



# Growing Resilience: Strengthening the agro-processing sector in the Pacific Islands

A series of roundtables



25 June 2024

## Roundtable N°3



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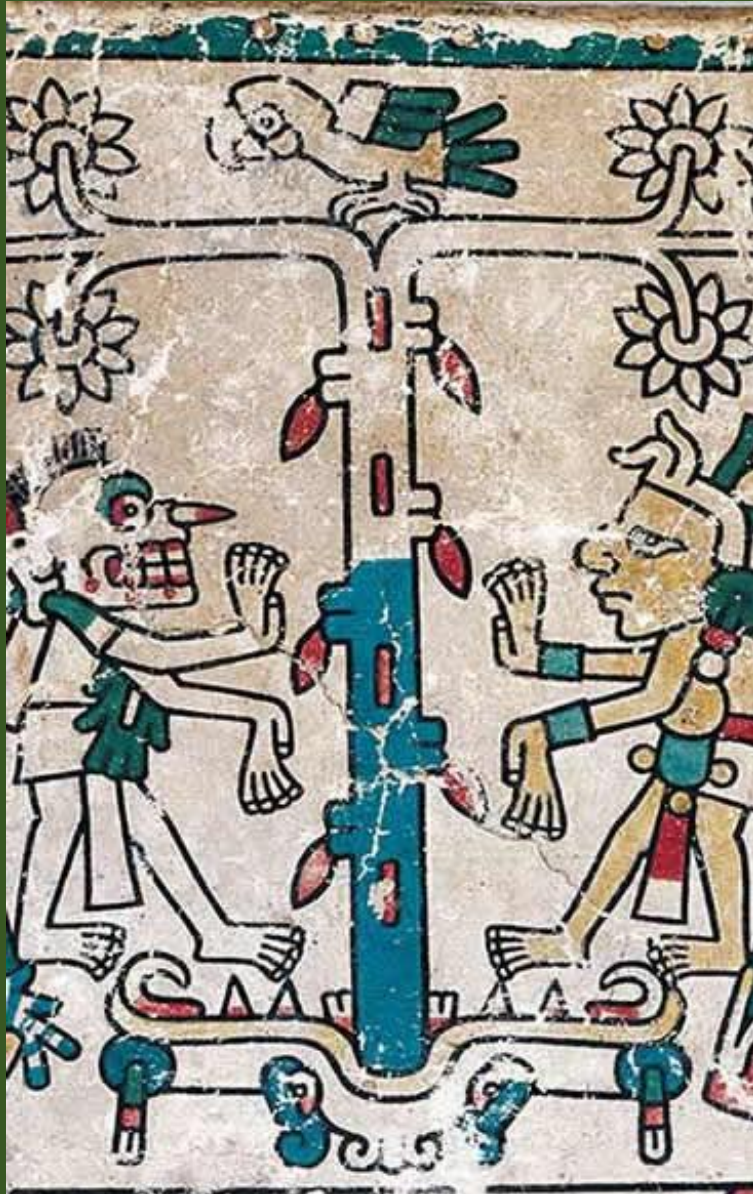
**KokoMana – food processing in a short market chain**  
**A tree-to-bar chocolate maker**  
**seeking positive social and environmental outcomes in Fiji**



KokoMana



# A short history of chocolate: cocoa came from the Americas



A rainforest under-storey tree from the Neotropics

Traces of cacao - La Florida, Ecuador – c. 5,500 years ago

Olmeecs, Central America – c. 3,500 years ago

Mayan hieroglyphs – c. 1,000 years ago

By the 16<sup>th</sup> Century, cacao central to Aztec culture

- Used as currency
- Not grown in Mexican highlands – demanded as ‘tribute’
- Considered a gift from the god Quetzalcoatl
- Widely used in various ceremonies
- Spanish planted cacao in Caribbean and Philippines as a ‘bank’

# A short history of chocolate – from physicke to industrial produce



16<sup>th</sup> - 18<sup>th</sup> Centuries – cocoa spread slowly from Spain to France and Italy – as a curiosity and health drink

19<sup>th</sup> Century – Quaker industrialists (John Cadbury, Joseph Fry and Joseph Rowntree) made cocoa available as an affordable, healthy beverage for 'the masses' in UK

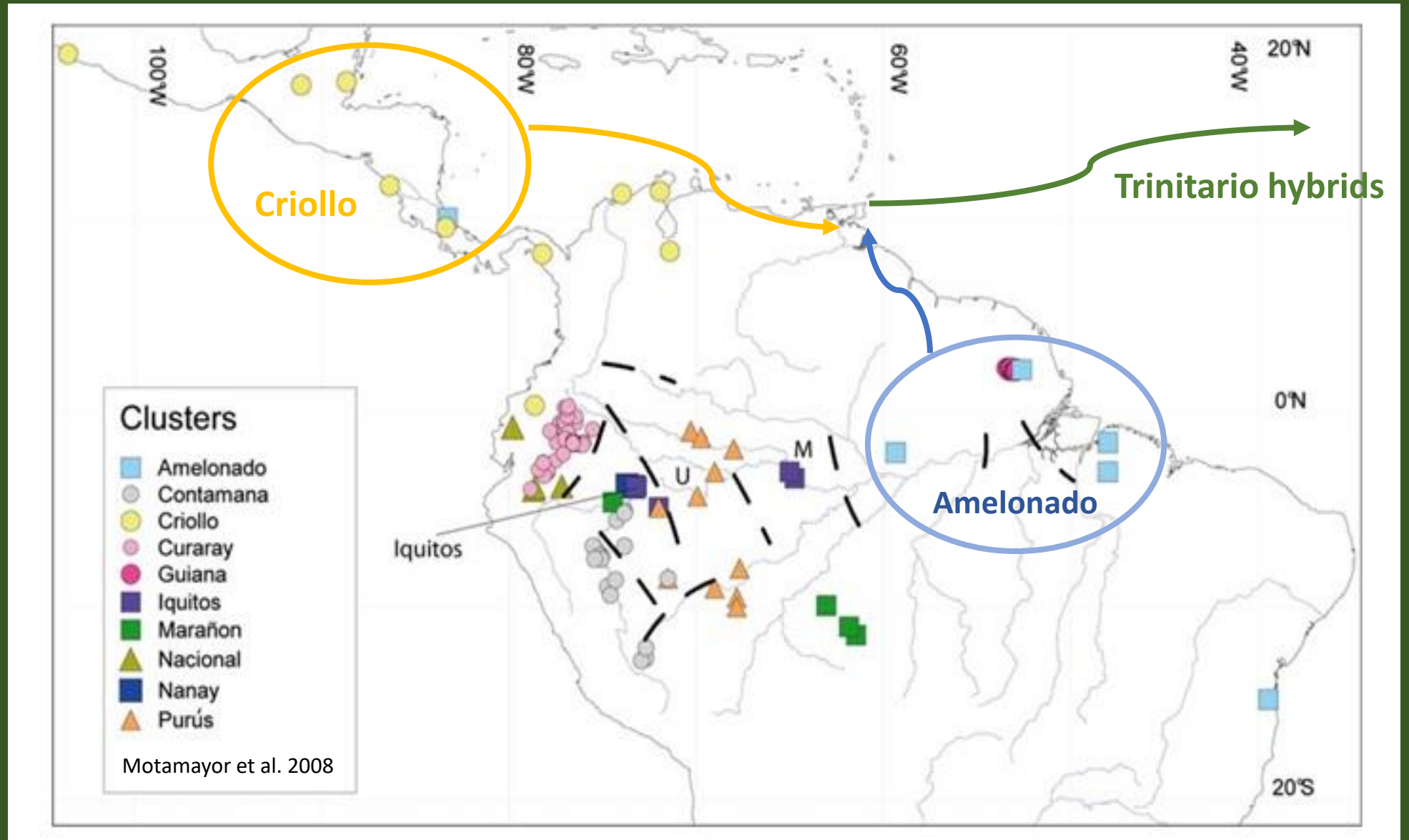
Cocoa became a commercial crop across the growing European colonies around the tropics

Introduced to Fiji, Samoa, Solomon Islands, New Hebrides, Bismarck Archipelago... from 1870 onwards

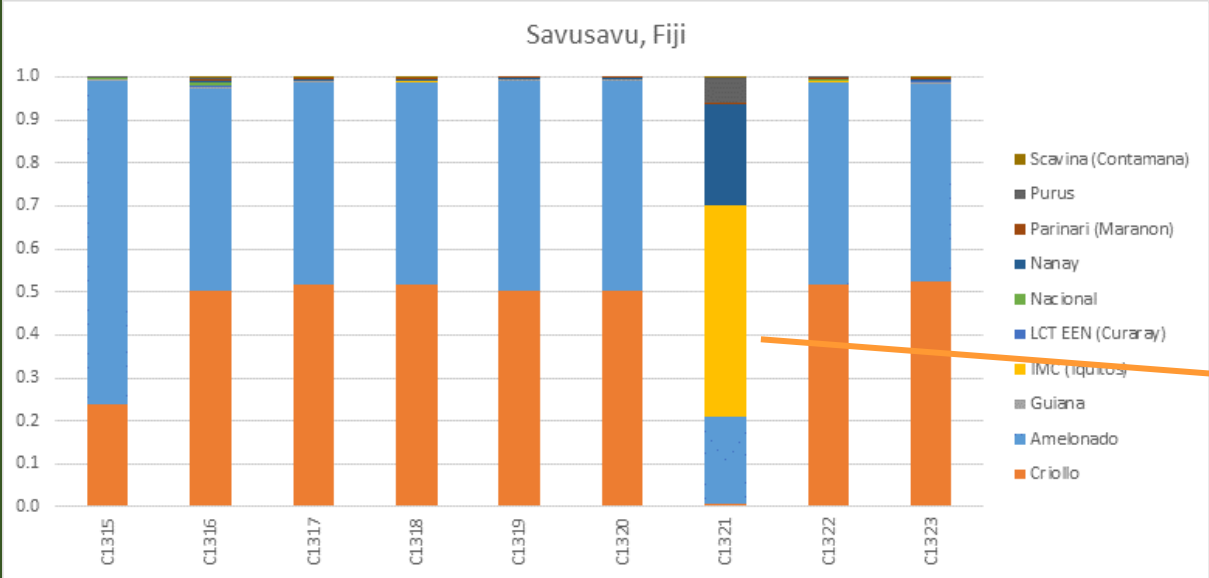
What was introduced?



# Genetic diversity of cocoa



Forastero-type cocoa now accounts for 90% of world trade...  
We are interested in the remaining 10%!



DNA ‘fingerprints’ of Trinitario-type cocoa



Mixed ‘heirloom’ cultivars



The Samoa connection: Cultivar LAFI-7 (left) and Koko Samoa (below)



Cocoa (USD/T) 2546.00 -28 (-1.09%)



2546

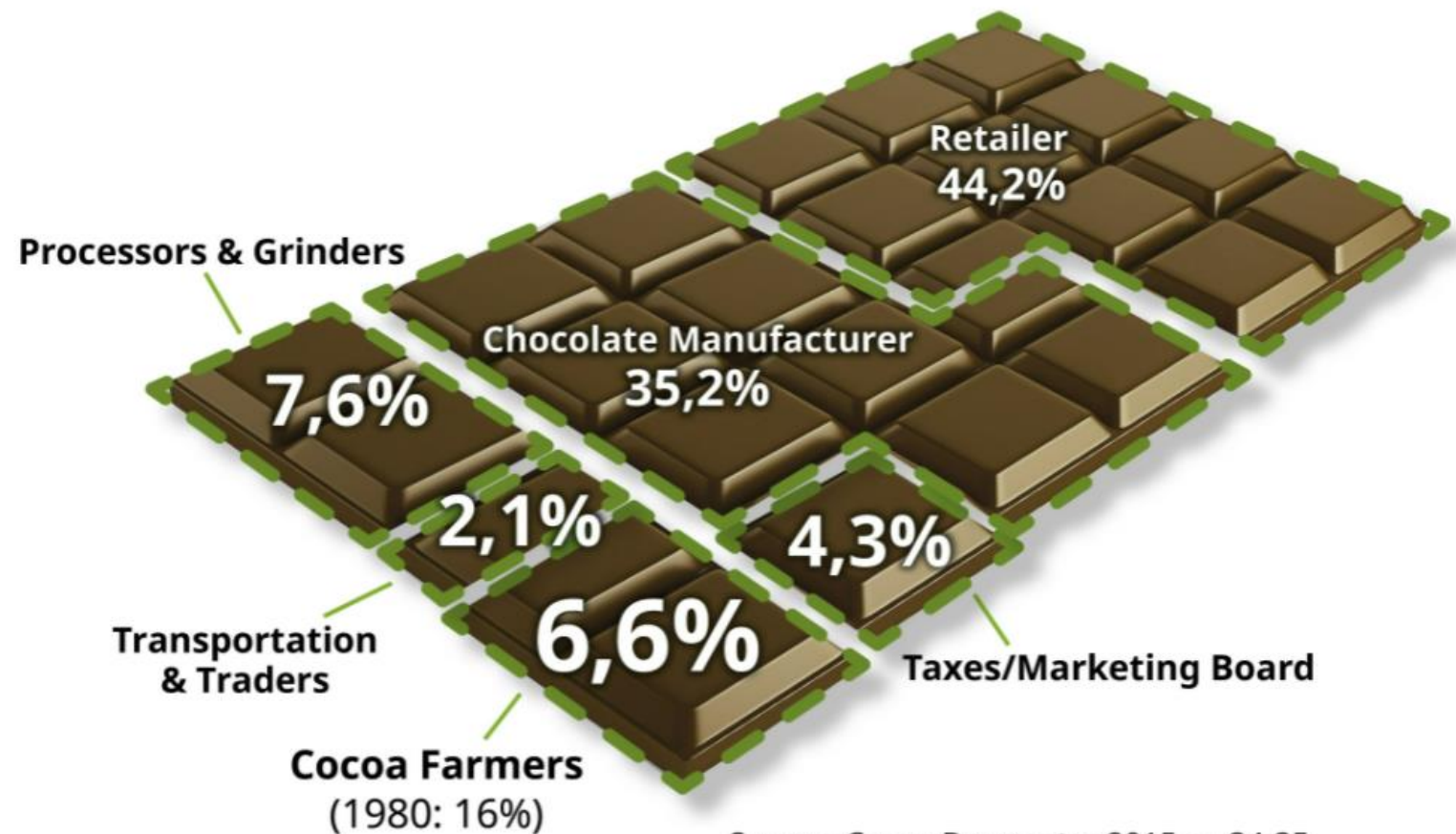
1Y 5Y 10Y 25Y 50Y All

% num dif





**Fig. 3 Share in the value chain of chocolate production (100g, price of sale 0,79 €)**



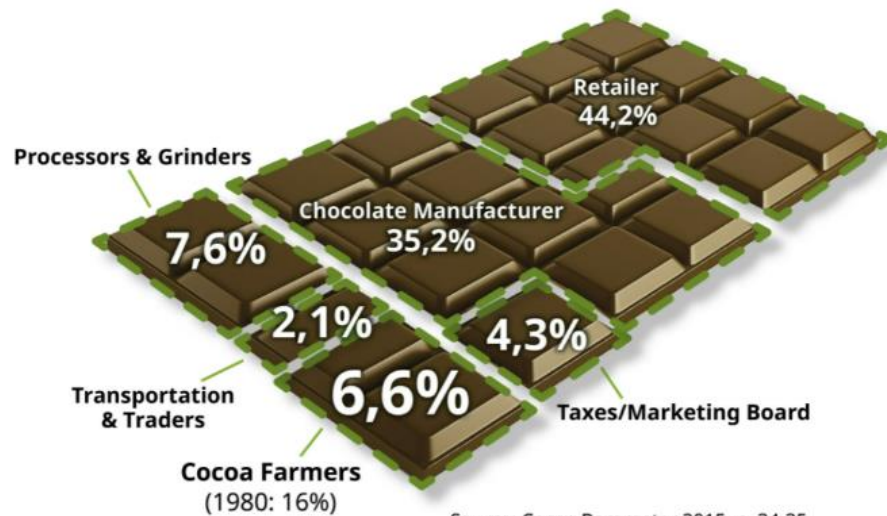
Source: Cocoa Barometer 2015, p. 34-35



# Is it possible for a smallholder to make a living from cocoa?



Fig. 3 Share in the value chain of chocolate production (100g, price of sale 0,79 €)



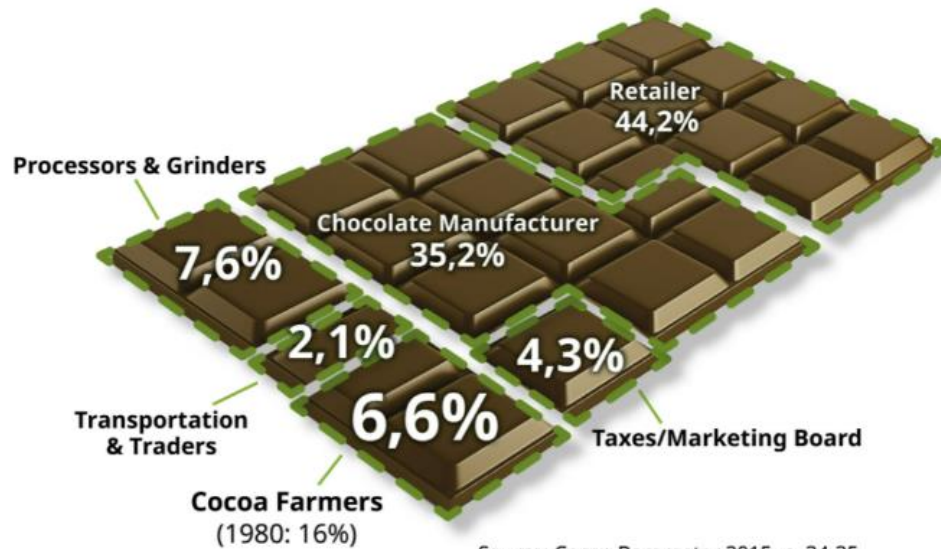
Source: Cocoa Barometer 2015, p. 34-35

1. High quality, fine flavour cocoa
2. Short market chain
3. Tell an appealing story!

# Is it possible for a smallholder to make a *sustainable* living from cocoa?



Fig. 3 Share in the value chain of chocolate production (100g, price of sale 0,79 €)



Source: Cocoa Barometer 2015, p. 34-35

1. High quality, fine flavour cocoa
2. