







# Sustainable Agricultural Practices & Managing the Value Chain to Bring Remote PNG Farmers Sound Benefits and Financial Inclusion

Dr. Nancy Irwin





### OUR MAIN FOCUS





**BIODIVERSITY** 

**SUSTAINABILITY** 

From producer to customer, respecting the environment, value every link of the chain.

Supply products in full transparency, with traceability from farmers to the end customers.

Limit the human impacts on the environment and acts to preserve its biodiversity.

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# 5 pillars of Kamapim











No logging no mining No chemical inputs All people banked including women

No child labour

Improve sanitation



## m Focused on Vani



- Vanilla enables uplift in income quickiy.
- Finding farmer clans
- Provide extension training & services
- Look for communities with conservation and similar values
- Grow farmer base
- Decide on which products and downstream appropriate ones



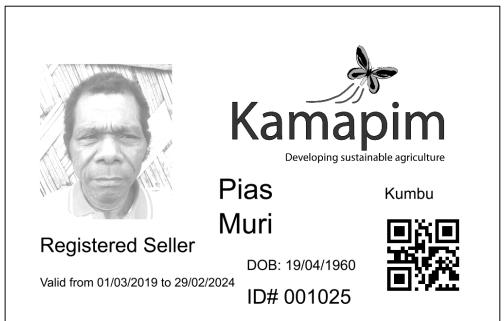
# Business needs Banking

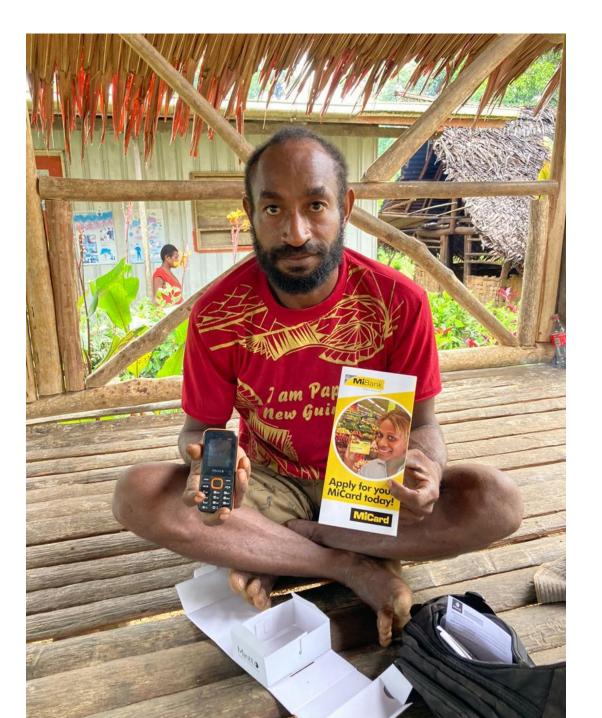
- Banked farmers = security, accountability, traceability
- Farmers need NID (National Identity Documentation), working with the department to support applications and distribution (3000 cards)
- Farmers need:
  - financial literacy training
  - cash-out systems in the bush
  - small loans to invest in equipment (50-500PGK)



# Agri-tech approach

- •Barcode all our farmers, so far 21,500
- Registration and they agree to the pillars.





# Facilitate mobile banking

New phone

New SIM

New bank account

#### Immediate benefits

Cashless transactions
Full traceability
from individual
purchasing

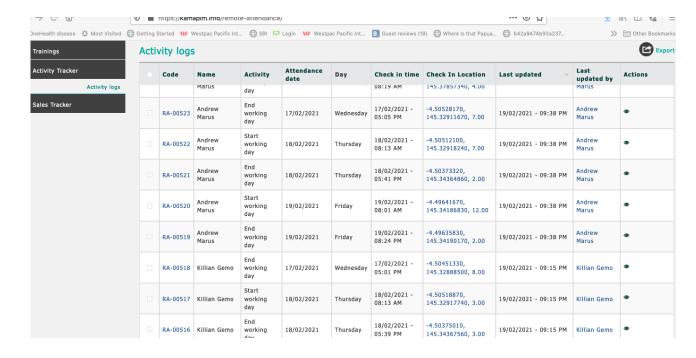
12,000+ farmers into

# fieldouzz

• Log into website portal

# data colloctod Developing sustainable agriculture Kamapim PNG Vanilla Username Password Forgot password? | New Registration Powered by: field-buzz

#### Website look at



# Commercial applications available







# Measure Training

- When training occurred
- Where training occurred
- Trained by who?
- Farmers/village/group response to training

