: none"> Coconut has not been high on the agenda until recently Previously, no targeted approach to sector development 	1.1.1, 2.1.1, 2.2.1
Unreliable sea transportation for both 'inter-State' and 'intra-State' vessels leads to unpredictable, disruptive coconut supply to processing facilities	<ul style="list-style-type: none"> Limited number of cargo vessels, limited space on them Inconsistent schedule High maintenance costs and limited funding Few private operators, with high costs 	1.3.1, 1.3.3
Limited awareness of coconut sector opportunities: the sector's association with primary products affects product diversification activities within the sector	<ul style="list-style-type: none"> No awareness about products that can be made profitably and no knowledge of processing Limited sector-relevant vocational trainings Underdeveloped business and entrepreneurship skills No sector associations focused on sector development 	1.1.7, 1.2.4, 2.2.6
Limited sector-specific institutional support to the private sector restricts development options, particularly for farmers and small and medium-sized enterprises	<ul style="list-style-type: none"> Coconut has not been high on the agenda until recently Limited capacities of sector institutions 	1.2.2, 2.3.1–2.3.4

THE INCONSISTENT PRICE OF PRIMARY PRODUCTS – WHOLE/HUSKED COCONUTS, COPRA – DISCOURAGES FARMERS FROM ENGAGING IN COCONUT HARVESTING

The coconut industry is generally associated with primary products (copra), intensive labour and low returns. The coconut value chain requires a holistic approach to unlock value. Currently, the commercial value of the coconut in the FSM is seen only in kernel-based products, while other parts, in particular shell and husk, are left unutilized. In this context, other crops may seem more commercially viable and profitable, such as *sakau* and betel nut. Coconuts are currently bought for \$0.15 per pound; the *sakau* price can be 30 times higher per pound, ranging from \$5 to 10; betelnut can provide farmers with \$150 for a bucket.

FRAGMENTED SECTOR ORGANIZATION BLOCKS THE ESTABLISHMENT OF A SECTOR SUPPLY CHAIN AND GROWTH

The absence of farmer/sector associations focused on the coconut sector affects sector links and cooperation.

Once coconuts are harvested, the connections between producers, collectors and processors are virtually nonexistent. This leads to the primary product being sold by HHs/small-scale farmers directly to consumers (44%) and at the local market (39%), mainly with no or little value added. Sector stakeholders have neither visibility on sector opportunities and potential development, nor incentives to direct their limited resources, time and effort into the sector.

Unclear classification of PGS groups for incorporation at the national level results in incomplete formalization of legal entities. Currently, the system prescribes the registration of the groups with national authorities to ensure a harmonized approach across the country (State-level requirements may differ). The registration process is mainly incomplete: PGS groups are registered with the processor but not with national authorities. This situation prevents groups from opening a common bank account and adds to the complexity of buyer–supplier payments (payments through individual cheques directly to farmers).

Insufficient dialogue between farmers / business and national authorities leads to limited awareness of pressing private sector issues. Currently, sector needs are

not substantially covered within farmer associations and chambers of commerce. Due to a broad institutional scope as well as the sector's low profile, these organizations may not specifically focus on the immediate concerns of coconut stakeholders. Public–private dialogue between policymakers, business support institutions and relevant private sector stakeholders is mostly ad hoc and inconsistent.

THE LACK OF A COHERENT INSTITUTIONAL FRAMEWORK FOR THE MANAGEMENT OF COCONUT RESOURCES LEADS TO SCATTERED SECTOR INFORMATION AND LIMITED ACCOUNTABILITY

The roles and responsibilities of State and national-level institutions in managing sector development are not necessarily clear. The coordination gap between the authorities translates into limited information-sharing and coherence of sector activities. Currently, coconut-related data collection is neither systematized nor organized regularly. Available information is scattered across different studies, institutions and websites, and often presented in an aggregated manner. There are very few reports that provide relevant details to define the FSM sector profile. The 2016 *FSM Agricultural Census* and the 2013 *Coconut Resource Assessment*, produced by Vital, are the latest available references on the coconut sector.

UNRELIABLE SEA TRANSPORTATION FOR BOTH 'INTER-STATE' AND 'INTRA-STATE' VESSELS LEADS TO UNPREDICTABLE, DISRUPTIVE COCONUT SUPPLY TO PROCESSING FACILITIES

The geographical spread of FSM islands is inevitably exposed to connectivity concerns. The outer islands are particularly affected, as their income sources are limited and they are heavily reliant on the primary agricultural sector.

Relatively high cost of transport: Transportation costs appear significant due to the scattered archipelago structure of the country, increasing fuel prices and maintenance costs. The current volume of sector output does not allow for economies of scale and translates into a higher per unit cost of production.

Limited availability of transport: Depending on the location of coconut tree plantations, internal logistics may involve both inland and maritime transportation modes. For mountainous areas, the first concern comes with the availability of all-terrain vehicles. Once coconuts are delivered closer to the port, the next challenge relates to available vessels.

Inconsistent schedule: The existing schedule does not enable continuous coconut supply from the farm to the processing facility. Generally, the Government tries to ensure at least one trip to each State per quarter. However, the transport arrangements are often inconsistent and remote islands have to wait much longer for service, up to 6–9 months. Given that coconut trees produce fruits year-round, the delay in collection deteriorates the quality of stored coconuts.

LIMITED AWARENESS OF COCONUT SECTOR OPPORTUNITIES: THE SECTOR'S ASSOCIATION WITH PRIMARY PRODUCTS AFFECTS PRODUCT DIVERSIFICATION ACTIVITIES WITHIN THE SECTOR

For years, the main exports of the coconut sector to international markets were copra, and CNO and its derivatives. During the 1960s–1980s, copra was a common cash crop in the FSM, with established destination markets in the region. However, the relatively low productivity of the coconut tree combined with the substitutability of coconut oil and price volatility resulted in a decline in copra production in many Asian countries (Prades et al., 2016). In 2018, export of copra from the FSM almost ceased.

Limited sector-relevant vocational trainings have resulted in a lack of skills and practical knowledge. Coconut-focused vocational education is organized on an ad hoc basis and linked to individual development projects implemented in the country or the region. Recent initiatives include a risk management and mitigation training within the Coconut Industry Development Programme (McGregor & Sheehy, 2017); a project on replanting of staple food crops in Madolenihmw, Pohnpei (2020), funded by China; and online trainings on GAP by ICC, etc.

LIMITED SECTOR-SPECIFIC INSTITUTIONAL SUPPORT TO THE PRIVATE SECTOR RESTRICTS DEVELOPMENT OPTIONS, IN PARTICULAR FOR FARMERS AND SMALL AND MEDIUM-SIZED ENTERPRISES

Extension services: Extension services are mostly available for general advice on agricultural practices. There are very few extension officers with coconut-specific knowledge (1–2 specialists at the national level). Moreover, sector-specific topics beyond planting stay largely uncovered, including tree management, harvesting technologies, postharvest practices, processing technologies and product development options.

Small and medium-sized enterprise support services: Small Business Development Centres (SBDCs)

provide trainings and one-on-one counselling to existing and prospective small businesses. Their three offices in the FSM belong to the Pacific Islands SBDC Network's mission, supporting the growth and economic development of Pacific islands in the Western Pacific region affiliated with the United States. Their services are limited to setting up a business. However, in some States (e.g. Pohnpei), the SBDC has not been operational recently.

Financial schemes: There are no sector-specific financial programmes. As a standard procedure, to get finance, a solid business plan should be developed and submitted for assessment. Theoretically, technical support could be provided by an SBDC; however, often they do not have enough expertise and knowledge. Access to finance is further challenged by limited sector-specific skills within the FSM Development Bank to properly assess agriculture-related projects.

Market entry

Main problem	Root causes	PoA reference
Limited knowledge of standards and certification requirements prevents entry into foreign markets	<ul style="list-style-type: none"> No clear understanding of target markets Insufficient skills and capacities to research and analyse products and markets; difficult application of knowledge to practice 	3.1.2–3.1.5, 3.2.3
No national quality framework / guidelines on coconut products results in a lack of quality consistency across the country, which may affect FSM positioning in foreign markets	<ul style="list-style-type: none"> Low commercial activity for export Coconut has not been high on the agenda until recently Ad hoc supply of primary products to undemanding markets 	3.2.1–3.2.2, 2.1.4
The absence of product and market information intelligence affects company decisions to penetrate the market with the right product at the right time	<ul style="list-style-type: none"> Insufficient skills and capacities to research and analyse products and markets No clear mandate on coconut sector research 	3.1.1–3.1.5, 2.2.7
Certain policy decisions constrain access to potentially viable high-income markets, compared with regional peers	<ul style="list-style-type: none"> Non-accession to the EU–Pacific Economic Partnership Agreement (EPA) Restrictions imposed by the United States Postal Service (USPS) on the FSM 	3.1.7
An absence of branding and in-market entry strategies prevents FSM companies from raising their profile in international markets	<ul style="list-style-type: none"> Coconut has not been high on the agenda until recently Limited capacities and resources; insufficient skills 	3.1.6, 3.3.1–3.3.7

LIMITED KNOWLEDGE OF STANDARDS AND CERTIFICATION REQUIREMENTS PREVENTS ENTRY INTO FOREIGN MARKETS

The FSM is an aspiring newcomer into the global coconut product market, determined to supply value-added products. Previous export experience has

been broadly limited to copra/copra oil. Foreign markets are a puzzle of various country- and buyer-related requirements and standards, which entail additional costs and time for producers. In this context, the identification of viable target markets could be the first step in discovering market access rules. Once the markets are pre-selected, companies may further research required standards, licensing and certification, and related costs.

NO NATIONAL QUALITY FRAMEWORK/ GUIDELINES ON COCONUT PRODUCTS RESULTS IN A LACK OF QUALITY CONSISTENCY ACROSS THE COUNTRY, WHICH MAY AFFECT FSM POSITIONING IN FOREIGN MARKETS

The absence of regulatory and institutional set-up for quality testing and certification is currently seen as a challenge for future sector development. The ICC Secretariat is leading the work on quality standards for coconut products to come up with regional/ICC standards. As part of this initiative, the existing national standards of Member States are reviewed and compiled for further harmonization and standardization. Basic quality guidelines are essential to ensure the consistency of products within the country of origin as well as to facilitate conformity to foreign markets' quality requirements (ICC, 2021).

THE ABSENCE OF PRODUCT AND MARKET INFORMATION INTELLIGENCE AFFECTS COMPANY DECISIONS TO PENETRATE THE MARKET WITH THE RIGHT PRODUCT AT THE RIGHT TIME

The availability of sector-specific data is a common challenge, and trade and market intelligence is no

exception. While there is a Trade and Investment section within the DRD, its research and analysis on the coconut sector has been limited. As a Member of ICC, the FSM has access to one of the most comprehensive statistical databases on coconut production, consumption, export and import. Although the data presented there requires further harmonization in reporting, it provides valuable insights into the development of the global coconut product market.

CERTAIN POLICY DECISIONS CONSTRAIN ACCESS TO POTENTIALLY VIALE HIGH-INCOME MARKETS, COMPARED WITH REGIONAL PEERS

Non-accession to the EU–Pacific EPA: The FSM benefits only from the EU's Generalized Scheme of Preferences regime, which reduces or removes import duties from many FSM export products to the EU. While FSM exporters need to pay Customs duties for certain coconut products, companies from other regional countries export duty-free under the EU–Pacific EPA. As part of the Pacific African, Caribbean, Pacific States Group, the FSM can accede to the EU–Pacific EPA¹⁶ for duty-free, quota-free access to the EU market – the world's largest single market.

Table 7: Comparison of ad valorem equivalent tariffs for selected coconut products entering the EU

Product	HS code*	Most Favoured Nation (%)	FSM (%)	Fiji (%)	Solomon Islands (%)	Vanuatu** (%)
Coconut oil, not crude, in bulk	1513.19.10	12.8	8.9	0	0	0
Coconut oil, not crude, not in bulk	1513.19.90					
Coconut flour	1106.30.10	10.9	7.1	0	0	0
Coconut milk, cream, milk powder	2008.19.20 2008.19.90	7	2.4	0	0	0
Coconut water	2106.90.97	17.3	12.1	0	0	0
Vinegar	2209.00.00	4.69	3.22	0	0	0
Coir twine	5607.90.20	6	4.8	0	0	0
Coir rope	5607.90.30					

*HS codes used for this exercise are taken from the list of HS codes and rates of cess for coconut products – Exports, Sri Lanka.

**Vanuatu duty-free access is based on the preferential system for least developed countries.

Source: ITC Market Access Map (<https://www.macmap.org/>), comparison of Customs tariffs applied to selected coconut products from the FSM, Fiji, Solomon Islands and Vanuatu to Germany.

16.– The EU–Pacific EPA is currently applied between the EU and Fiji, Papua New Guinea, Samoa and Solomon Islands.

Restrictions imposed by the USPS on the FSM: Any commercial product exported out of the country through the USPS is limited to one pound (if heavier, shipping in multiple boxes). For small coconut product exporters, the postal service is the cheapest and simplest option to deliver their goods to buyers. At the same time, United States companies can export into the FSM via the USPS with no weight restrictions. For example, any item purchased from Amazon can be brought into the country with the same postal service, regardless of its dimensions.

An absence of branding and in-market entry strategies prevents FSM companies from raising their profile in international markets. Currently, the FSM has no story attached to its coconut products – neither positive nor negative; it is a blank page that the country may develop as it desires, appealing to natural, unique and sustainable elements of production. A branding strategy allows a country to position and promote itself as well as build a good reputation for the quality of its goods and services. Branding strengthens a country's image among its neighbours, markets its resources and raises interest on the international stage. On the other hand, a country's brand also facilitates branding efforts for companies.

Development concerns

Main problem	Root causes	PoA reference
No clear response plan and recovery framework for farmers' coconut resources in the event of extreme conditions, posing a threat to livelihoods	<ul style="list-style-type: none"> Coconut has not been high on the agenda No agency has a clear mandate on coconut resource management Limited allocation of funds to the sector 	2.3.2
Insufficient inclusion of remote islands further affects already limited income options for smallholders	<ul style="list-style-type: none"> Limited awareness of commercial opportunities beyond copra Limited sector connections to find buyers Infrequent transport connectivity to main islands No access to banking services remotely 	1.1.7, 2.1.3, 1.3.3
Limited job opportunities in higher-value processing hinders engaging youth and women in sector activities	<ul style="list-style-type: none"> Very low commercial activity in the sector, particularly in processing and exporting 	1.4.1

NO CLEAR RESPONSE PLAN AND RECOVERY FRAMEWORK FOR FARMERS' COCONUT RESOURCES IN THE EVENT OF EXTREME CONDITIONS, POSING A THREAT TO LIVELIHOODS

Extreme weather conditions that are not uncommon in the region are a potential risk for consistent sector operation. It is thus essential to mitigate associated risks and add to farmers' confidence that coconut producers will be supported to restore their trees. Further, reactive pest and disease management increases the risk of quantitative losses and qualitative degradation. There are many pests and diseases in neighbouring countries like Guam, Hawaii and Palau which are not present in the FSM. Particularly, Guam has the coconut rhinoceros beetle, a serious insect pest of coconuts, resulting in significant yield losses and tree mortality.

INSUFFICIENT INCLUSION OF REMOTE ISLANDS FURTHER AFFECTS ALREADY LIMITED INCOME OPTIONS FOR SMALLHOLDERS

Given their distance from 'central' areas, outer islands count on their own resources for subsistence, and the coconut tree plays a vital role. As the coconut is already deeply integrated in their daily life, farmers from these islands indicate particular interest in and readiness to supply coconuts to processing facilities. However, current limitations on processing capacities, transportation links and storage arrangements which lead to coconut quality deterioration prevent remote islands from turning the coconut into an additional stable income source. Limited access to mobile/online banking also affects interest.

LIMITED JOB OPPORTUNITIES IN HIGHER-VALUE PROCESSING HINDERS ENGAGING YOUTH AND WOMEN IN SECTOR ACTIVITIES

Traditionally, sector activities –associated mainly with arduous physical tasks– predominantly involve men. It is essential that efforts to develop the sector are gender-sensitive and consider women's specific role and expertise, as well as needs and challenges. In Kosrae, the Women Association stated that women would be ready to contribute to the supply of coconuts, provided there is assistance for collection and transportation.

Also, women are more engaged in processing at the HH level and could scale up their production if there is confirmed demand.

Youth are the future driving force of socioeconomic development and the country's demographic dividend. It is therefore essential to give youth a role in sector development. With increasing urban migration, farming and related activities are seen as less appealing than office or public sector jobs. It is a challenge to retain youth in the sector due to the profitability of primary produce. The development of the sector beyond copra –processing, product development, marketing and distribution– and regain the attention of young people.



View on Sokehs Rock, FSM @ITC



THE WAY FORWARD: REDEVELOPING THE FSM SECTOR IDENTITY

Vision

This section lays down the strategic framework of the CocoNES, comprising the vision statement and the strategic and operational objectives that are the backbone of the PoA.

To guide implementation of the Strategy over the next five years, the vision statement set out below was formulated and agreed upon by stakeholders who participated in the CocoNES design consultations.¹⁷ It represents the ambitions of the country as well as a consensus among stakeholders over the role of the coconut sector in the economy.

“ A vibrant and sustainable coconut industry:
from the heart of Micronesia to the world ”

The vision statement reflects key priorities for redeveloping the coconut sector, centred around turning a traditionally grown crop in the FSM into quality, sought-after products in foreign markets.

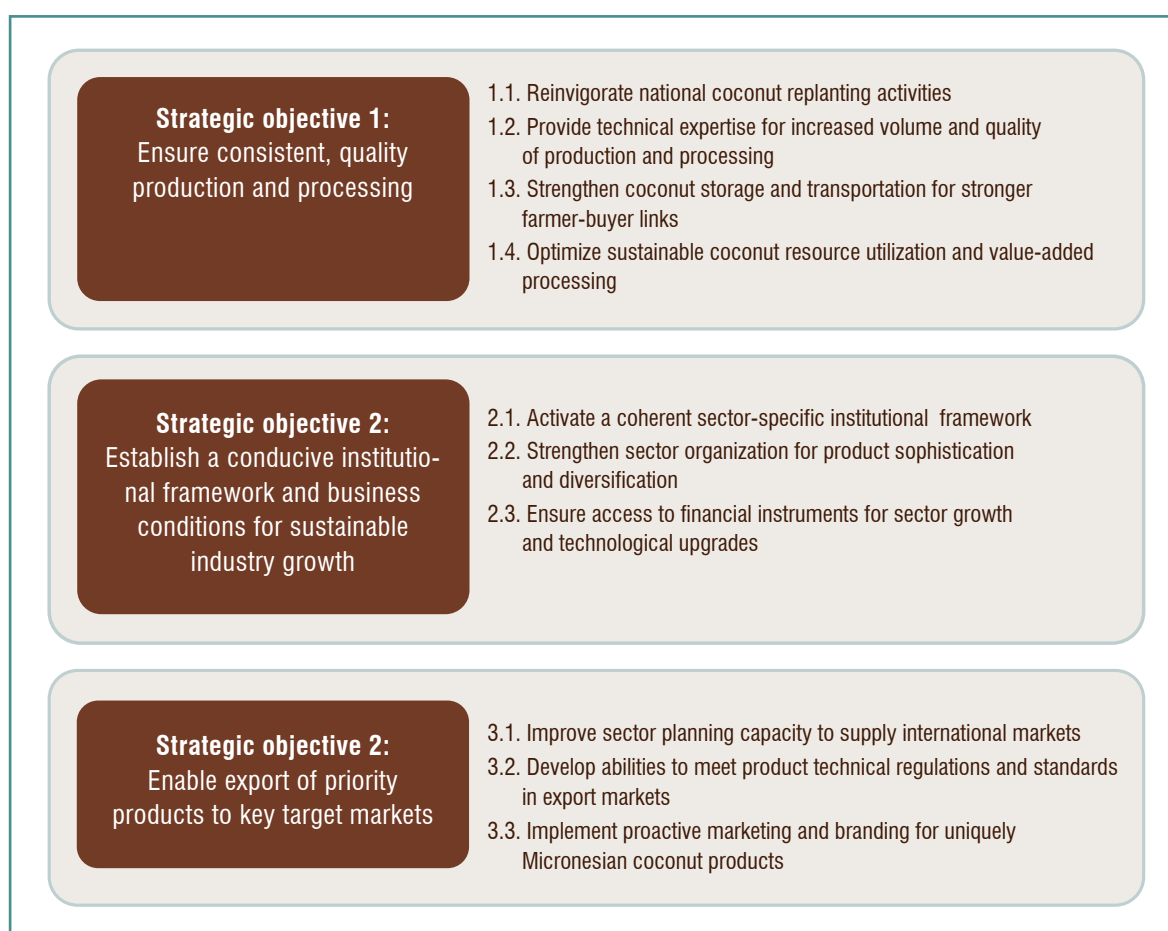
17.– Multistakeholder consultations took place in the four States between August and December 2022.

Strategic orientation

The vision will be transformed into concrete results through the achievement of three strategic objectives. These objectives begin the process of focusing and prioritizing the vision. They respond to existing constraints and opportunities, identified in the analytical section.

Strategic objectives are subdivided into operational objectives that are more specific, action-oriented and narrower in scope. Finally, the operational objectives are also broken down into concrete, practical and pragmatic sets of activities, consolidated in a PoA.

Figure 17: Strategic and operational objectives



STRATEGIC OBJECTIVE 1: ENSURE CONSISTENT, QUALITY PRODUCTION AND PROCESSING

Efficient and sustainable production of coconuts is a fundamental prerequisite for long-term, generational industry development. The FSM has recognized the need to activate replanting and has taken initial steps in this direction. Given the ambitions to develop the sector at the commercial level and start supplying abroad, these activities have to adjust to industry requirements while also responding to local community needs.

After the production stage, harvesting and postharvest management is an essential step to ensure minimum losses and maximum efficiency and returns for all involved. In the context of geographically dispersed islands, storage and transportation play a vital role in consolidating coconuts and copra. The quality and range of final products are directly linked to the condition of supplied inputs. An integrated approach to the supply chain –through provision of harvesting services, rationalization of supplier geography and logistics, and stabilization of transportation– would strengthen producer–processor links.

At the processing level, the FSM is moving towards 'zero waste' to capture more value from traditional crops. The construction and operationalization of the Chuuk integrated coconut processing facility is an eagerly anticipated milestone in sector development. Currently focused on kernel-based products, the sector will diversify its production to cover shell, husk and testa in the short to medium term. Additional opportunities may come from other parts of the coconut tree. Testing certain products at the local/ municipal level will provide an alternative avenue for sector growth.

STRATEGIC OBJECTIVE 2: ESTABLISH A CONDUCTIVE INSTITUTIONAL FRAMEWORK AND BUSINESS CONDITIONS FOR SUSTAINABLE INDUSTRY GROWTH

The organization of the coconut sector will facilitate the transition from a traditional crop into a potentially million-dollar export industry. Structuring sector governance and management refers to the establishment of a solid development framework driven by public–private dialogue between national and State stakeholders. The needs and consolidated voice of the sector will be channelled through the creation of an association of coconut producers and processors. Further to the development of new mechanisms, existing major institutions will enhance their capacities and skills to play a bigger role in generating sector-specific intelligence, service provision and technical advice.

A favourable business environment contributes to the competitiveness, productivity and innovation of producers, processors and traders. The FSM is determined to encourage the formalization and operation of the sector

with streamlined PGS registration procedures, better access to services at the local level and the availability of financial schemes. These adjustments and incentives aim at upgrading the value chain to ensure consistent links, product diversification and export activity.

STRATEGIC OBJECTIVE 3: ENABLE EXPORT OF PRIORITY PRODUCTS TO KEY TARGET MARKETS

The development of the 'right' product for export necessitates understanding demand. Critical success factors include price, quality, volume and the consistency of product supply. Short-, medium- and long-term market orientation charts the direction of potential exports. As an aspiring newcomer to the market of higher-value-added coconut products, the FSM will build capacities to navigate through complex technical regulations and voluntary standards to cater for niche markets.

Apart from product and process characteristics, a brand –with an authentic narrative, anchored in 'personalized' stories– adds to product differentiation. Highlighting quality and exclusivity is particularly important in the context of smaller coconut-producing countries supplying to higher-income markets. Depending on the segments it targets, a company may also consider several brands to cater for different categories of consumers.

In-market strategy is a further step to connect to consumers in foreign markets. Those channels may include local trade representatives, engagement with FSM citizens abroad, trade fairs and harnessing e-commerce platforms. Other marketing tools refer to proactive outreach to target groups: hotels, specialty shops and distribution chains.

Product and market orientation

Overview of a proposed market orientation approach

- **Short-term (1–3 years):** Meeting domestic demand and reconnecting to regional markets
- **Medium-term (3–5 years):** Higher value-added products to familiar regional markets
- **Long-term (5+ years):** Going into niche markets beyond the region

Based on global dynamics in the coconut sector, there are sustained market options for semi-processed

products and visibly growing opportunities for emerging, non-traditional products. The past decade has seen an expansion of value-added coconut-based exports, particularly in the beverage and oleochemical segments of the sector. This trend is mainly driven by demand in high-income countries, prompted by consumer preferences shifting towards conscious consumption and sustainability. By embracing opportunities in the current context, it is suggested that the Government of the FSM pursue the following market trajectories, with short-, medium- and long-term orientations.

SHORT-TERM (1–3 YEARS): MEETING DOMESTIC DEMAND AND RECONNECTING TO REGIONAL MARKETS

The orientation to the domestic market is an avenue to grow, given traditional integration of the coconut and its derivatives into FSM daily life. Certain coconut products that are currently imported could be produced, improved or scaled up locally. These include copra cake, coconut milk and cream, and coconut lumber. Although some of them are already present in the domestic market, production is ad hoc, upon request, and predominantly at the HH level. The upcoming upgrade in processing capacities in Chuuk, coupled with stability in coconut supply, may level up the competitiveness of local products.



coconut (pixabay), coconut-1036198.jpg

Table 8: Leveraging market and product opportunities in the domestic market

FSM			
Segment	Products	Why?	How?
Sellers at public markets, direct to consumers	Copra meal / cake	<ul style="list-style-type: none"> Widely used as pig feed throughout the country Currently imported from the region to Pohnpei 	<ul style="list-style-type: none"> With intended scale-up of domestic oil production, the volume of this by-product is expected to also increase
Retail shops, hotels and tourism establishments	Fragrant oil / soap, coconut oil made with CNO	<ul style="list-style-type: none"> Products based on CNO could be more affordable than currently produced VCO-based products Locally produced products could contribute to the tourism image of the country 	<ul style="list-style-type: none"> Adjust the formulas for soap and fragrant oil to replace VCO with CNO Consider brand differentiation to cater for the preferences of different consumer categories Partner with local hotels / restaurants and other tourism establishments to secure additional distribution channels
Retail shops, sellers at public market	Coconut lumber, coconut charcoal	<ul style="list-style-type: none"> Create additional value by removing less productive, senile and disease-affected trees, and replanting Piloted in one of the municipalities of Pohnpei (successfully, according to the mayor) 	<ul style="list-style-type: none"> Learn from the experience of Pingelap municipality Assess the feasibility of applying a similar experience in other municipalities and States Promote success stories Pilot in other municipalities and States
Retail shops, sellers at public market	Paring oil	<ul style="list-style-type: none"> VCO processing invariably creates parings Paring oil can work to reduce the palm cooking oil import requirement 	<ul style="list-style-type: none"> Adjust production methods and technologies to process parings into oil Ensure the quality of the product

In the short term, the FSM could also resume exporting copra/copra oil to regional markets while stabilizing the coconut supply, establishing new product lines and reaching necessary volumes for export. The country could start leveraging previous connections with trading partners as well as explore new markets. Traditional semi-processed products could be supplied to voluminous regional coconut-producing markets

with established processing capacities (see Table 9). If the FSM can secure a stable supply of coconuts to its processing facilities, which could potentially be in excess of its current capacities,¹⁸ it is essential to consider the possibility of orienting some primary products to foreign markets. Seen as a temporarily solution, this activity will allow to exporting to restart, build back trade networks and provide some export earnings.

18.— The timeline for the construction and operationalization of the integrated coconut processing facility in Tonoas, Chuuk is yet to be confirmed due to disruptions caused by the pandemic.

Table 9: Building back traditional exports to regional markets

Target market	Possible segment	Products	Why?	How?
Philippines	Importers, processors	Copra [HS 120300]	<ul style="list-style-type: none"> Currently importing sizeable volumes of intermediate goods from the region, including Solomon Islands and Vanuatu 	<ul style="list-style-type: none"> Establish trade networks within the identified markets; proactively reach out to potential buyers
Malaysia	Importers, processors		<ul style="list-style-type: none"> Malaysia has imported considerable volumes from the Marshall Islands and Fiji 	<ul style="list-style-type: none"> Conform to basic quality requirements (seek capacity development from development partners)
Fiji / Samoa	Retailers, wholesalers	Copra oil [HS 151311]	<ul style="list-style-type: none"> Fulfil demand in the same region 	<ul style="list-style-type: none"> Optimize transportation costs: explore opportunities for direct export from the States, without the necessity to consolidate in Pohnpei
United States	Importers, processors		<ul style="list-style-type: none"> In the top three largest importers of CNO 	<ul style="list-style-type: none"> Negotiate freight competitiveness via memorandums of understanding with shipping lines
Australia	Retailers, wholesalers	Oil cake / copra meal [HS 230650]	<ul style="list-style-type: none"> Existing economic cooperation Relative proximity Currently importing from the region (Solomon Islands), although not in large quantities 	<ul style="list-style-type: none"> Ensure the ability to meet the volume and frequency requirements of buyers Additionally, for shell charcoal:
Japan, Republic of Korea	Importers, processors	Shell charcoal	<ul style="list-style-type: none"> Existing demand Non-perishable product Relatively easy processing and less investment 	<ul style="list-style-type: none"> Organize localized processing sites at the biggest coconut production clusters in the States Consolidate processed charcoal into exportable volumes

MEDIUM-TERM (3–5 YEARS): HIGHER VALUE-ADDED PRODUCTS TO REGIONAL MARKETS¹⁹

- Increase market penetration in existing markets by improving product quality, enhancing packaging and labelling, and increasing production volumes
- Diversify into new markets, as well as in existing ones, with value-added products
- Explore e-commerce as a distribution channel through companies' own websites, social networks, or dedicated online marketplaces.

The Government of FSM is determined to substantially increase processing facilities and develop new products/product lines, moving towards quality products beyond copra. Reaching the required quality and volumes of value-added products may open new market opportunities with both established and new trading partners. Based on existing demand, market trends, market penetration and requirements, it is suggested that the FSM explore product development in both edible and non-edible categories. The development of certain products has been already envisaged with the upcoming integrated coconut processing facility in Chuuk, while others –especially products with longer shelf life, non-edible products and those with lower technical requirements– may be considered to create economic opportunities in remote islands.



(cc)Wikimedia- Coconut_and_oil.jpg

19.– Medium-term export is dependent on the new integrated coconut processing facility.

Table 10: New product development: Potential, requirements and suggested priorities

Product identified	Priority	Market demand	Ease of market penetration	Technical requirements	Product development
Edible products					
CNO	Short term	High	High	Low	Low
Copra cake	Short term	High	High	Low	Low
Paring oil	Medium term	High	High	Low	Low
VCO	Medium term	Medium	Low	Medium	Medium
Desiccated coconut	Medium term	High	High	Low	Low
Virgin oil cake	Medium term	High	High	Low	Low
Coconut flour	Medium term	Low	Low	Medium	Low
Coconut snacks	Long term	Medium	Low	High	High
Coconut butter	Long term	Low	Low	Medium	Medium
Coconut milk/cream	Long term	High	Medium	High	High
Coconut water concentrate	Very long term	Low	Medium	High	High
Sap / sugar	Long term	Low	Medium	Medium	Medium
Non-edible products					
Coconut fibre	Medium term	Medium	Medium	Medium	Medium
Coir products	Medium term	High	Medium	Medium	Medium
Shell charcoal	Short term	High	High	Low	Low
Activated carbon	Long term	High	Low	High	High

Source: Based on the expertise of ITC sector practitioners.

When producing for export, companies should identify target markets and conform to their quality and market entry requirements, including labelling and

packaging. Table 11 defines potential markets in the region with proposed segments, products and initial recommendations.

Table 11: New products to regional markets

Target market	Possible segment	Products	Why?	How?
Australia	<ul style="list-style-type: none"> Importers: Baileyboys Coyo Annex Foods Retailers: Coles Woolworths Popular brands: Planet Food Coyo 	<ul style="list-style-type: none"> VCO Desiccated coconut Coconut snacks Coconut water Coconut flour Coir products 	<ul style="list-style-type: none"> Australia is an emerging market for coconut products Gradually increasing population of Asian ethnicity 0% tariff applied for coconut products Geographically relatively closer to the FSM 	<ul style="list-style-type: none"> Establish trade networks with importers, distributors, major retailers and food processors Participate in trade fairs, e.g. www.finefoodaustralia.com.au Adopt Australian quality standards, product requirements, packaging, labelling and trademark requirements Food standards: www.foodstandards.gov.au Australian organic: www.aco.net.au
Japan	<ul style="list-style-type: none"> Importers: Benibana Food Ultimate Retailers: AEON Costco 7-Eleven 	<ul style="list-style-type: none"> VCO Desiccated coconut Coconut snacks Coconut water Coir products 	<ul style="list-style-type: none"> Japan is a niche market for coconut products Coconut products are popular in Japan as a healthy product 0% tariff applied for coconut products exported from the FSM to Japan Geographically relatively closer to the FSM 	<ul style="list-style-type: none"> Establish trade networks with importers, distributors, major retailers and food processors www.jetro.go.jp Participate in trade fairs, e.g. www.jma.or.jp/foodex/en Adopt Japanese quality standards, product requirements, packaging, labelling and trademark requirements; www.caa.go.jp/en Japanese Organic: www.maff.go.jp

Target market	Possible segment	Products	Why?	How?
United States	<ul style="list-style-type: none"> Importers: The Coconut Cooperative Nutiva Distributors Carrington Farms Jedwards International Retailers: Walmart Amazon Costco 	<ul style="list-style-type: none"> VCO Desiccated coconut Coconut snacks Coconut butter Coconut water 	<ul style="list-style-type: none"> The United States is a large market for coconut products 0% tariff applied for coconut products exported from the FSM to the United States Geographically relatively closer to the FSM 	<ul style="list-style-type: none"> Establish trade networks with importers, distributors, major retailers and food processors Participate in trade fairs, e.g. www.expowest.com, www.specialtyfood.com Adopt United States quality standards, organic and product requirements, packaging, labelling and trademark requirements: www.usda.gov/topics/organic
China	<ul style="list-style-type: none"> Importers: China Plaited Products Imp. and Exp. Corp. Ltd Foshan Xingquan Trading Co. Ltd Guangzhou Baizongsheng Trade Co. Ltd 	<ul style="list-style-type: none"> VCO Coconut milk Coconut fibre Coir products 	<ul style="list-style-type: none"> China is one of the largest importers of coconut fibre and coir products 	<ul style="list-style-type: none"> Establish trade networks with importers, distributors and producers of coir and fibre products in China Participate in trade fairs, e.g. www.cantonfair.org.cn/en-US Become familiar with Chinese national 'GB Standards': www.gbstandards.org

LONG-TERM (5+ YEARS): GOING INTO NICHE MARKETS BEYOND THE REGION

Diversify into niche high-income export markets for quality coconut products with 'organic' and 'social/sustainable' certificates.

As a long-term market strategy, the FSM may expand the geography of target markets and aim at European countries with high-quality differentiated products. Given the size of the FSM, it is suggested that the Government focus on product quality, addressing growing consumer attention to production areas as well as to the story behind small-scale farmers and rural communities. The products, supplied to niche markets in the EU, should comply strictly with quality requirements

and guarantee product authenticity (no adulteration). Buyers and consumers might be willing to pay a higher price for products that convey quality, contribute to sustainability and use smart marketing.

To position certain products as specialty – for example, VCO – sustainability and inclusiveness play an important role. Emphasizing coconut-producing communities, remote islands and ecological aspects can be a competitive advantage and a differentiation point from other suppliers. Organic certification could be a demand from a buyer or an extra selling point for the producing company. Fair trade certification may also complement the sustainability story of a product but it is not as common. Niche marketing reduces the pressure of scale linked to bulk trade and focuses on skills and care, carving out new opportunities for small economies with unique sociocultural and environmental conditions.





















Table 12: New products to new global markets

Target market	Possible segment	Products	Why?	How?
Europe	Importers:	<ul style="list-style-type: none"> VCO Coconut sugar Desiccated coconut Coconut chips Coconut water 	<ul style="list-style-type: none"> Europe, particularly the EU, is the second largest single market for organic products globally after the United States Driven by 'conscious' consumption, consumers might be willing to pay a higher price for products that convey quality and sustainability, presented through smart marketing 	<ul style="list-style-type: none"> Establish trade networks with importers, distributors and producers in Europe Participate in trade fairs, e.g. www.biofach.de, www.sialparis.com, www.anuga.com Become familiar with European food standards <ul style="list-style-type: none"> » Food safety » Organic
<ul style="list-style-type: none"> Germany France Netherlands Spain United Kingdom 	<ul style="list-style-type: none"> Delphi Organic (Germany) Bio Planète (Germany) Dr Organic (England) Tradin Organic (Netherlands) Laboratorios Almond (Spain) 			

Generally, to build competitiveness in the global market, companies must be aware of their competitors and ready to be agile when facing challenges. There are already well-established competitors with loyal customers and strong knowledge of their export markets, in both big producing countries as well as in regional island states. Target audiences and their preferences is another serious consideration for product specifications.

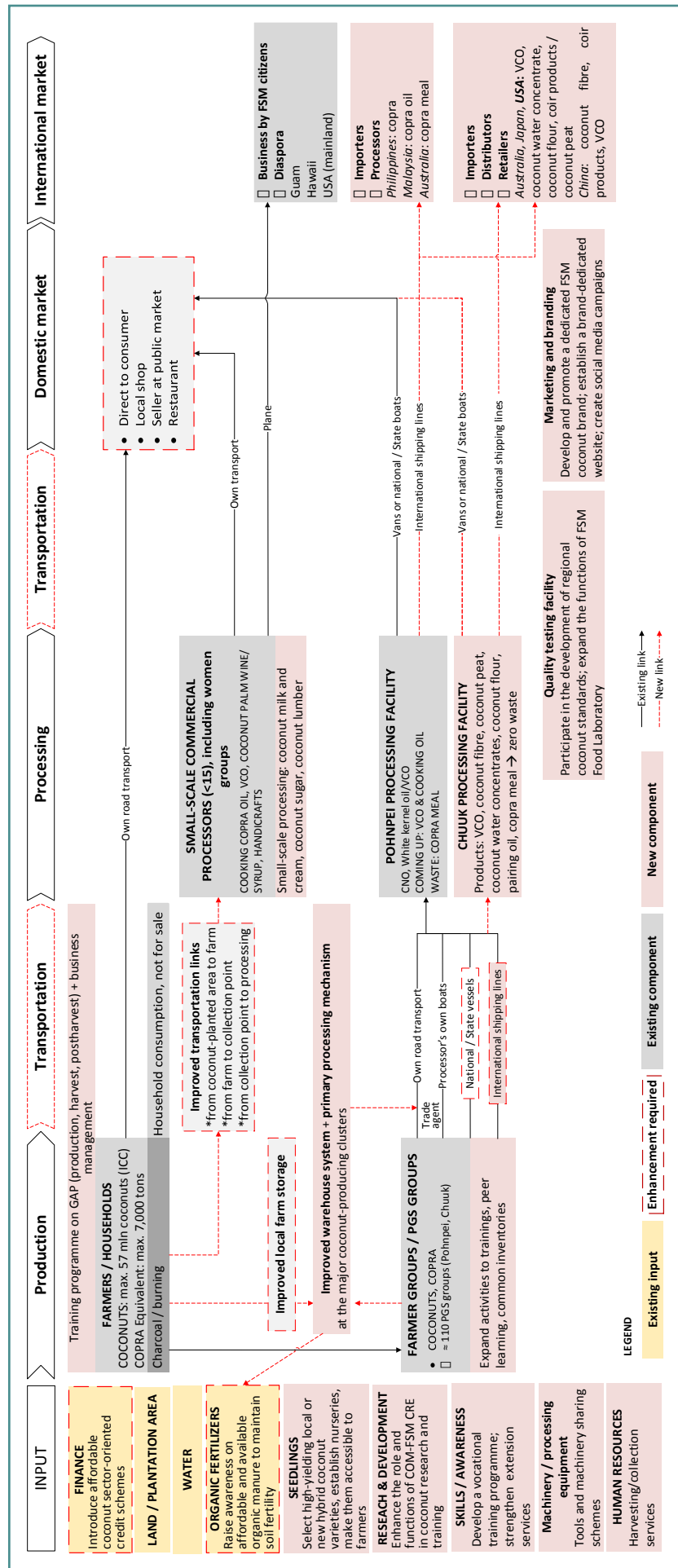
On top of tariffs, each market has specific technical standards, regulations, certification processes and administrative procedures, which can differ substantially between countries. Distribution channels are another strategic element in reaching interested customers and reducing trade difficulties. Finally, marketing costs such as trade fairs, social media campaigns and sample distribution should also be considered.

Figure 18: Illustrative list of coconut products for FSM export in the short, medium and long term (with HS codes)

Coconut products, by coconut components											
Coconut fruit			Coconut kernel / meat							Coconut water	
HS 0801			HS 1106	HS 1203	HS 1513		HS 1516	HS 1518	HS 2306	HS 2008	HS 2106
HS 080111 Desiccated coconuts	HS 080112 Fresh coconuts in the inner shell "endocarp"	HS 080119 Fresh coconuts, whether or not shelled or peeled (excluding in the inner shell "endocarp")	HS 110630 Flour, meal and powder of dried leguminous vegetables	HS 120300 Copra	HS 151311 Crude coconut oil	HS 151319 Coconut oil and its fractions, whether or not refined, but not chemically modified (excluding crude)	HS 151620 Vegetable fats and oils and their fractions, partly or wholly hydrogenated, inter-esterified, re-esterified ...	HS 151800 Animal or vegetable fats and oils and their fractions, boiled, oxidised, dehydrated, sulphurized ...	HS 230650 Oilcake and other solid residues, ..., resulting from the extraction of coconut or copra	HS 200819 Nuts and other seeds, prepared or preserved,... <i>Canned coconut milk, coconut cream, coconut milk powder, coconut water powder</i>	HS 210690 Juice of fruit or vegetables, unfermented
											
Coconut husk					Shell		Other parts of coconut tree				
HS 5305		HS 5308	HS 5702	HS 6305	HS 4402	HS 1702	HS 4408	LEGEND			
HS 530511 Coconut "coir" fibres, raw	HS 530519 Coconut "coir" fibres, processed but not spun	HS 530810 Coconut "coir" yarn	HS 570220 Floor coverings of coconut fibres "coir", woven, whether or not made up	HS 630590 Sacks and bags, for the packing of goods, of textile materials	HS 440290 Wood charcoal	HS 170200 Other sugars, including chemically pure lactose, maltose, glucose and fructose	HS 4408.. Sheets for veneering, ...	Export products in the short term			
								Export products in the medium and long term			
								Note: Common HS codes for coconut products; many HS codes are not coconut-exclusive and include other products. HS codes may also differ depending on the packaging.			

Note: Common HS codes for coconut products; many HS codes are not coconut-exclusive and include other products. HS codes may also differ depending on the packaging.

Value chain upgrade



Value chain options

Value chain transformation is essential to unlocking the potential for coconut industry growth in the FSM. Proposed options will integrate good practices, improve connections with local producers, and increase sector

organization and coordination. These adjustments will allow the sector to achieve sector sustainability, supply consistency, product quality and enhanced capacities to conform to export requirements.

Value acquisition: Acquire value by improving domestic efficiency		
Adjustment	How to implement	PoA link
Facilitate industry coordination	Establish enhanced links between producers, processors and traders through an association of coconut producers and processors, the FSM Chamber of Commerce and PGS groups.	2.1.3
Increase availability of quality planting material	Select high-yielding local or new hybrid coconut varieties as per the industry/buyer requirements, establish nurseries to multiply the selected planting material and make it accessible and affordable to farmers at the local level.	1.1.2–1.1.3
Improve farmers' skills and knowledge of GAP	Collaborate closely with College of Micronesia-FSM (COM-FSM) to develop a sector-dedicated modular training programme that will be implemented in the four States; train master trainers; provide advisory services on GAP for farmers at the local level; disseminate relevant materials and guidelines.	1.2.1, 1.2.2–1.2.4
Improve storage facilities / practices for primary products	Organize the current system of storage, including on-farm practices and storage in transit (warehouse receipt system). Introduce and maintain optimal conditions and practices for better preservation of quality primary products.	1.2.1, 1.3.4
Value retention: Retain greater value by reducing leakage from the national component		
Adjustment	How to implement	PoA link
Strengthen local knowledge of business management and entrepreneurship	Make trainings and advisory services on general business knowledge available for farmers / PGS groups at the local level through SBDCs, COM-FSM and chambers of commerce.	2.1.3, 2.2.2, 2.2.5
Enable tool- and machinery-sharing schemes	Provide support to farmer / PGS groups to acquire and manage common inventories; introduce harvesting and postharvest services (tool sharing, coconut picking, collection) at PGS, COM-FSM and an association of coconut producers and processors (when established).	1.3.2, 2.1.5, 2.2.5
Use coconut waste for local needs	At major coconut clusters, facilitate access to shared equipment / tools for primary processing at warehouse facilities, run by a third party / PGS. Enable farmers at the State level to reuse waste as basic gardening intermediates, charcoal and construction materials for HHs or local consumption.	1.3.4
Value addition: Add value by differentiating and developing new coconut product lines		
Adjustment	How to implement	PoA link
Expand the range of processed coconut products	Rapidly develop the Chuuk integrated processing facility, based on a renewed product and market orientation assessment, using the principle of 'zero waste'.	1.4.1
Adhere to food safety regulations for edible coconut products	Based on market entry plans, obtain mandatory certifications such as HACCP, International Featured Standard Food, Food Safety System Certification 22000, ISO 22000 and British Retail Consortium Food.	3.2.2
Obtain voluntary standards for product differentiation at selected target markets	Provide training on relevant voluntary standards, with particular focus on organic certification. Given the medium-term market orientation, consideration could be given to the United States Department of Agriculture National Organic Program (United States), Japanese Agricultural Standard Organic (Japan), EU Organic (EU) and Australian Organic.	3.2.3
Develop a marketing and branding plan for target markets	Jointly with industry players, develop / promote a common industry brand with an authentic Micronesian story, conduct a related promotional campaign, create promotional material, select communication channels and build a brand-dedicated website.	3.1.2–3.1.5

Value creation: Create value by processing 'beyond kernel-based' products		
Adjustment	How to implement	PoA link
Expand by-product processing: husk and coir	Develop pilot projects for products made from husk and coir to be produced: (1) locally in the States; and (2) at the advanced integrated processing facility.	1.4.3
Expand by-product processing: shell	Assess a business model based on localized production of shell charcoal, consolidated for volume and further marketed by authorized operators.	1.4.5
Pilot a new value chain: coconut palm inflorescence	Complete a feasibility study on remote island communities processing coconut palm inflorescence (e.g. sap, sugar, vinegar, wine) for consolidation and packaging, and marketing in niche markets abroad.	1.4.4
Expand a new value chain: coconut tree wood	Use the experience of the Pingelap municipality in Pohnpei for coconut palm stem processing; define success factors and develop pilot projects in other interested municipalities.	1.1.5
Create links with the tourism sector	Organize round tables between the tourism sector and the coconut industry to promote coconut products to visitors.	3.3.5
Value distribution: Maximize the sector's contribution to development		
Adjustment	How to implement	PoA link
Integrate remote islands into coconut sector development	Increase the supply of coconuts and other coconut-based products to processing facilities from remote islands: improve transportation links, upgrade storage practices and communicate the forecast quantity and quality of coconut products.	1.3.1, 1.3.3
Obtain ethical and social-related certifications	In the long term, for specific high-income export markets, it might be useful to look at certification with Fairtrade International standards. Certified products get a premium that is aimed at improving the livelihoods of farmers and workers.	3.2.3

Institutional adjustments

The development of the coconut sector depends significantly on the functions and roles of support institutions and overall inter-institutional coordination. The organizations listed below have a direct impact on the future sector and require skills and capacity enhancement. For a visual presentation of institutions within the value chain, please refer to annex I.

STRENGTHEN FSM DRD: POA 2.2.3

To manage coconut sector resources, FSM DRD will increase its skills and capacities to fully understand available coconut resources, production clusters, coconut-specific extension services, market trends and preferences.

EXPAND THE FUNCTIONS OF COM-FSM CRE: POA 2.2.2, 1.2.5

CRE will intensify its research and training role for the development of the coconut sector. It would be responsible for developing research, recommendations and publications on FSM-suited coconut varieties, tree management practices, coconut processing and

product quality, etc. As part of services, CRE will provide trainings, advisory and extension services on the researched topics and guidance on GAP.

ENHANCE THE CAPACITIES OF THE COCONUT DEVELOPMENT UNIT/FSMPC: POA 2.2.4

With the intention to develop export activities, the Coconut Development Unit will build up its skills and capacities in sector intelligence, processing technologies and equipment, understanding of technical trade regulations and standards, and proactive marketing.

ESTABLISH A COCONUT SECTOR DEVELOPMENT FRAMEWORK: POA 2.1.1–2.1.2

The establishment of this framework aims at enabling continuous and consistent coconut sector development. The CocoNES, as the principal blueprint for sector orientation, will be reviewed and adjusted according to needs, trends and opportunities. Interrelated bodies have a specific mission to see through the execution

and delivery of the CocoNES to turn the coconut sector into a stable and sustainable industry for improved livelihoods of FSM communities and food security.

Fund project *Climate-resilient food security for farming HHs across FSM*, Output 1.4 – Develop a network of State-level farmer associations across FSM.

ESTABLISH AN FSM ASSOCIATION OF COCONUT PRODUCERS AND PROCESSORS: POA 2.1.3

The association will be recognized as the national coconut private sector representative body. Its objective is to consolidate smallholders/farmers into one unit to represent sector interests, voice their concerns, and provide targeted services and trainings. This activity could be implemented jointly with the Green Climate

DEVELOP THE FUNCTIONS OF PGS GROUPS: POA 1.1.3, 1.2.2, 2.1.5, 2.2.5

PGS groups need to reach a certain level of maturity to explore the benefits of this novel system in the context of the FSM. In line with the principles and values of the PGS system, the groups can develop peer learning, trainings, provision of extension services, etc. Once formally registered, they will also be able to participate in joint activities by operating common funds.

Investment needs

The development of a more linked and sustainable industry will require investment in key strategic areas of the value chain. The following segments are seen as key areas for focused investment to upgrade the value chain.

Investment need	Rationale
A network of coconut nurseries at the State level	<p>Why? To ensure coconut producers at the State level have available and easily accessible quality planting material to increase yield and maintain sector sustainability.</p> <p>How? Implement a new model of extension services with the private sector; organize a tender process for the establishment of nurseries; establish nurseries as part of demonstration farms and extension services.</p> <p>Source of funding: Private, public</p>
State-level demonstration farms for coconut production and basic processing	<p>Why? To conduct coconut-specific research and demonstrate sustainable farming systems (including storage and basic processing/copra drying).</p> <p>How? Implement a new model of extension services with the private sector; organize a tender process for the establishment of nurseries; establish nurseries as part of demonstration farms and extension services. Possibly use the Standardized Coconut Plantation, built under a development project with China, as a base for agricultural technology demonstration and promotion in the country.</p> <p>Source of funding: Public</p>
A warehouse receipt system at major coconut clusters	<p>Why? To ensure that there are facilities with optimal storage conditions to keep primary produce of good quality, and to enable farmers to borrow capital against inventory and sell their output during periods of higher market prices (could be used beyond the coconut sector).</p> <p>How? Attract third-party operators or PGS groups to handle storage facilities.</p> <p>Source of funding: Private investment, donor funds</p>
Primary processing equipment at warehouses / collection points	<p>Why? To follow a 'zero waste' approach and repurpose waste into basic gardening intermediates, charcoal and construction materials at the local level for immediate domestic consumption or HHs.</p> <p>How? Attract third-party operators or PGS groups to establish and operate basic processing tools and services.</p> <p>Source of funding: Private investment, donor funds</p>
Chuuk integrated coconut processing facility	<p>Why? To increase processing capacity to sustainably utilize coconut resources in the biggest coconut-producing State and create additional sources of income for communities.</p> <p>How? Encourage the implementation of the private investment project, as announced on the Vital website.</p> <p>Source of funding: Private investment, foreign direct investment</p>

Implementation modalities

This Strategy is the first deliberate strategic attempt by the FSM to leverage the coconut industry for transformational economic growth. The success of this transformation will depend on coherence of actions across multiple public and private sector institutions. Effective Strategy implementation, therefore, requires clear roles and responsibilities, accountability, transparency and efficiency. Successful implementation of the activities in the CocoNES requires:

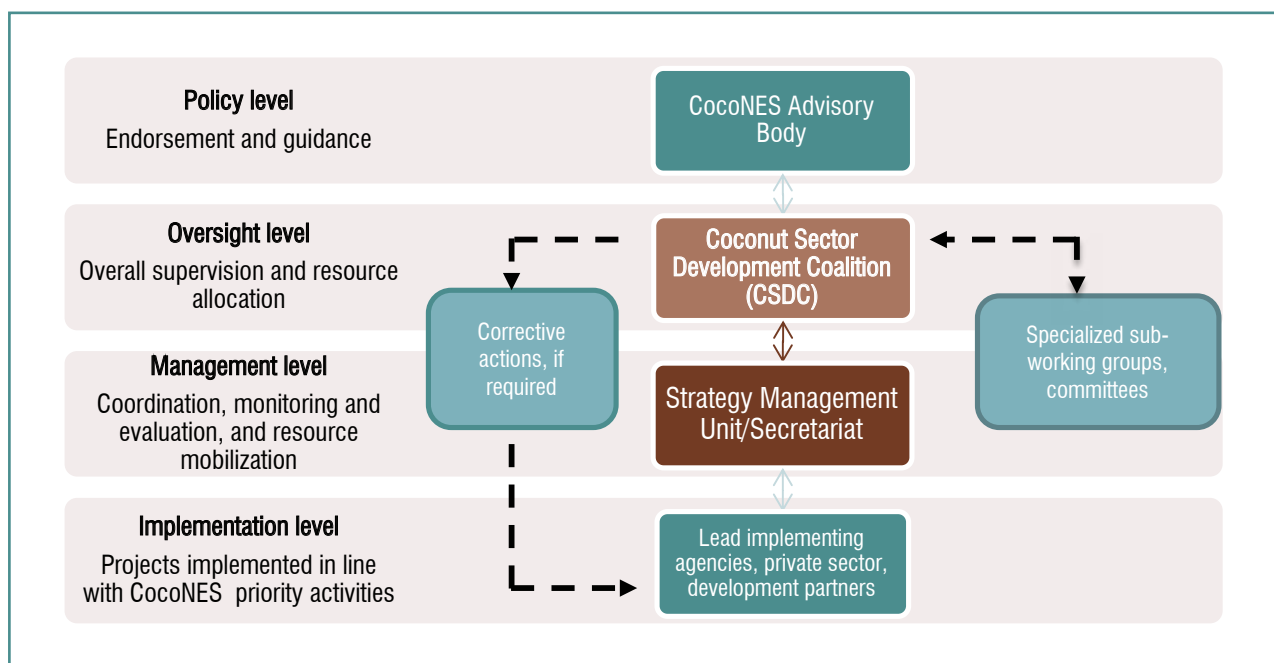
- A high level of commitment from relevant stakeholders
- Active engagement of the private sector
- Systematic coordination and communication between implementing bodies

- The readiness of the public and private sectors to programme and allocate/mobilize resources.

SETTING UP A COCONES GOVERNANCE FRAMEWORK

Identifying and establishing a stable and credible mechanism to drive Strategy implementation is central to the Strategy's success and longevity. An adequate institutional mechanism to oversee and coordinate strategy implementation will ensure clarity of roles, maximize utilization of limited resources, assign responsibilities and accountability, and provide transparency to national public institutions and private sector organizations.

Figure 19: Proposed coconut sector governance framework



To ensure the effectiveness of this structure, the following measures should be undertaken:

- Build the capacities of key implementing institutions/inter-agency establishments –including the CSDC and the Secretariat– to enable them to define, target, facilitate and provide necessary support for Strategy implementation
- Streamline coordination and communication between various departments and institutions

involved in creating conducive business conditions, trade and business services for producers and processors

- Formalize the CSDC to ensure continuous implementation and updating of the Strategy by adjusting the direction for sector growth, coordinating implementation management, reviewing progress quarterly, addressing constraints and opportunities for business, and identifying implementation resources.

The CSDC will also organize an annual meeting with a wider audience to include civil society, the wider private sector and financing and/or technical assistance organizations. The purpose of this meeting is to provide an account of implementation progress and receive feedback to adapt and improve the strategic framework.

It is proposed that the CSDC acts as the oversight body for the CocoNES (see Figure 19). The CSDC is a governance platform with balanced representation of the public and private stakeholders directly engaged in sector development. The CSDC is advised to amend its Terms of Reference (Presidential Order, 1 November 2021) to extend them to Strategy implementation, and have a set of defined key performance indicators to oversee progress. DRD could continue acting as the focal member. The CSDC will meet quarterly and implement the following functions:

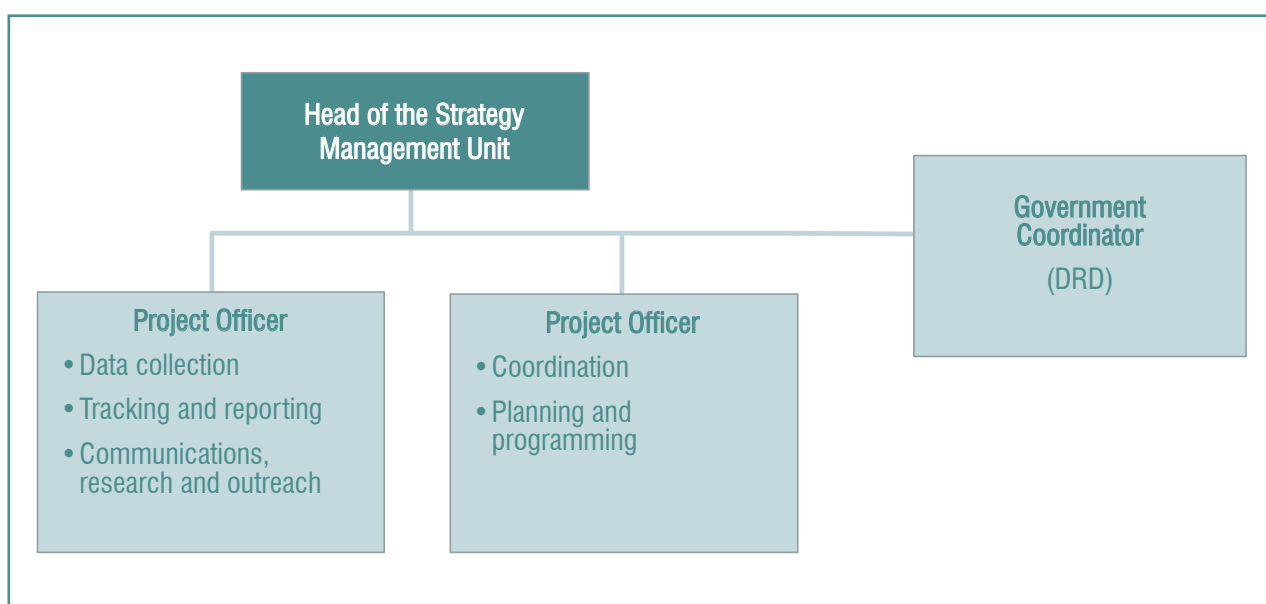
- Create a shared understanding of key market challenges and opportunities facing the sector
- Set goals and targets that, if achieved, will strengthen the sector's competitive position and enhance the FSM's overall capacity to meet the changing demands of markets
- Propose key policy changes to be undertaken and promote these policy changes among national decision makers
- Support the coordination, implementation and monitoring of activities in the sector by the Government, private sector, institutions or international organizations to ensure alignment to goals and targets.

At the management level, the Secretariat/Unit plays a key role in operationalization to effectively support the CSDC and its sub-working groups. The Secretariat will provide assistance in planning, tracking and mobilizing resources for coconut industry development. It coordinates all the modalities and functions of Strategy implementation.

The Unit/Secretariat will be a joint body, comprised of FSMPC (mandated to increase the value of the FSM coconut sector as per Public Law 18–68) and DRD (as a government coordinator). Below are some of the core functions of the Secretariat/Unit:

- Provide operational and administrative support to the CocoNES Advisory Body and CSDC
- Work with implementing partners to coordinate implementation of the CocoNES (the role of the government coordinator)
- Track the progress of CocoNES implementation and the achievement of key milestones, in collaboration with other relevant agencies
- Manage CocoNES communication platforms/tools, including the Strategy Implementation Management Tool
- Support implementing partners in the development and submission of annual national/State budget proposals relevant for implementation
- Support communication and outreach activities for sector development
- Prepare periodic progress reports shared with the CSDC and the CocoNES Advisory Body.

Figure 20: Organigram of the Strategy Management Unit



EARLY PROGRAMMING AND RESOURCE MOBILIZATION

Prior to the finalization and formal approval of the CocoNES, it is vital to programme implementation of priority activities, and identify and mobilize resources. The implementing agencies are responsible for programming the activities identified by the CSDC as priority, and requesting funds. Key sources for CocoNES implementation are:

- National/State budget (special annual allocation for the Strategy or from the line agency's existing budget)

- Grants or loans from development partners and multilateral financial institutions
- Domestic private sector investment
- Foreign direct investment
- Partnerships/funding from private foundations.

In the context of fast-tracking CocoNES implementation, it is proposed that key initial priorities that emerge during the validation of the CocoNES are already planned and financed while the Strategy is being finalized. The CSDC would monitor the workplan for the implementation of priority activities.

Indicative sources of external funding

Project name	Status	Possible link to the PoA
Green Climate Fund (GCF) "Climate Resilient food Security for farming household across the FSM "	Ongoing	1.1.3, 1.2.4, 2.1.3
Global Environmental Facility: Safeguarding Biodiversity of Invasive Alien Species in the FSM	Ongoing	1.1.2, 1.2.1
Small Islands Food and Water Project or Global Agriculture and Food Security Programs	Ongoing	1.4.3 – 1.4.5
State Strategic Action Plan –FSM Wide	Ongoing	2.2.1
Little Fire Ants – Eradication, Control and Prevention	Pending	2.2.2
Integrated Climate Smart Agriculture practices and approach towards sustainability and climate resilience / the Multi-country Programming 2018-22 FSM	Pending	2.2.2 – 2.2.3

Source: FSM ODA.

PRIVATE SECTOR SUPPORT AND PARTICIPATION IN IMPLEMENTATION

The private sector's practical knowledge of business operations is essential to ensure that the Strategy remains targeted, relevant to business needs, and aligned with trends and opportunities.

As a part of the CSDC, the private sector must be involved in the policy design and implementation process. Certain activities will depend on the sensitization and willingness of private sector stakeholders to contribute, directly or in partnership with public institutions, to Strategy implementation. Their implementation efforts can range from forming a sector-specific association to providing extension services to farmers and supplying business intelligence to institutions for project design, promotion and branding, policy advocacy, etc. In brief, the private sector's practical knowledge of business operations is essential to ensuring that the Strategy remains aligned with sector needs, market trends and opportunities.

PROACTIVE NETWORKING AND COMMUNICATION

The key implementing institutions detailed in the PoA need to be informed of the Strategy's content and the implications for their 2023–2028 programming. This networking and communication is essential to build ownership and to provide institutions with the opportunity to confirm which activities they can implement in the short-to-long term. It will be important for the CSDC and the Secretariat to reach out to relevant national and international institutions to create awareness of and support for the coconut industry.

Clear and proactive communication is the cornerstone of successful coordination. PoA activities often require multiple partners working together and/or in a synchronized manner. The implementing institutions detailed in the PoA need to be properly informed of the Strategy's content and their respective roles and responsibilities. It will be important for central implementing bodies such as the CSDC, DRD and corresponding departments in the States, and COM-FSM to reach out to relevant institutions to articulate the importance and benefits of sector development.

Priority action areas: 'Quick wins' for YEAR 1 implementation

The following activities have been identified as being high priority and are recommended for immediate implementation.²⁰ They require funding. The objective of the below activities is to ensure a rapid and smooth transition from the Strategy to action.

POLICY PRIORITIZATION AND SENSITIZATION

FSM DRD: Prioritize the coconut sector into agricultural and development policies and plans – particularly the FSM Strategic Development Plan and the Agricultural Policy at both national and State level – for resource allocation and awareness-raising.

FSM DRD: Conduct awareness-raising campaigns on the relevance of the coconut sector for the FSM economy and livelihoods, engaging with producers, processors, municipal governments and community leaders.

FSM Division of Trade and Investment: Develop a national campaign promoting local consumption of domestically produced coconut products, including cooking oil and VCO.

INSTITUTIONAL FRAMEWORK

FSM DRD: Formalize and operationalize the CSDC, a formal public–private dialogue, as the industry development mechanism for Strategy implementation.

FSM DRD: Activate the CocoNES Secretariat to provide operational, consultative and management support to the CSDC in CocoNES implementation and coconut industry development (terms of reference, organigram, job descriptions, budget).

FSM Division of Agriculture: Establish an FSM coconut producers (and processors) association bringing together private sector stakeholders, to be recognized as the principal national coconut private sector representative body.

FSM Department of Transportation, Communication and Infrastructure (TC&I): Establish a technical working group to deal solely with logistics issues: intra-State, inter-State and international. The working group is to provide an annual report on the efficiency of the transportation system and issues resolved.

SKILLS AND CAPACITIES

FSM Division of Agriculture: Conduct a comprehensive nationwide assessment of coconut resources every five years through surveys, GIS mapping and field visits, to ensure the availability of coconut-specific data.

COM-FSM CRE: Strengthen the research and training role of COM-FSM for the coconut sector, in particular CRE.

COM-FSM CRE: Establish one demonstration farm per State to conduct research and demonstrate sustainable farming coconut systems (including storage and basic processing/copra drying).

FSMPC: Rapidly develop the Chuuk integrated coconut processing facility, based on a renewed product and market orientation assessment, and using the principle of 'zero waste', to increase demand for coconuts.



coconut (pixabay), coconut-1501334.jpg

20.– The priorities were proposed by CSDC members on 28 February 2023, and validated during the second stakeholder consultations on 9 March 2023.

PLAN OF ACTION

The PoA, structured according to the strategic and operational objectives, contains the activities that will need to be executed in order to achieve the Strategy's vision. For each activity, the PoA specifies the following:

- **Priority level:** 1 – High, 2 – Medium, 3 – Low
- **Start/end dates:** The expected time frame within which the activity will be achieved (note: time frames may be adjusted during implementation)
- **Activity level:** Reference whether the activity implementation is mainly at National or State level
- **Targets:** Quantifiable targets that allow monitoring of the activity during implementation
- **Lead implementer:** A single institution assigned primary responsibility for implementation in order to increase accountability
- **Supporting institutions:** Any institution involved at any stage of the activity's implementation
- **Estimated cost:** Indicative budget for implementation of the activity; it serves as a cost orientation, based on Coalition's understanding and/or experience of required work.

Highlighted activities are of high priority and recommended for immediate implementation.

The mention of TKK, KSA, PNI and YAP refers to:

- TKK – Chuuk Department of Agriculture
- KSA – Kosrae Department of Resources and Economic Affairs
- PNI – Pohnpei DRD
- YAP – Yap DRD

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
1. Ensure consistent, quality production and processing												
1.1. Reinvigorate national coconut replanting activities	1.1.1. Conduct a comprehensive nationwide assessment of coconut resources every five years through surveys, GIS mapping and field visits, to ensure the availability of coconut-specific data. Use the 2013 Vital Coconut Resource Assessment as a baseline for benchmarking. Create a graphical mapping of sector resources at State / provincial level, with identified coconut resource clusters.	National	1						<ul style="list-style-type: none"> A registry with coconut-specific data and information developed and updated A digital visual map showing coconut resources created Evidence-based analysis integrated in policy setting 	FSM Division of Agriculture	Office of Statistics, Coconut Development Unit / Vital, COM-FSM CRE, SPC	1–1.2 million
	1.1.2. Introduce superior, high-yielding coconut seeds with plant and fruit characteristics suited for local environmental conditions and efficient processing: <ul style="list-style-type: none"> Prioritize existing local coconut varieties for initial dissemination Expand on existing research and ICC expertise Focus on hybrid varieties for easier harvesting and with tolerance to diseases and climate conditions. 	National	2						<ul style="list-style-type: none"> A compendium of selected varieties recommended for replanting built The seedlings of high-yielding varieties distributed per State per year: 1,500 in Chuuk and Pohnpei (each), 1,000 in Kosrae and Yap (each) At least 70% of distributed seedlings survived 	COM-FSM CRE	FSM DRD, TKK, KSA, PNI, YAP	75,000–100,000
	1.1.3. Complete a tender process for private operators, including PGS groups, to establish nurseries at the State level to grow and disseminate quality, high-yield, locally adapted seedlings. The nurseries should be established in accordance with the nursery management manual and seedling selection criteria (<i>linked to Activity 1.2.1</i>). Collaborate with the Green Climate Fund project <i>Climate-resilient food security for farming HHs across FSM</i> .	State	2						<ul style="list-style-type: none"> At least four nurseries established and run sustainably (one nursery per State) 	FSM DRD	TKK, KSA, PNI, YAP COM-FSM CRE	300,000
	1.1.4. Adjust the National Coconut Rehabilitation Programme for higher efficiency: <ul style="list-style-type: none"> Introduce the use of seedlings from authorized nurseries as a condition for reimbursement under the existing National Coconut Rehabilitation Programme (only once planting material is available and affordable in each State) Set targets and indicators to measure the effectiveness of the replanting programme by State Implement an annual programme review by DRD and corresponding State authorities to keep track of programme implementation (<i>linked to Activity 2.2.3</i>). 	National / State	2						<ul style="list-style-type: none"> The Programme adjusted to include a results matrix, national and per State (immediate action) Annual review meetings held A new condition on the use of specified seedlings introduced (<i>linked to Activity 1.1.2</i>) 	FSM DRD (Division of R&D)	TKK, KSA, PNI, YAP	350,000

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
1.1. Reinvigorate national coconut replanting activities	1.1.5. Use the experience of the Pingelap municipality in Pohnpei on coconut palm stem processing to develop pilot projects and engage farmers to remove less productive, senile coconut trees for further commercial use.	State	2						<ul style="list-style-type: none">Local demand assessed at State levelTwo learning exchange events with Pingelap municipality organizedTwo pilot projects implemented	FSM Division of Trade and Investment	PNI	150,000
	1.1.6. Promote intercropping for sustainable and efficient utilization of limited farmland: <ul style="list-style-type: none">Identify a suitable type of coconut intercropping, aligned to the local context and based on ICC and FAO guidelinesOrganize workshops at municipal level to raise awareness about intercropping practices and benefitsPrepare brief hand-out materials with simple guidelines and relevant contact information of extension workers.	State	2					<ul style="list-style-type: none">At least eight workshops organized annually at the State levelAt least 1,000 farmers aware of efficient intercropping optionsAt least 250 farmers report the application of intercropping practices	FSM DRD	COM-FSM CRE	100,000	
	1.1.7. Conduct awareness-raising campaigns on the relevance of the coconut sector for the FSM economy and livelihoods, engaging with producers, processors, municipal governments and community leaders. Consider using the approach applied by the Rare Pride Campaign: a hybrid of traditional conservation education and pure social marketing focusing on a change in knowledge, attitudes and behaviour.	National / State	1					<ul style="list-style-type: none">A five-year awareness-raising programme developedPer year: *at least one national-level event; four events at State level; *at least two types of promotional materials (video, radio programmes, social media, etc.) developed and disseminated; *four success stories featured in local media> 50% of HHs/farmers sell coconuts and/or engaged in coconut supply chain	FSM DRD	TKK, KSA, PNI, YAP, civil society organizations, NGOs	100,000–300,000	
1.2. Provide technical expertise to increase the volume and quality of production and processing	1.2.1. Adopt a GAP code for coconut, including food safety and quality criteria, and disseminate it to farmers as printed guidelines. Use codes developed in regional countries as a basis.	National	2					<ul style="list-style-type: none">A GAP code for coconut developedSome 2,000 copies disseminated to farmers	COM-FSM CRE	FSM DRD, TKK, KSA, PNI, YAP	30,000	

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
1.2. Provide technical expertise to increase the volume and quality of production and processing	1.2.2. Establish a new model for extension service provision involving the private sector, including input suppliers and buyers. Train a pool of private and public sector extension specialists from each of the four States on GAP for coconut planting, tree maintenance, harvesting and postharvest management to multiply knowledge at the local level. Include representatives from PGS groups in the training to enable them to provide basic sector training and information to their members, as per the PGS principles on education and training, defined in the PGS Guide FSM, Farmer's Handbook, 2018.	State	2						<ul style="list-style-type: none"> Twenty extension specialists (at least 5 of them women), distributed proportionally to the State population; at least eight specialists from the private sector At least 1,000 HHs/farmers advised on GAP by trained extension specialists (by 2028) 	FSM DRD	TKK, KSA, PNI, YAP, COM-FSM CRE, PGS	250,000
	1.2.3. Establish one demonstration farm per State to conduct research and demonstrate sustainable coconut farming systems (including storage and basic processing / copra drying). Possibly use the Standardized Coconut Plantation, built under a development project with China, as a base for agricultural technology demonstration and promotion in the country.	State	1						<ul style="list-style-type: none"> Four demonstration farms established (one per State) Eight hands-on trainings at each farm per year At least 1600 HHs/farmers trained, at least 250 are women 	COM-FSM CRE	FSM DRD, TKK, KSA, PNI, YAP	300,000–500,000
	1.2.4. Develop a vocational training programme on sustainable coconut production and processing, including curricula and training materials, to be provided by COM-FSM CRE.	National	2						<ul style="list-style-type: none"> A vocational training programme developed At least 50 people trained per year (at least 10 women) 	COM-FSM CRE		250,000
	1.2.5. Establish an annual knowledge transfer session between COM-FSM CRE and extension service providers (public and private) for new findings to be channelled to production level.	National	2						<ul style="list-style-type: none"> Five knowledge transfer events conducted At least 20 specialists with new knowledge (at least 5 women) 	COM-FSM CRE	FSM DRD, TKK, KSA, PNI, YAP	20,000–25,000
	1.3.1. Stabilize the supply of quality coconut to the processing facility: <ul style="list-style-type: none"> Rationalize the selection of coconut and copra suppliers based on distance, road networks, sea routes and warehouses (types, location, capacities) Define the harvesting schedule to obtain coconuts / copra of the required quality with contracted suppliers Liaise with the relevant transport authorities to schedule vessels. 	National / State	2						<ul style="list-style-type: none"> A coconut harvest forecast, with transportation schedule, piloted 	FSMPC	State DRD, FSM TC&I	50,000
1.3. Strengthen coconut storage and transportation for stronger farmer-buyer links	1.3.2. Establish and pilot harvesting services, including coconut tree climbers / coconut pickers, to interested farmers at the State level. Advertise the service through common channels, including radio, social media and printed media.	State	3						<ul style="list-style-type: none"> Harvest services piloted at the State level 	FSMPC	TKK, KSA, PNI, YAP	25,000

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5+	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
1.3. Strengthen coconut storage and transportation for stronger farmer-buyer links	1.3.3. Establish a technical working group to deal solely with logistics issues: intra-State, inter-State and international. The working group is to provide an annual report on the efficiency of the transportation system and issues resolved (<i>linked to Activity 2.1.1</i>). Initial tasks may include: <ul style="list-style-type: none"> Organize an import-export round table on sea freight optimization between exporters, importers and freight operators to combine volumes to fill containers currently delivering imports Analyse the feasibility of using more frequent regional and international shipping lines that pass from Chuuk to Pohnpei to bring required volumes of coconuts / copra to the currently operating processing facility Explore the option of having the Government contract private operators to deliver inter-island shipping services (<i>linked to Activity 1.3.1</i>). 	National / State	1						<ul style="list-style-type: none"> A subcommittee on logistics created and operationalized Logistics planning for regular coconut collection developed Deviation time from the agreed schedule minimized to +/- 1 week. 	FSM TC&I	State-level TC&I, State-level DRD, FSM Chamber of Commerce	125,000
	1.3.4. Designate collection centres / warehouses with primary processing equipment (de-husking) in major coconut-producing clusters to facilitate coconut supply, enable proper storage conditions (and repurpose waste as basic gardening intermediates, charcoal, construction materials, etc.). Link a warehouse receipt system to the designated infrastructure, allowing farmers to borrow capital against inventory and sell their output during periods of higher market prices. The system will reduce postharvest losses and quality deterioration, and improve farmers' income.	National / State	2						<ul style="list-style-type: none"> At least 2 warehouses designated and upgraded with primary processing equipment A warehouse receipt system adjusted to the specificities of the coconut sector 	FSMPC	FSM Chamber of Commerce, TKK, KSA, PNI, YAP	300,000
1.4. Optimize sustainable coconut resource utilization and value-added processing	1.4.1. Rapidly develop the Chuuk integrated coconut processing facility, based on a renewed product and market orientation assessment and using the principle of 'zero waste', to increase demand for coconuts.	National	1						<ul style="list-style-type: none"> Chuuk integrated coconut processing facility built and functioning 	FSMPC		20 million
	1.4.2. Adjust the processing of existing sector outputs for domestic consumption: <ul style="list-style-type: none"> Develop paring oil that could be sold as an alternative to palm oil Develop a line of local cosmetics and personal hygiene products – soap and hair oil – with CNO. 	National	2						<ul style="list-style-type: none"> A cost-benefit analysis conducted Confirmed products launched and supplied to local shops 	FSMPC		350,000
	1.4.3. Develop pilot projects for products made from husk and coir to be produced locally at primary processing facilities in the States (<i>linked to Activity 1.3.4</i>) and/or at advanced integrated coconut processing facilities (<i>linked to Activity 1.4.1</i>).	National / State	2						<ul style="list-style-type: none"> Husk-based products with high export potential selected and produced 	Trade and Investment Division (FSM DRD)	FSMPC, TKK, KSA, PNI, YAP	300,000

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
1.4. Optimize sustainable coconut resource utilization and value-added processing	1.4.4. Complete a study on the feasibility of remote island communities processing coconut palm inflorescence (e.g. for sap, sugar, vinegar, wine) for consolidation and packaging, and marketing in niche markets abroad.	National	2						<ul style="list-style-type: none"> A feasibility study on processing coconut palm inflorescence produced 	FSM Trade and Investment Division	COM-FSM	100,000
	1.4.5. Assess a business model for charcoal production, based on State-level and/or island-level shell collection and creation of shell charcoal pits. Training and expert assistance would be provided on creating shell charcoal. The produced charcoal could be consolidated for volume and further marketed by authorized operators.	National / State	2						<ul style="list-style-type: none"> A cost-benefit analysis conducted Shell charcoal production piloted in selected States 	FSM Trade and Investment Division	FSMPC, State DRD	400,000
2. Establish a conducive institutional framework and business conditions for sustainable industry growth												
2.1. Activate a coherent sector-specific institutional framework	2.1.1. Formalize and operationalize the CSDC, a formal public-private dialogue platform, as the industry development mechanism for Strategy implementation. Review and amend the Presidential Order of 11.01.2021.	National	1						<ul style="list-style-type: none"> Presidential Order 11.01.2021 amended to cover CocoNES implementation CSDC operationalized Regular meetings conducted 	FSM DRD	FSM Department of Justice	15,000 per year
	2.1.2. Activate the CocoNES Secretariat to provide operational, consultative and management support to the CSDC in CocoNES implementation and coconut industry development (terms of reference, organigram, job descriptions, budget). Review the Presidential Order of 11.01.2021.	National	1						<ul style="list-style-type: none"> Presidential Order 11.01.2021 amended to cover CocoNES implementation Secretariat funded and operationalized 	FSM DRD	FSM Department of Justice	150,000 per year
	2.1.3. Establish an FSM coconut producers (and processors) association bringing together private sector stakeholders, to be recognized as the principal national coconut private sector representative body. Work on Output 1.4 – Develop a network of State-level farmer associations across the FSM – with the Green Climate Fund Project <i>Climate-resilient food security for farming HHs across FSM</i> . As a start, create a national coconut producers and processors database / registry in cooperation with State-level governments and municipal authorities to establish regular communication with farmers.	National	1						<ul style="list-style-type: none"> A national coconut producers and processors database / registry developed and regularly updated FSM association of coconut producers (and processors) formalized 	FSM Division of Trade and Investment, FSM Chamber of Commerce, FSMPC, TKK, KSA, PNI, YAP		50,000
	2.1.4. Expand the functions of the FSM Food Laboratory to establish a quality control mechanism for key coconut products.	National	3						<ul style="list-style-type: none"> The feasibility of quality testing for coconut products assessed and needs for the facility upgrade confirmed The functions and services of the laboratory extended to coconut products 	FSM Department of Health		200,000

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
2.1. Activate a coherent sector-specific institutional framework	2.1.5. Formally recognize PGS groups for incorporation at the national level according to FSM Public Law 20–35 so they can conduct business activities such as trading of coconut products. Have business support service provider(s) assist PGS groups to meet incorporation requirements.	National	2						<ul style="list-style-type: none"> At least 30 PGS groups registered at the national level 	FSM Department of Justice	FSMPC	3,500
	2.2.1. Prioritize the coconut sector in agricultural and development policies and plans – particularly the FSM Strategic Development Plan and the Agricultural Policy – at both national and State level, for resource allocation and awareness-raising.	National / State	1						<ul style="list-style-type: none"> Coconut sector included in the FSM Strategic Development Plan, FSM Agricultural Policy and State-level plans 	FSM DRD	FSM Office of Overseas Development Assistance	N/A
	2.2.2. Strengthen the research and training role of COM-FSM for the coconut sector, in particular CRE. The expanded unit would be responsible for developing research, recommendations and publications on: <ul style="list-style-type: none"> Hybrid varieties or improved local high-yield varieties FSM-adapted tree management practices Crop protection and climate resilience Coconut processing and product quality, etc. As part of its services, CRE will provide trainings, advisory and extension services on the researched topics and guidance on GAP.	National / State	1						<ul style="list-style-type: none"> Coconut-specific research, services and trainings of COM-FSM CRE established 	COM-FSM CRE	FSM Department of Education	15,000 per year
2.2. Strengthen sector organization for product sophistication and diversification	2.2.3. Increase DRD capacities to manage coconut sector production: <ul style="list-style-type: none"> Assign a national coconut sector focal point (Government Coordinator) as part of a joint Secretariat to coordinate coconut-related data and activities across lead implementing agencies at national and State levels Organize agriculture extension services, in cooperation with COM-FSM CRE, on coconut-specific GAP (<i>linked to Activities 1.2.2 and 1.2.3</i>) Task the Office of Statistics to produce annual reports on sector performance, based on a defined set of indicators (<i>linked to Activity 1.1.1</i>). 	National	2						<ul style="list-style-type: none"> A national coconut sector focal point assigned and trained (immediate) Specialists on the coconut sector trained; coconut-specific extension services introduced Coconut sector statistics produced and regularly updated 	FSM DRD	TKK, KSA, PNI, YAP	18,000

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
2.2. Strengthen sector organization for product sophistication and diversification	2.2.4. Build the capacities of the Coconut Development Unit / FSMPC to facilitate and optimize selling, buying, exporting, manufacturing, processing and distributing coconut products: <ul style="list-style-type: none"> • Train assigned staff on sector intelligence, data and information for analysis and dissemination • Monitor and produce reports on coconut domestic markets and consumption, available on the FSMPC portal • Regularly expand expertise in processing technologies and equipment, including maintenance • Increase knowledge of technical requirements and standards required for export activities • Enable proactive market outreach. 	National	2						<ul style="list-style-type: none"> • Coconut Development Unit capacities strengthened on sector intelligence, processing technologies and equipment, technical requirements and standards, and market outreach 	FSMPC		50,000 per year
	2.2.5. Collaborate with the SBDCs in the States to consult and train farmers and PGS groups on business plan development, business management, business operations (including warehousing, harvest forecasting, acquiring and managing shared tools), bookkeeping and accounting, and access to finance, including accompanying applications for financial support (<i>linked to Activities 2.1.5 and 2.3.1</i>).	State	2						<ul style="list-style-type: none"> • Memorandum of understanding between SBDC and FSMPC complete • Some 60 PGS groups trained and consulted • A total of 30 PGS groups with common bank accounts 	FSMPC	SBDC	450,000
	2.2.6. Organize an annual Coconut Development Forum on International Coconut Day to raise the sector's profile at the national level, increase awareness of sector opportunities and build knowledge on product and market options, as well as get feedback from farmers and processors. Distribute awards to farmer groups and PGS groups in areas such as sustainable practices, innovation and contribution to community development.	National	2						<ul style="list-style-type: none"> • Coconut Development Forum organized annually 	FSM DRD		150,000
	2.2.7. Participate actively in the ICC. Ensure that the focal point regularly communicates updates on events, trainings, publications and research to relevant stakeholders, including DRD, COM-FSM and the FSM Chamber of Commerce.	National	2						<ul style="list-style-type: none"> • Per year: three briefing sessions on events, trainings, publications and research to relevant stakeholders • Recommendations on participation in events and trainings 	FSM DRD		50,000

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
2.3. Ensure access to financial instruments for sector growth and technological upgrades	2.3.1. Develop an FSM Development Bank credit line with preferential rates for coconut farmers for industry development, from planting to processing. Special financial schemes could be used to establish nurseries, purchase inputs, and obtain and maintain equipment and machinery, provided there is a solid plan.	National	2						<ul style="list-style-type: none"> Financial products with preferential rates adapted for coconut farmers developed 	FSM Development Bank	FSM DRD	100,000
	2.3.2. Establish a coconut sector development fund for the implementation of high-priority sector projects, including managing disruptions in the event of extreme weather conditions.	National	3						<ul style="list-style-type: none"> A coconut sector development fund introduced 	FSM DRD, DECEM		1 million
	2.3.3. Develop matching grants for tool and equipment acquisition, aimed at registered (at State or national level) coconut farmers' groups <i>(could be funded by the coconut sector development fund, linked to Activity 2.3.3)</i> .	National	3						<ul style="list-style-type: none"> A matching grant scheme developed A budget of \$30,000 allocated annually 	FSM DRD		50,000
	2.3.4. Provide tax incentives: <ul style="list-style-type: none"> To establish and stabilize the operation of incorporated PGS groups for the initial five years To promote the consumption of domestically produced coconut products (VCO, coconut milk and cream, coconut-based cosmetics and personal care products, etc.). 	National	2						<ul style="list-style-type: none"> Tax incentives assessed and provided as per the results of the assessment 	FSM Department of Finance and Administration	FSM DRD	N/A
3. Enable export of priority products to key target markets												
3.1. Improve sector planning capacity to supply international markets	3.1.1. Obtain access to and/or monitor online databases, publications and magazines for coconut-related products to follow sector trends and technologies, including ICC, Export Development Board (Sri Lanka), coconut development authorities in Sri Lanka and the Philippines, and publicly available ITC trade tools.	National	2						<ul style="list-style-type: none"> Per year: Two synopsis reports on sector trends and opportunities prepared 	FSM Trade and Investment Division		N/A
	3.1.2. Develop a market entry plan for primary products to resume exporting to regional markets while stabilizing adequate coconut supply and establishing new higher-value-added product lines: <ul style="list-style-type: none"> For copra, copra oil, oil cake / copra meal to the Philippines, Malaysia, Australia and the United States For shell charcoal to the Republic of Korea and Japan. For each market, identify and include: required standards, testing and certifications; duties, taxes and related costs applied; shipping options; and a list of potential buyers.	National	2						<ul style="list-style-type: none"> A market entry plan for coconut primary products developed 	FSM Trade and Investment Division	FSMPC	50,000

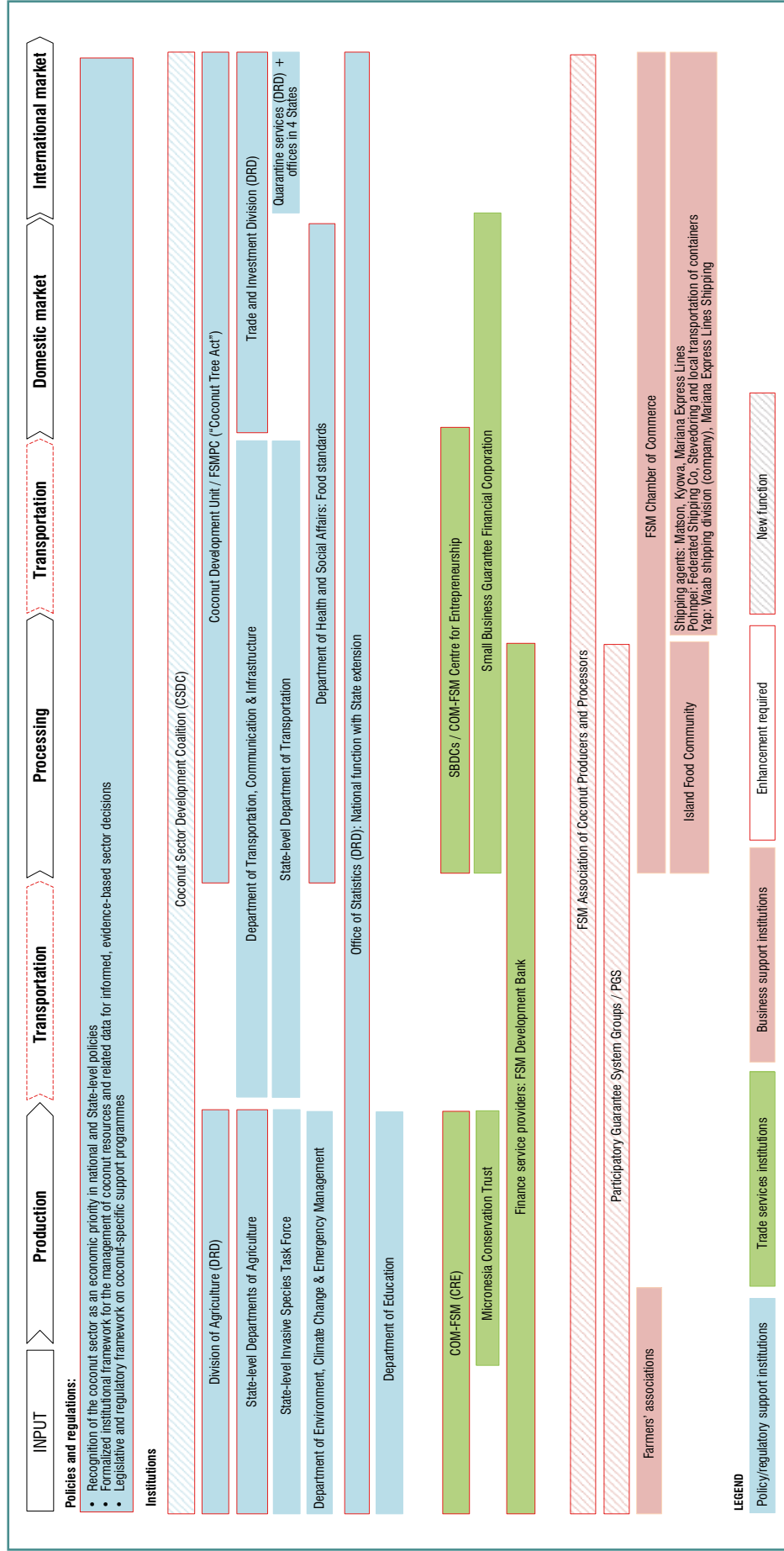
Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
3.1. Improve sector planning capacity to supply international markets	3.1.3. Identify and proactively target potential buyers for the existing higher-value-added product – VCO – in the United States to explore the fast-growing coconut market and leverage existing economic relations. Conduct research on consumer preferences; product volumes and packaging; technical regulations, required standards, testing and certifications; duties, taxes and related costs applied; and shipping options.	National	2						<ul style="list-style-type: none"> Adjust VCO products to United States market requirements An outreach campaign implemented Two lead buyers identified 	FSM Trade and Investment Division		80,000
	3.1.4. Once capacities increase, develop a market entry plan for higher-value-added products (existing and upcoming) with export potential: VCO, coconut water concentrate, coconut flour, coir products / coconut peat – to Australia, Japan, the United States and China – to tap into voluminous regional coconut markets. For each market, identify and include: demand for the selected product and consumer preferences; required standards, testing, and certifications; duties, taxes and related costs applied; shipping options; and a list of potential buyers.	National	3						<ul style="list-style-type: none"> A market entry plan for higher-income regional markets developed 	FSM Trade and Investment Division		80,000
	3.1.5. Develop a market entry plan for higher-value-added products – VCO, coconut water concentrate, coconut flour, coconut milk, coconut sugar – to supply niche markets in high-income countries beyond the region: Germany, France, the Netherlands, Spain and the United Kingdom. For each market, identify and include: demand for the selected product and consumer preferences; required standards, testing, and certifications; duties, taxes and related costs applied; shipping options; and a list of potential buyers.	National	3						<ul style="list-style-type: none"> A market entry plan for European markets developed 	FSM Trade and Investment Division	FSMPC	80,000
	3.1.6. Once the quality of coconut products is ensured, explore e-commerce as a distribution channel through company-level websites, social networks or dedicated online marketplaces.	National	2						<ul style="list-style-type: none"> FSM-produced coconut products available online for purchase 	FSMPC		100,000
	3.1.7. As part of trade negotiations, integrate: <ul style="list-style-type: none"> Preferential access – duty-free, quota-free – for coconut products to the EU market under the EU–Pacific EPA A reciprocity clause on United States–FSM postal conditions in the legal framework with the USPS. 	National	3						<ul style="list-style-type: none"> EU–Pacific EPA negotiated, including coconut products The reciprocity between the United States–FSM clause integrated 	FSM Trade and Investment Division		N/A

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
3.2. Develop abilities to meet product technical regulations and standards in export markets	3.2.1. Develop and disseminate guidelines for coconut suppliers on acceptable product quality and the quality control mechanism (<i>linked to Activity 1.2.1</i>).	National / State	2						<ul style="list-style-type: none"> A manual on coconut quality and a quality control mechanism for coconut producers developed Some 2,000 farmers aware of the quality requirements for processing 	FSM DRD	COM-FSM CRE	15,000
	3.2.2. Obtain base quality certifications to enable access to target export markets. Based on market entry plans, consider ISO 22000, Good Management Practices, HACCP, International Featured Standard Food, Food Safety System Certification 22000, British Retail Consortium Food (<i>linked to Activities 3.1.2–3.1.5</i>). ISO 22000 is recommended for immediate prioritization.	National	2						<ul style="list-style-type: none"> One mandatory certification obtained 	FSMPC	FSM Trade and Investment Division, FSM Department of Health	20,000
	3.2.3. Invite an industry expert to provide training on relevant voluntary standards, and organic, fair, and environmentally and socially responsible farming. Given the medium-term market orientation, the focus could be on the United States Department of Agriculture National Organic Program (United States), Japanese Agricultural Standard Organic (Japan), EU Organic (EU) and Australian Organic. (<i>Linked to Activities 3.1.2–3.1.5</i>)	National / State	2						<ul style="list-style-type: none"> Eight trainings on market-specific voluntary certification conducted Twenty government and private sector participants aware of the benefits, requirements and processes 	FSMPC	FSM Trade and Investment Division	80,000
	3.2.4. Assist one farmer group to get certified and accredited as organic. Hold demonstrations on production practices and related inventory requirements to sensitize other coconut producers and processors.	State	2						<ul style="list-style-type: none"> One farmer group certified as organic 	FSMPC	FSM Trade and Investment Division	20,000
3.3. Implement proactive marketing and branding for uniquely Micronesian coconut products	3.3.1. Establish a dedicated FSM brand promotion website for coconut products for global customers: <ul style="list-style-type: none"> Agree on the key messaging and concepts of the brand to position the Micronesian offer with distinct value identification; consider brand differentiation for different categories of consumers Create an authentic brand story to address the social and environmental aspects of production and processing, and community returns Develop social media campaigns to target business opportunities and business partners, including in Google My Business, Facebook, LinkedIn, YouTube and Instagram Enable an intranet function for domestic coconut suppliers. 	National	2						<ul style="list-style-type: none"> FSM brand promotion website for coconut products developed and functional 	FSM Trade and Investment Division	Vital, FSM and State DRD	150,000

Operational objectives	Activity	Activity level	Priority	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5 +	Targets	Lead implementer	Supporting institutions	Estimated cost (\$)
3.3. Implement proactive marketing and branding for uniquely Micronesian coconut products	3.3.2. Pronounce 2024 as the 'Year of Coconut for Life' and organize trade-oriented workshops, exhibitions, symposiums and contests with participation of international representatives throughout the year.	National	2						<ul style="list-style-type: none"> Government announcement of 'Year of Coconut for Life' for 2024 communicated 	FSM DRD		100,000
	3.3.3. Develop and activate partnerships with international coconut-oriented associations and networks, focusing on countries and markets with the highest potential for FSM (e.g. Coconut Coalition of the Americas).	National	2						<ul style="list-style-type: none"> Two partnerships with sector-specific associations established 	FSM Trade and Investment Division		30,000
	3.3.4. Develop a national campaign promoting local consumption of domestically produced coconut products, including cooking oil and VCO (<i>linked to Activity 1.1.8</i>).	National / State	1						<ul style="list-style-type: none"> Partnership with the Department of Health established A national campaign promoting local consumption developed Per year: one event at national level; four events organized at State level 	FSM Trade and Investment Division	FSM Department of Health, TKK, KSA, PNI, YAP	100,000–300,000
	3.3.5. Organize round tables to build links between tourism and the coconut sector to promote products to visitors: consider implementation of joint marketing activities, farm tours, excursions to coconut processing facilities / projects.	National	3						<ul style="list-style-type: none"> Per year: two round tables conducted 	FSM Trade and Investment Division	State DRD, Tourism, FSM Office of Overseas Development Assistance	20,000
	3.3.6. Promote local coconut products at events attended by international visitors, such as the annual FSM Expo and World Coconut Day.	National	2						<ul style="list-style-type: none"> An interactive stand with coconut products arranged at FSM Expo, on Annual World Coconut Day 	FSM Trade and Investment Division	FSM Chamber of Commerce	70,000 per year
	3.3.7. Participate in selected international trade fairs in target markets to build business networks and find new clients. The following trade fairs could be considered given their relevance to market entry plans, visibility and participation rate: <ul style="list-style-type: none"> Short to medium-term: Expo West – United States, FoodEx – Japan, SIAL China Long-term: BioFach – Germany, Anuga – Germany, SIAL Paris – France, Gulfood – United Arab Emirates. (<i>Linked to Activities 3.1.2–3.1.5</i>). 	National	3						<ul style="list-style-type: none"> Participation in two selected trade fairs 	FSM Trade and Investment Division		50,000

Annex I:

Overview of the FSM trade support network



Annex II:

Participants engaged during the consultations

Name	Organization	Location	National/State
Alex Esoulipiye	Yap Cooperative Association	YAP	State
Ali Tafileisan	Yap Cooperative Association	YAP	State
Arlyne Chugen	Department of Resources & Development	YAP	State
Bend Seneral	Department of Resources & Development	YAP	State
Charles L Taman	MAAP Toruu	YAP	State
Charles Yalaarow	Coco Inc.	YAP	State
Francilla Gomtin	CTSI	YAP	State
Francis Ruigorong	Department of Agriculture and Forestry	YAP	State
George R. Torwan	WAAB Shipping Agency	YAP	State
Geraldine Mitagyow	Coco Inc.	YAP	State
Jacqueline Duraen	Vital	YAP	National
James G. Lukan	Waab Transportation Company/Waab Shipping Agency	YAP	State
Jim Ruetamngig	RGM Coconut oil Company	YAP	State
John Garadwey	Waab Transportation Company/Waab Shipping Agency	YAP	State
John Gilsowuth	Vital	YAP	National
Johnathan Figirmai	Waab Transportation Company/Waab Shipping Agency	YAP	National
Joseph Giliko	YSC	YAP	State
Merlyn Guchol	Waab Transportation Company/Waab Shipping Agency	YAP	State
Stan Yowblau	Gagil	YAP	State
Tim Ruetmngig	Wanyan Gagil	YAP	State
Tony Rutmag	Yap Department of Resources & Development	YAP	State
Willie Bamia	CTSI	YAP	State
Adore William	Environmental Protection Agency/Adaptation Fund	TKK	National
Brendaly Atan	College of Micronesia, Cooperative Research & Extension	TKK	National
Candace David	College of Micronesia, Cooperative Research & Extension	TKK	National
Clarice Etop Graham	Chuuk Conservtion Society	TKK	State
Dominino Always	Land Commission	TKK	State
Erminio Ruback	SOU Organization	TKK	State
Harmen Mailo	Chuuk Department of Agriculture	TKK	State
Kalvin Assito	College of Micronesia, Cooperative Research & Extension	TKK	National
Ketsen Haregaichy	Small Business Development Center	TKK	State
Lisa Marie Billy	Vital	TKK	National
Lolita N. Ragus	College of Micronesia, Cooperative Research & Extension	TKK	National
Mike Abbe	College of Micronesia, Cooperative Research & Extension	TKK	National
Mondale Tim	Chuuk Department of Agriculture	TKK	State
Redley Killion Jr.	Vital	TKK	National
RN Ikeso	President Association	TKK	State
Roger Mori	Chuuk Governor's Office	TKK	State
Sabrino Robert	Division of Agriculture & Quarantine, FSM Department of Resources & Development	TKK	National

Name	Organization	Location	National/State
Tiffany Mori	Vital	TKK	National
Vincent Ritak	College of Micronesia, Cooperative Research & Extension	TKK	National
Wilfred Robert	Catholic Relief Service	TKK	State
Yvonne Johnny	FSM Overseas Development Assistance Office	TKK	National
Florian Yatilman	FSM, Department of Resources & Development	PNI	National
Mark Kostka	FSM, Department of Resources & Development	PNI	National
Jorg Anson	FSM, Department of Resources & Development	PNI	National
Menoleen Jacob	FSM, Department of Resources & Development	PNI	National
Altrin Ligor	Parem PGS Inc.	PNI	State
Brandon Tara	FSMDB	PNI	National
Bryan Wichep	College of Micronesia, Cooperative Research & Extension	PNI	National
Coltrick Albert	Pohnpei Port Authority/OCI	PNI	State
Dane Ioanis	Kitti Municipal Government	PNI	State
Danny Henry	Mwokilloa Government	PNI	State
Dorian Peter	Ray & Dor's	PNI	State
Hannah Marie Isaac	Vital	PNI	National
Ivenlynn Andon	Micronesia Conservation Trust	PNI	National
Jerome Shed	College of Micronesia, Cooperative Research & Extension	PNI	National
Jason Walter	Committee on Resources & Development, Pohnpei State Legislature	PNI	State
John A. Daniel	Transportation & Infrastructure, Pohnpei State Government	PNI	State
John P. Wichep	Division of Agriculture & Quarantine, Department of Resources & Development, FSM	PNI	National
Johnny Hentrick	Lohd PGS	PNI	State
Juity Hainrich	Nukuoro Municipal Government	PNI	State
Kesusa Marques	National Food Lab, FSM Department Health & Social Affairs	PNI	National
Kimmy Rodrigus	College of Micronesia, Cooperative Research & Extension	PNI	National
Kioleen Gamure	Vital	PNI	National
Mohns Gilmete	Division of Public Lands, Department of Land	PNI	State
Makio James	Pingelap Municipal Government	PNI	State
Marciano Imar	Division of Agriculture & Quarantine, Department of Resources & Development, FSM	PNI	National
Margaret Baekalie	National Food Lab, FSM Department Health & Social Affairs	PNI	National
Mariano Marin	Department of Land, Pohnpei State Government	PNI	State
Michaela Saimon	Department of Resources & Development, Pohnpei State Government	PNI	State
Penepas Andon	Pingelap Municipal Government	PNI	State
Philpmatera Mercado	PIFS, FDepartment of Resources & Development, FSM	PNI	National
Renwick Weilbacher	Division of Agriculture & Quarantine, Department of Resources & Development, FSM	PNI	National
Rickyes Ikin	College of Micronesia, Cooperative Research & Extension	PNI	National
Saimon Lihpai	Division of Forestry, Department of Resources & Development, Pohnpei State Government	PNI	State
Senard Leopold	Nukuoro Municipal Government	PNI	State
Sharon Pelep	Statistics, FSM Department of Resources & Development	PNI	National
Susan Anson	Small Business Guarantee & FC	PNI	State
Smithy Clark	Pingelap Municipal Government	PNI	State
Stanley Raffilman	Division of Trade & Investment, FSM Department of Resources & Development, FSM	PNI	National

Name	Organization	Location	National/State
Stephanie Edward	Vital	PNI	National
Susana Hentrick	Vital	PNI	National
Tom Kostka	Division of Marine/ FSM Department of Transportation, Communications, & Infrastructure	PNI	National
Trevayne Esiel	Community Alliance PGS Inc.	PNI	State
Trisden Elias	College of Micronesia, Cooperative Research & Extension	PNI	National
Y Alfons	Pein U PGS	PNI	State
Caroline Phillip	Federated Shipping Co., Ltd.	PNI	State
Damien Semens	Vital	PNI	National
Anselina Nickolas	Vital	PNI	National
Gyrone Samuel	COM-FSM/CRE	PNI	National
Robert Nakasone Jr.	Department of Justice, FSM	PNI	National
Sean Isaac	Department of Transportation, Communication, and Infrastructure, FSM	PNI	National
A. Palsis	KDO	KSA	State
Alikrsu. Kilafwakun	Department of Resource and Economic Affairs/Crop	KSA	State
Andriet. Tilfas	Kosrae Chamber of Commerce	KSA	State
C. L.	Utwe Municipal Government	KSA	State
Catherine George	DREA/ Land Management	KSA	State
Canston Segal	Utwe Municipal Government	KSA	State
Hans Skilling	Public Information Office/Micronesia Red Cross Society	KSA	State
Hosia Saimon	Tropical Breeze Shipping	KSA	State
Jackson Albert	Tafunsak Municipal Government	KSA	State
Jason Livaie	Department of Resources & Economic Affairs/Agriculture Livestock	KSA	State
Kenye Liva	WIFIC	KSA	State
Kenye M. Sigrah	Department of Resources & Economic Affairs/Agriculture Livestock	KSA	State
Kenye Tulensru	Department of Resources & Economic Affairs/Agriculture Livestock	KSA	State
Kenyett Lisao	Women in Farming/Kosrae Women Association	KSA	State
Peeno Waguk	Department of Resources & Economic Affairs/Agriculture Livestock	KSA	State
Presley Abraham	Lelu Town Government	KSA	State
Rebecca Palsis	SeaLand Shipping	KSA	State
Reed Tilfas	Department of Resources & Economic Affairs/Agriculture Livestock	KSA	State
Rensley Sigrah	Vital	KSA	National
Roxanne Charley	Department of Resources & Economic Affairs, Kosrae State Government	KSA	State
Shrue J	Malem Municipal Government	KSA	State
Smith Sigrah	Kosrae Chamber of Commerce	KSA	State
Soni Charley	College of Micronesia	KSA	National
Syvila Salik	Department of Resources & Economic Affairs/Agriculture Livestock	KSA	State
Likiak Melander	Department of Resources & Economic Affairs/Agriculture Livestock	KSA	State
Yamado Melander	Kosrae State Legislature	KSA	State

REFERENCES

Amcor. (2022, January 25). *5 plant-based dairy alternative trends to watch in 2022 and beyond*. <https://www.amcor.com/insights/blogs/dairy-alternatives-trends-2022>

Asian Development Bank. (2022). *The economic impacts of the end of compact grant assistance in the freely associated states*. <https://pitiviti.org/pitiviti.org/public/storage/dm/2022/05/adb-report-2022-final-digital-4-fix-20220506211212360.pdf>

Bourdeix, R. (2019). *Coconut planting material for the Pacific region: Federated States of Micronesia*. Replantcoconut.blogspot.com. <http://replantcoconut.blogspot.com/2019/09/federated-states-of-micronesia.html>

Federated States of Micronesia. (2018). *Participant guarantee system: The PGS guide*. <https://fsm-data.sprep.org/index.php/system/files/PGS%20Guide%20FSM%20Version%201.0.pdf>

Federated States of Micronesia Department of Resources and Development. (2012). *Federated States of Micronesia agriculture policy, 2012–2016*. <https://fsm-data.sprep.org/dataset/fsm-agriculture-policy-2012-2016>

Federated States of Micronesia Department of Resources and Development Statistics Division. (2019). *Integrated agriculture census 2016*. http://www.fsmrd.fm/wp-content/uploads/2020/06/200120_FSM_IAC_2016.pdf

Fortune Business Insights. (2021). *Coconut derivatives market size, share and COVID-19 impact analysis, by type (young and mature), by derivatives (coconut oil, coconut water, coconut milk, desiccated coconut, and others), end-user (food & beverages, cosmetics, pharmaceuticals and others), regional forecast, 2020–2027*. <https://www.fortunebusinessinsights.com/industry-reports/coconut-derivatives-market-100540>

Haller, K., Lee, J., & Cheung, J. (2020). *Meet the 2020 consumers driving change*. IBM Institute for Business Value. <https://www.ibm.com/downloads/cas/EXK4XKX8>

Index Mundi. (2023). *Coconut oil monthly price – US dollars per metric ton*. <https://www.indexmundi.com/commodities/?commodity=coconut-oil>

International Coconut Community. (2021, July 22). *International workshop on quality standards of coconut products*. <https://coconutcommunity.org/public/index.php/news-page/international-workshop-on-quality-standards-of-coconut-products>

International Coconut Community. (2022a). *Cocoinfo International*, 29(2). <https://apccsec.org/page-publication/162/3>

International Coconut Community. (2022b). *The Cocommunity*, October, 14. <https://coconutcommunity.org/page-publication/164/1>

International Coconut Community. (2022c). *The Cocommunity*, November, 26–27. <https://coconutcommunity.org/page-publication/164/1>

Kyowa Shipping Co., Ltd. (2023). *Schedule*. <https://www.kyowa-line.co.jp/en/schedule/schedule.html>

Mariana Express Lines. (2023). *Schedule*. <https://www.mellship.com/Schedule>

McGregor, A., & Sheehy, M. (2017). *An overview of the market for Pacific Island coconut products and the ability of industries to respond*. Pacific Community. https://pacificfarmers.com/wp-content/uploads/2018/02/CIDP_Report_Final_e-copy_resized.pdf

Prades, A., Salum, U.N., & Pioch, D. (2016). New era for the coconut sector. What prospects for research? *OCL - Oilseeds and fats, Crops and Lipids*, 23(6) D607. <http://dx.doi.org/10.1051/ocl/2016048>

Research and Markets. (2019). *Coconut products market by type application and form: Global opportunity analysis and industry forecast, 2019-2026*. <https://www.researchandmarkets.com/reports/4989541/coconut-products-market-by-type-application-and>

Research and Markets. (2020). *Coconut products market analysis report – industry size, trends, insights, market share, competition, opportunities, and growth forecasts by segments*.

Research and Markets. (2021). *Coconut product market: Global industry analysis, trends, market size, and forecasts up to 2026*. <https://www.researchandmarkets.com/reports/5316643/coconut-product-market-global-industry>

Singh, P., Dubey, P., Younis, K. & Yousuf, O. (2022). A review on the valorization of coconut shell waste. *Biomass Conversion and Biorefinery*. <https://doi.org/10.1007/s13399-022-03001-2>

Sri Lanka Coconut Development Authority. (2020). *Sri Lanka coconut statistics*.

Vital. (2013). *Federated States of Micronesia coconut assessment report*.

World Bank. (1986). *Agro-industry profiles: Coconut*. <https://documents1.worldbank.org/curated/en/309941468180567229/pdf/FAU4.pdf>

World Health Organization. (2003). *The Codex process: a reference manual for Pacific island countries*. http://apps.who.int/iris/bitstream/handle/10665/207723/9290610840_eng.pdf?sequence=1&isAllowed=y



FSC is an independent, non-governmental, not for profit organization established to promote the responsible management of the world's forests.

Printed by ITC Digital Printing Service on FSC paper, which is environmentally-friendly paper (without chlorine) using vegetable-based inks. The printed matter is recyclable.

The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the International Trade Centre concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

This document has not formally been edited by the International Trade Centre.

