

# Vanilla Voluntary Sustainability Standard

UNDP/PNG Department of Foreign Affairs



NANCY IRWIN, PhD, BSc (hons), FLS



5<sup>th</sup> year Vanilla exporter  
 55 staff in season  
 13,200 registered farmers  
 4,500 banked  
 @3000 NID delivered  
 Agri-technology  
 First digital mobile-phone microloan for PNG

**MiBank**  
GROW WITH US

**RURAL LOAN**

**Interest Rate**  
**1.5%**  
per month

Must be a vanilla farmer  
 Has sold beans to KAMAPIM LTD at least once before  
 Has other source(s) of income  
 Has participated in the loan training  
 Must have a mobile phone  
 Must have a Mibank account

**"Financing your agricultural farming needs"**

**The eligible farmer loan amounts**

- K300
- K500
- K1,000

**The loan processing fees**

- 1.5% on loan amount
- K20 fee per application

f in t  
 www.mibank.com.pg  
 CALL CENTER  
**16789**  
 FREE CALL





## Certificate of Registration

Certified Licensee:

**Kamapim Limited**

**Business Number: 1-119474**

Certification Number:

**8594GG**

**Primary Address:**

PO Box 2098, Madang, 511, PAPUA NEW GUINEA

**Operation Address / Facilities:**

Collection Depot Jais Aben North Coast Highway , Madang, 511, PAPUA NEW GUINEA

Yikmol and Kokomav Landowner Association Groups Sumkar and Middle Ramu Districts, Madang,  
Madang Province, PAPUA NEW GUINEA

See the attached Annex for a list of all certified products

# Introduction

1. VSS
2. Why Focus on Vanilla in Papua New Guinea
  1. Alleviate poverty for remote rural farmers (few other cash crops)
  2. Capitalise on PNG rising international prominence



# Vanilla species in PNG

- Planifolia- big pela lip
  - Grows well >400m
  - Flowers once a year
  - Grows to 28cm
  - Sometimes fails to flower due to climatic conditions

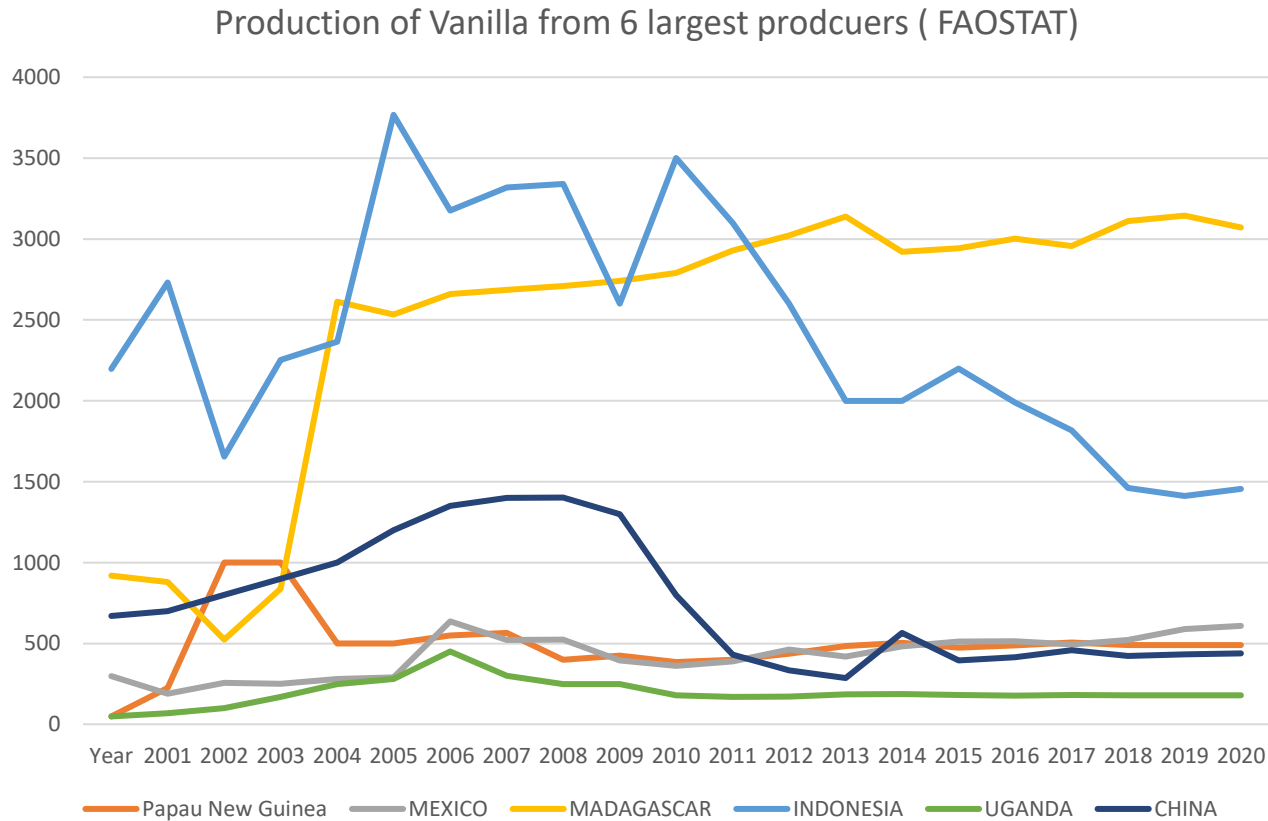


## Tahitensis-

- Grows well 200<800m
- Common in the islands and Madang
- Grows to 24cm
- Flowers twice a year- generally



# Vanilla market by volume for 20 years



PNG export 490 tonnes (2021)

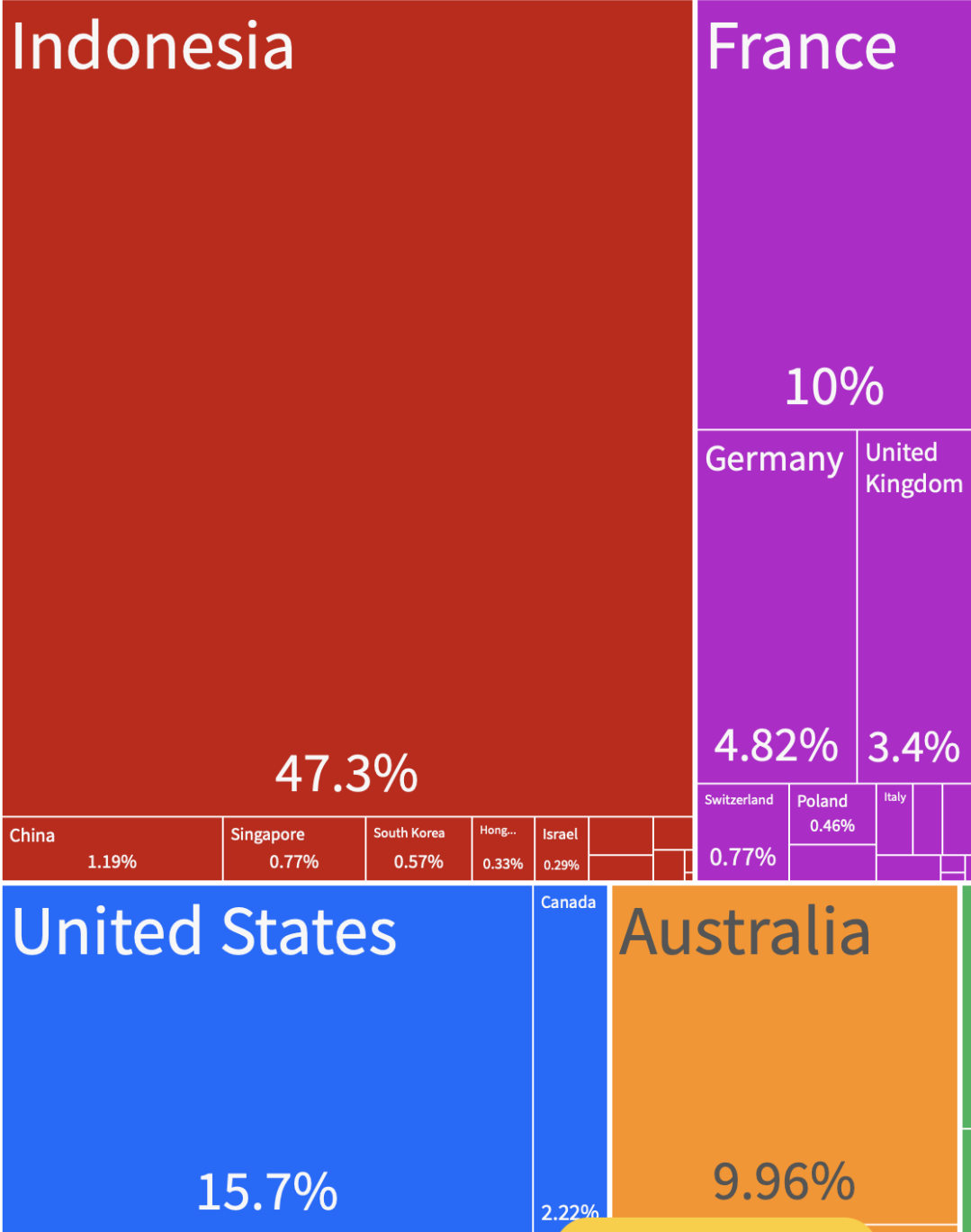
PNG fifth largest producer of vanilla.

Largest exporter of *V. tahitensis*

Indonesia exports 4 x more than PNG

Total: \$29.9M

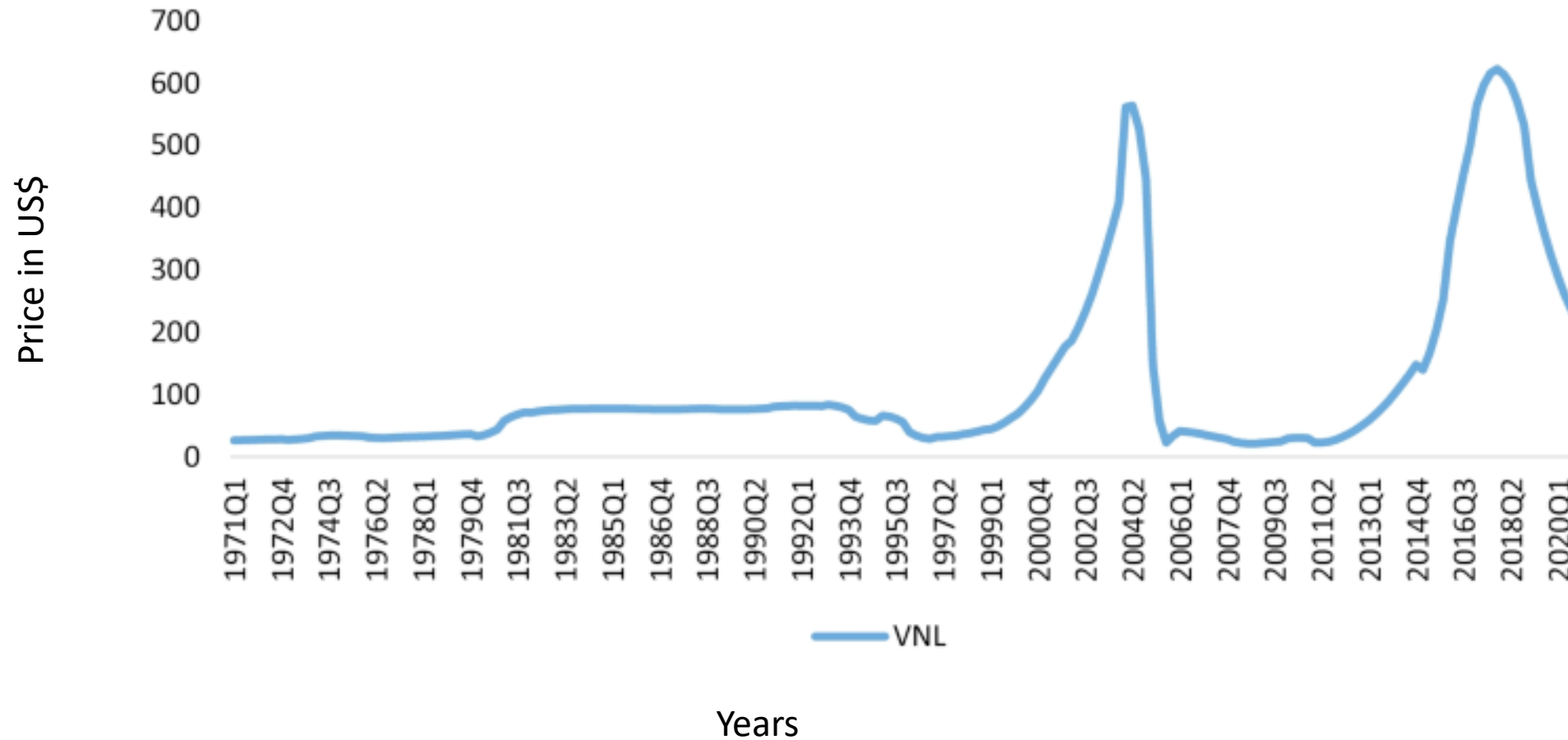
Where does PNG  
vanilla go?





# Vanilla market by Price for 30 years

NB: majority of time below 100US\$



# Market is about to Crash!



- VANILLA MARKET UPDATE – MAY 2023
- \$400.00/kg to approx. \$50.00/kg in the space of 12 months, slowly degrading further the following years and reaching lows below \$20.00/kg in 2010 (prices indicated for G1 quality Madagascar vanilla beans)
- Monday: farmers trading 4.2US\$/KG
- MAY: The retail price range in Kina for vanilla is between PGK 88.13 and PGK 123.38 per kilogram (<https://www.selinawamucii.com>)

What is quality?



## QUALITY IS:

- Aroma
- Oil
- Supple
- Intact hook
- Black/v dark (cured properly)
- Moisture (20-28%)



## QUALITY IS NOT:

- No aroma
- No oil
- breakable
- broken hook
- brown (not cured properly)
- Dry (<19% moisture)
- Moldy

# Market for most things...

- Size
- Color
- Marks on the skin
- Shape



# Madagascan grading

- Black – 35-38%
- Gourmet- 25-35%
- TK. – 30%
- American Red- 20-25%, fox like red colour
- Vrac <20%, broken, cut brittle pieces

# General grading

## Grade A

- Indicate beans that are black, intact, and nice in appearance and have no marks

## Grade B

- Indicate beans that are brown, messy, and ugly in appearance. Often, it is used to sell garbage-grade vanilla with no flavour or that has been extracted.

## Shorts

- Naturally short vanilla <14cm. No difference in the end flavour or character. 14cm. Split naturally from sun curing, or by hand, with no difference in the end flavour or character.

## Cuts

- Size, strange shape, and are very messy or cut or small, crooked, bent, or otherwise. There is no difference in end flavour profile.

# PNG typical grading

- A- beans larger than 20cm
- B- beans larger than 18 cm with small marks
- C- Dry
- D- something else
- Rejects- moldy beans



# Current initiatives Voluntary standards

- International standards organisation has a standard for vocabulary to describe vanilla **ISO 3493:2014**. Where each type of vanilla product is described with a grade description.
- **ISO 5565-1:1999 Standards** for *Vanilla fragrans* (Salisbury) Ames, syn. *Vanilla planifolia* Andrews. Applicable standards to vanilla in pods, bulk, cut or in the form of powder. It is not applicable to vanilla extracts.
- **ISO 5565-2:1999 Test methods** for *Vanilla fragrans* (Salisbury) Ames, syn. *Vanilla planifolia* Andrews.
- Food Law standards **CODEX CCSCH6**
- REPORT OF THE UNITED STATES DELEGATE TO THE 6th SESSION OF THE CODEX COMMITTEE ON SPICES AND CULINARY HERBS September 26 – 30 and October 3, 2022
- Members / CCEXEC81 / CAC44

# CODEX

Name	Form/Style	Moisture content %w/w (max)	Total Ash on dry basis % w/w (max)	Acid Insoluble Ash on dry Basis % w/w (max)	Vanillin Content on dry basis g/100g
Vanilla	Whole	15-38	5	1	>1
	Cut/Broken	10-25	5	1	>1
	Ground/ powdered	<15	5	1	>1
	Vanilla caviar	N/A	5	1	> 0.2

# Other relevant standards

- Food safety
- Packaging e.g. (ISO/IEC Guide 41:2018(en))
- Labelling
- Pesticide Minimum Residual Limits (consumer protection)
- Treaties
- Nicotine- limits to 0.05mg in Sept for EU.

# Production (cultivation, post-harvest processing, packaging, export)

- Post harvest processing is not to food standards
- Packaging – needs to be controlled to food labelling standards.



Rusty copper often  
used to dry vanilla



# Poor quality

- Picking early
- No Vanillin
- Mould
- No market... but there is...

# Häagen-Dazs ice cream recall

- Positive for ant-fungal chemical ethylene oxide, a pesticide that is not authorised for use in food.
- Found in extract
- Madagascar has banned this chemical for a long time, which meant contamination came from elsewhere.
- Recalled more than 450,000 tubs.



# Value Chain in PNG

## Analysis of the value Chain

### Actors

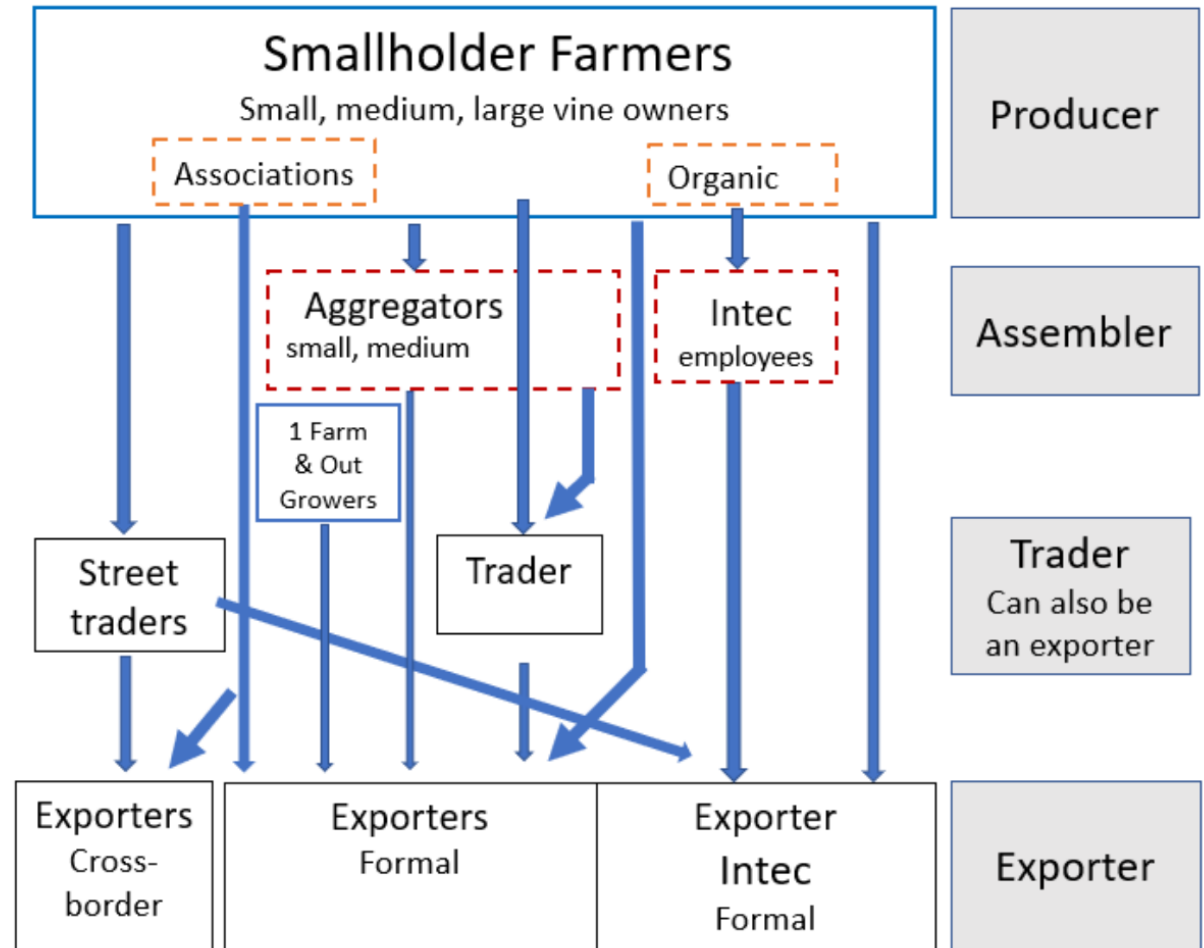
Farmers/Association/Cooperatives

Middlemen

Aggregators

Exporters

Chain length & consolidation



# Value Chain in PNG

## 2. Stakeholders

- IPA/IRC (registration as a business)
- Spice board (license to export)
- Quarantine (NAQIA) enforce strong quality checks
  - Specific regulation to prevent export of mould?
- Customs (export) should ensure VSS is adhered to at export

## Value Chain Analysis of vanilla in Papua New Guinea



Claire Coote  
Richard Lamboll  
Helena Farrall  
Veronica Bue

October 2019



# Madagascar's vanilla wars: prized spice drives death and deforestation

As the price of pods has soared so has violence - and forest defenders are increasingly risking their lives to protect precious wildlife habitat from being felled for profit



▲ Rich pickings: the price of vanilla has risen more than tenfold in the past five years. Photograph: Jonathan Watts for the Guardian

# How to make a VSS work in PNG

## 1. Adoption

- Different Motivation of actors (along value-chain)
- Different types of certifications (farmer level, company level)

## 2. Benefits

- Increases focus on quality and consistency
- Price premium (perhaps in bust years, probably not in boom years)
- Regular contracts with overseas clients (coping with boom/bust cycle)

# Testing for quality

1. Vanillin testing
2. Moisture testing
3. Microbial counts
4. Pesticide
5. Nicotine

Need facilities close to export, with rapid turn around time

## Methods for analyses of Vanillin content

Spices	Provision	Method <sup>(1,2)</sup>	Principles	Type
Vanilla	Moisture	ISO 939	Distillation	I
	Extraneous matter	ISO 927	Visual examination followed by Gravimetry	I
	Insect fragments	ISO 927	Visual examination counting	I
		AOAC 975.49	Flotation method	IV
	Vanillin	ISO 5565	Distillation followed by HPLC or UV spectrophotometer	I
	Total ash	ISO 939 and ISO 928	Distillation followed by Gravimetry.	I
	Acid-insoluble ash	ISO 939 and ISO 930	Distillation followed by Gravimetry.	I

# Packing for export



Wax paper in boxes

No place to buy wax paper in PNG



Vacuum bags

Banned in Madagascar- for storage and for export

# Strengths & Weakness of Value Chain

Internal	<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Strong capability of numerous individuals along the vanilla VC in producing, curing and marketing</li> <li>• Areas of PNG are agro-ecologically ideal for vanilla production</li> <li>• Growing reputation as a contender to Madagascar Bourbon vanilla</li> <li>• Very high value to weight ratio</li> <li>• High returns per hectare and per workday when prices high</li> <li>• Good mechanisms via social media for farmers to access domestic price information</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Individual access to finance for trading and access to global market information</li> <li>• Collective capacity generally low; particularly in marketing PNG vanilla as a brand</li> <li>• Low capacity of farmer organisations</li> <li>• Food safety may be an issue along medium-scale and informal vanilla VC</li> <li>• Poor roads in main producing areas</li> <li>• Perceived unfair allocation of portion of export levy revenue attributed to province where packing occurs rather than production</li> <li>• Low productivity</li> <li>• Not easy to access global daily prices</li> <li>• No one (stop-shop) organisation representing the vanilla sector</li> </ul>
External	<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Global demand for natural vanilla and Tahitensis species growing</li> <li>• Specialised online retailers highlighting provenance and unique characteristics</li> <li>• Markets looking for socially and environmentally responsible production</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Global price volatility</li> <li>• Climate change could affect agro-ecology and increase disease risk</li> <li>• Food safety requirements in the USA and EU</li> <li>• Negative perception of PNG as dangerous, difficult and expensive place to do business</li> <li>• Natural vanillin substitutes</li> <li>• New/up and coming producers – Florida, Tanzania, Comoros, Cook Islands, Samoa</li> </ul>

Strengths	Weakness
PNG farmers can make anything grow!	Production in unsuitable climates for drying and storage
People carry it anyway	Infrastructure
One of only two countries growing 2 species. Largest producer of <i>v. tahitensis</i>	Costs in PNG (labor, fuel, domestic transport)- 17x more expensive than Indonesia!
Growing demand for organic and environment and social certification where PNG should thrive	Food Safety standards
	Pesticides not updates and no local testing facilities, limited testing laboratories
People easy to train	Lack of knowledge for processing and storage



Ideas to improve standards





# License vs levy

Levy/tariffs on export	Strengthen Licensing requirements
When price is low <50US\$ an extra 5US\$ in tax will make the product uncompetitive globally	149 licenses in Madagascar how many in PNG?  More people more difficult to control?
Article 10 Elimination of custom duties on export (Cotonou Treaty)	Require a HAPPC food safety standard?
	License agents/aggregators?

# Export license only food safety certified groups

- Cocoa and coffee require warehousing
- Inspection
- Clean water
- Pest program
- Uniforms
- Manuals, control measures, batch, lots and recall procedures
- Meet standards
- Indonesia did this in 2005 and improved market price

# License requirements in Madagascar

- General information of the export site
- Zone of reception (so if you buy in the field or at an office)
- Zone of preparation
- Zone of storage

Accessible

Security

Hygiene

Control  
procedures

Power and  
communication

INFORMATIONS GEN	
Contrôle	Points de contrôle
Accessibilité	Accessible par une voie bitumée
	Accessible par une piste carrossable
Sécurité	Mur d'enceinte infranchissable
	Système de gardiennage privé
	Contrôle des entrées et des sorties
	Magasin disposant d'une aération suffisante
Hygiène	Boîte à pharmacie complète
	Vestiaire pour les employés
	Douche et toilettes pour les employés
Procédures de contrôles internes	Nombre de douche et toilettes adaptés au nombre d'employés
	Manuels de procédures opérationnelles (manuel HACCP, fiche de nettoyage et désinfection, fiche de formation personnel, fiche de suivi stock, fiche de réclamation client, fiche de suivi et contrôle fournisseur)
Electrification - eau - communication	Traçabilité
	Approvisionnement électrique en continue garantie
	Raccordement au réseau électrique JIRAMA
	Présence de groupe électrogène (ou de panneau solaire) fonctionnel
	Liaison internet fonctionnel
Raccordement au réseau Telma	
Présence d'une adduction d'eau individuelle	



# NAQIA

- Training guide for NAQIA inspectors (e.g. difference between mould and vanillin crystals, phenol?)
- Ensure declaration is correct- not claiming low price to reduce import tax?
- Set standard for destructive testing overseas?
- Size of sample?
- Does the current phytocertificate actually cover mould?

This is to certify that the plants, plant products or other regulated articles described herein have been inspected and/ or tested according to appropriate official procedures and are considered to be free from the quarantine pests and diseases specified by the importing contracting party and to conform with the current phytosanitary requirements of the importing contracting party, including those for regulated non-quarantine pests.

They are deemed to be practically free from other injurious pests.\*



# NARI

- Updating of training books? Tok Pisen? illiterate



K 4.40  
incl. VAT

National Agricultural Research Institute

## Vanilla Vine Training



NARI TOKTOK  
KER0009E

March 2003



Recommended  
Price K 2.20  
(incl. VAT)

National Agricultural Research Institute

## Mulching Vanilla Plants



NARI TOKTOK  
KER014E



Recommended  
Price K 4.40  
(incl. VAT)

National Agricultural Research Institute

## Vanilla Curing



NARI TOKTOK  
KER018E

November 2003



National Agricultural Research Institute

## Sapot Diwai Bilong Vanilla



NARI TOKTOK  
BUB004(P)

January 2002

# NARI

## Work on Anthracnose?

- Fungal *Emericella nidulans* application to outcompete?

Recommended  
Price K 3.30  
(incl. VAT)



National Agricultural Research Institute

### Vanilla Diseases: Shoot Blight (Anthracnose)



NARI TOKTOK  
KER020E

# PESTICIDES

- No laboratory in PNG with a GC MS
- Updated pesticide list to match Minimum Residue Levels for EU and USA?
- “tolerances no longer exist for residues of chlorpyrifos in or on food”. EPA (USA)

Linked with neurological damage in humans.

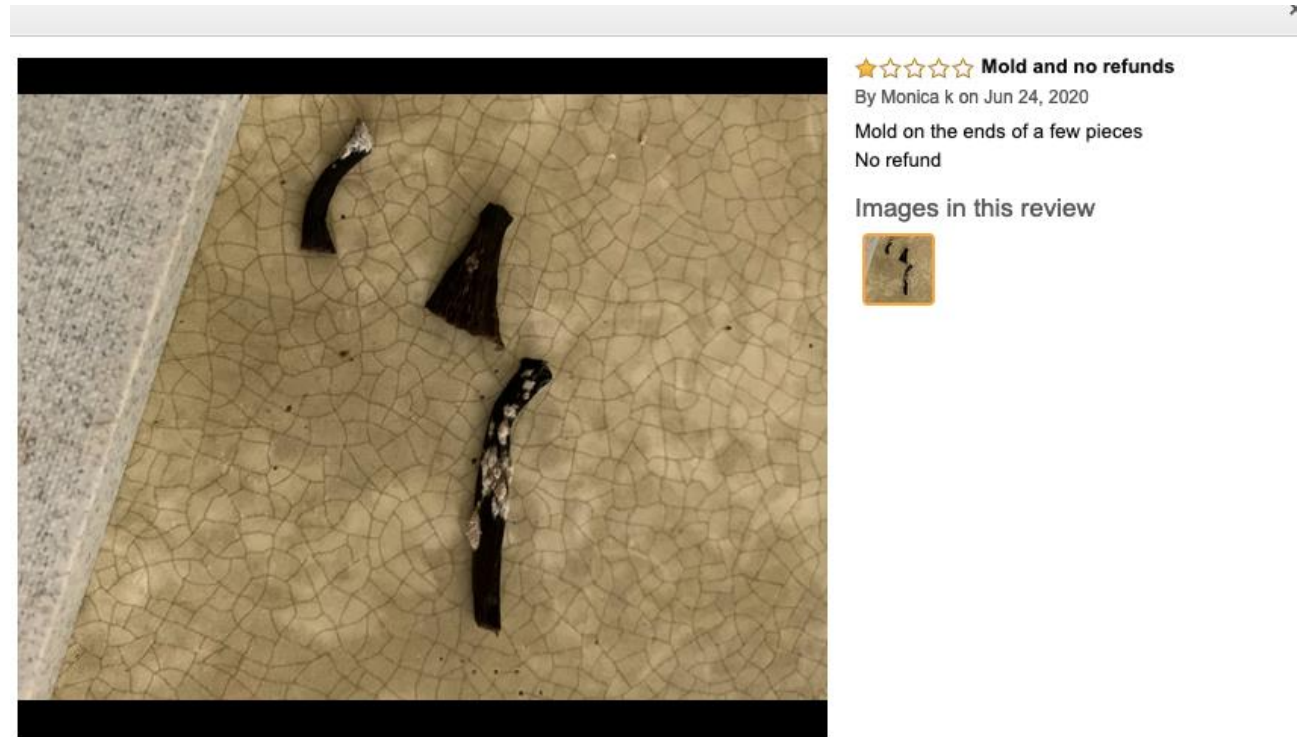
<https://www.fao.org/faolex/results/details/en/c/LEX-FAOC198764/>

On 23 July 2020, the EU Commission published a [corrigendum to Regulation \(EU\) 2020/1085 amending Annexes II and V of Regulation \(EC\) No. 396/2005](#). New is, in the course of the non-renewed authorisation, that the MRLs for Chlorpyrifos and Chlorpyrifos-methyl were lowered to 0.01 mg/kg for all food and feed products and have been moved from Appendix II to Appendix V of Regulation 396/2005



# Ideas for multiple agency response?

- Exporting above 38% humidity
- Green beans (unless for research)
- Moldy beans being exported
- Export at Indonesian boarder without customs clearance
- Airport regional bag checks?- people unaware of license requirements?



Customer on amazon.com with PNG vanilla



# Department of Foreign Affairs/ Department of Trade and Industry

## MARKETING PNG/ TRADE CONFERENCES

- Need to promote PNG
- Food conferences (stand is 45,000EU\$)
- Authorizing 2kg for tourists
- Invite manufacturers to conference in Brussels?