- Spend money on responsive people
- Spend time with people who need training





## Kamapim trains vanilla farmers



Nodes spectors my AVAILLA former along the border betwee Eastern Highlands and Madang provinces underwent a week-long training workshop in Led by the Eastern Highlands and Madang the state of the state of the cassed part of Upper Beau Local Led by the Eastern Highlands and Carolas and Daulo districts, especially along the Hennarck Rampa between Madang and Carolas and Daulo districts, especially along the Hennarck Rampa between Madang also to attend the training at Kosaval Primary School in Middle-Barm Interir lost week. In the Madang side to attend the training at Kosaval Primary School in Middle-Barm Interir lost week. When the Madang side to attend the training at Kosaval Primary School in Middle-Barm Interir lost week. When the Madang side to attend the training at Kosaval Primary School in Middle-Barm Interir lost week. When the Madang side to attend the training at Kosaval Primary School in Middle-Barm Interir lost week. When the Madang side to attend the training at Kosaval Primary School in Middle-Barm Interir lost week. When the Madang side to attend the training at Kosaval Primary School in Middle-Barm Interir lost week. When the Midd



FAR MERS during a vanilla training session at Kesoval primary school in Middle Ramu district, Madang province.

the help of Macang Gause (Namapum Linitied and Milland, from May 3-6, and the more consistent of the more consiste







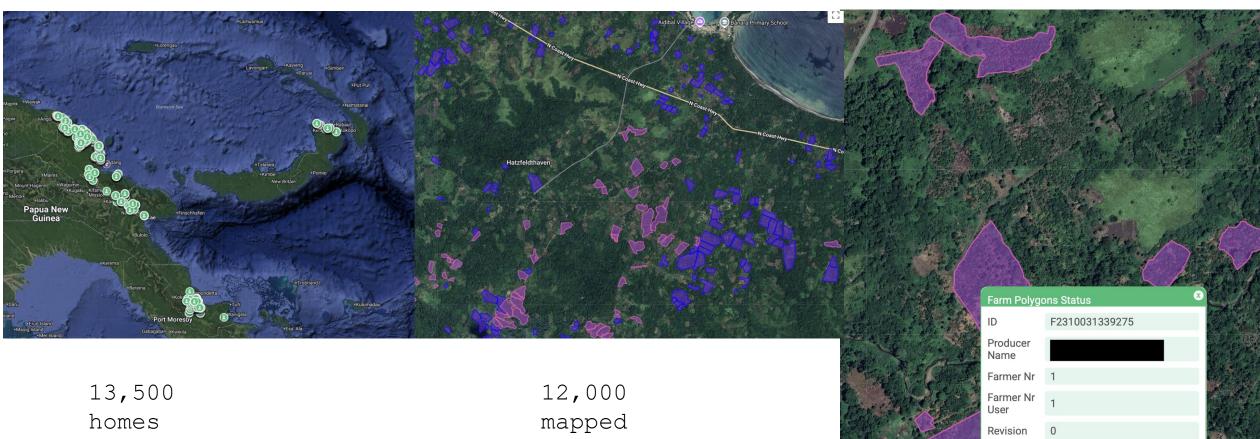
# Geo-reference farm maps

Ha Survey 1.00 Ha Polygon 1.77

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Date Of

Collection



farms



### Farmers break or create markets

Cooperative A farmers produce quality so they can afford a helicopter to

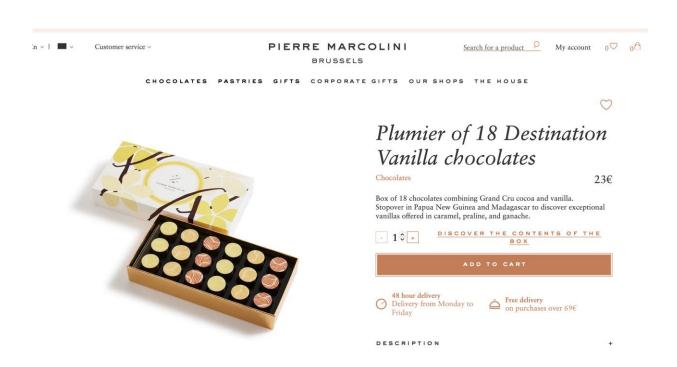
Cooperative B trained by Streit. Been to Madagascar, been to workshops, but sending vanilla not fit for consumption.

• Legal process for funds returned.





# High-quality vanilla gets better pricing than Indonesian



# (USD/kg) - ITC Trademap \$350 \$300 \$250 \$150 \$100 \$50

PNG Vanilla Exports Unit Value

#### Key Insight:

Premium, traceable vanilla sold to formal markets earns up to 3x more than commodity beans sold across the border (MDF vanilla report)

#### Key Insight:

67% of PNG vanilla leaks into Indonesian commodity trade. Formal exports capture higher value.

— Global Average Price (ex Indonesia)



# Microfinance loans delivered in the bush No need for ID

- No need for to travel to town
- No long queues at the bank
- Reduce the cost of the loan due to a decrease in management time required.
- 355 loans, 50% paid back





# M&E

Before	After
1 child in	All kids in
school	school
No phones	All with phones
No bank	80% with bank
accounts	accounts
No solar	All houses with
	solar
No savings	Some savings
No vanilla fit	95% Grade A
f	net rest to the second
M 3 52	4
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## THE PROBLEM WITH COCOA

- System creates sustained poverty for Wet bean farmers
- Too many fermentaries = no consistency
- Poor fermentation
- "Smoky notes" in cocoa
- Lack of traceability of farmers
- 75% of exports go to Asia
- 8% goes to EU with higher pricing
- = LOW QUALITY
- = LOW PRICE







## M&Ms



PNG cocoa value- sour end finish

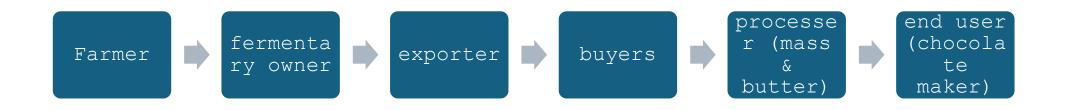
Smoke taint

Created chemically the flavour

2-4 Billion \$ per year market



## KAMAPIM COCOA



Current supply chain



Kamapim supply chain



## KAMAPIM COCOA

- Wet bean license
- Public/Private/ partnership
- Pay extra money to farmers, cooperatives and community bonus
- Contracts with clients for 7000 metric tonnes
  - (17.5% of PNG production
- Waiting for land
- Waiting for GST
- Waiting for tax return









# Learning from 7 years Kamapim

- Extension works!
- Education needs for SME and businesses are high
- Banking & financial services change the community's ability to plan
- Including farmers as business partners is part of the solution
- Farmers can learn to use new technology quickly
- Cooperative systems can work
- Need better cross-government support to get into down-streaming



# Agriculture needs in PNG

- What issues are pressing for change?
- What are the low-hanging fruit?
- How can we shape projects to make change efficiently?

- Domestic food security
- International export opportunities



# Malnutrition and stunted growth

- 50% of children <5yrs are stunted
- 14% of children have wasting
- 70% of the population has malnutrition
- 3000 <10 yrs have died in 3 yrs (Madang)
- 34% of women have anemia
- Better planting plans
- Improved crops- seed imports
- Food security and cash crops developed together
- Improve chronic disease





# Seeds are too expensive

Country	Import Quantity (tons)	Main Source Countries	Share of Top Sources	Avg. Price (\$/kg)	Relative Price vs. PNG
Papua New Guinea (PNG)	111	3 (Japan dominant)	96% from top 3	93	100% (baseline)
Fiji	n/a (not specified)	7	97% from top 7	<b>~14</b> (≈15% of PNG)	15% of PNG
French Polynesia	134	Diversified	n/a	56	60% of PNG
Samoa	35	Diversified	n/a	20	20% of PNG



# Domestic markets not saturated









# Australian organic export market

## 1.6 billion kina

#### Strategy

Target nearby premium markets in Asia / Pacific first

Focus on niche organic exports (vanilla, spices, aromatics)

Leverage Australia's organic trade links

Domestic processing and value-add organic products

Promote organic certification as premium brand

#### Rationale / Strengths

Lower transport cost, demand for "Pacific / exotic / island-grown organic"

Lighter, higher value per kg, Must maintain quality, easier to certify and transport

Australia already sells organic to China, Singapore, Build partnerships with U.S. - PNG could piggyback on Australian organic exporters supply chains or joint export / distributors branding

Export organic value-added goods (extracts, oils, powders) rather than raw beans

Global trends show consumer willingness to pay premium for certified organics

#### Key Risks / Requirements

Need organic certification accepted by target markets (equivalency), reliable supply

traceability, and consistent volumes

Processing capacity, maintaining organic integrity, certification at every step

Certification infrastructure, trust, prevention of fraud or leakage



# Future of Agriculture in PNG

Running costs for a business in PNG

- 17 times more expensive than Indonesia
- 24 times more expensive than East Africa

wages, freight, logistics, power, housing, warehousing, security and training required.

There is no more value for similar commodities.

The only differentiation can be in quality, flavour, certification, or perceived value.

Companies must be large due to lower profit margins in PNG.

Move to "novel" and endemic.



# To get higher margins, needs high quality

- HACCP & ISO 22000
   food safety standards for farmers
   without water or sanitation
- Downstream processing (power, water, land)
- Traceability
- EUDR















# Traceability & Certification

- PNG auditors required to make certification cheaper
- Support farmers to do record keeping
- National programs through boards for commodities
- Organically certified exports have the highest potential for margin.



# Government gaps to support trade

- Easy export from anywhere (NTO office)
- Power & Water & Land
- IPA promotes tax benefits which are not given
- Logistics
- Single data collection from all boards

Lae to France
12,000PGK
Popondetta to Lae, 9,000PGK

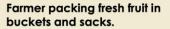




## Food waste

- Package
- Transport
- Warehousing
- No cold chain



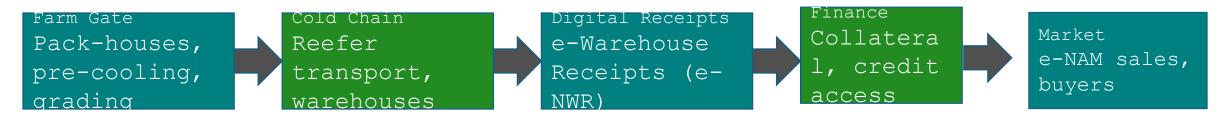




Farmer packing fresh fruit in crates sourced from Nature's Way Cooperative.



# India's Integrated Cold Chain System Smallholder Flow



- pack-houses, pre-cooling, grading/sorting, reefer transport, cold/cold-ambient warehouses, ripening chambers, and processing/valueaddition, with the design goal of no break in the chain from farm gate to consumer
- Farmers get a quality assessment quaranteed payment





# Cooperatives/SME

- GST monthly
- Annual returns
- Cost-prohibitive
- Lack of accounting
- Lack of understanding of cooperation/SME structure
- Compliance issues
- Technology to support
- Accounting generally too expensive







# Data digitalization

- Mobile phone applications, easy to use, provide access to volume, traceability, and pricing
- 850 PGK, 3 days of training, 15 PGK data per wk
- 3,500 mapped farms in 4 months (20,000PGK), 6PGK per farm.
- Dashboard 500,000PGK per year.
- Opportunity to roll out a single system (no farmer has one commodity)
- Opportunity to automate reporting and dashboards
- Historical data, record-keeping, and reducing waste by repetition of work





# Kamapim Monitoring & Evaluation

- Data is required to know what is working and what is not
- Farmer data
- Extension data
- IRC data
- Export data



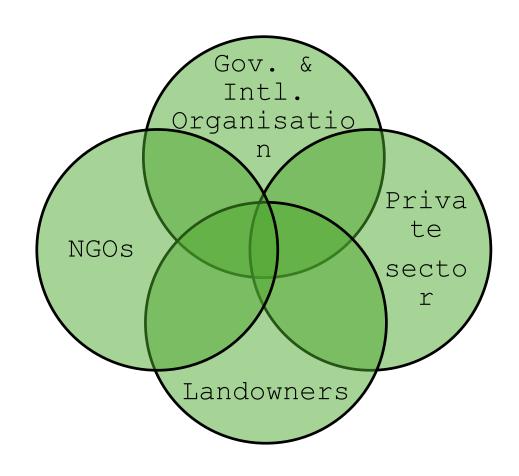
Real-time evidencebased policy

## Gap Analysis - 7 Strategic Pillars

Logistics	Poor roads, no cold chain	Efficient rural-urban logistics
Cooperatives	Farmers sell individually	Strong farmer groups with contracts
Financial Inclusion	80% rural unbanked	Farmers banked & credit-enabled
Traceability	67% vanilla leaks to Indonesia	National traceability & certification- access better markets
Data	No farmer records / transparency/where to put resources	Digital farmer database & price info- access better markets
M&E	Weak evidence, no gender/nutrition data	Real-time evidence-based policy
Food waste	Poor storage, loss income	Cold storage improved supply ,more income for what is being produced



## THE POWER OF COLLABORATION



- Sharing values
- Common objectives
- Complementary skills and tasks



- Digitalisation
  - Data: What is produced where?
  - Joined up traceability for Export commodities: coffee, cocoa, spices
  - Certification drive for high-quality markets
- Cold chain storage system- from the farmer up
- Coffee borer fungal solution
- High-quality, cheaper seeds for farmers (malnutrition)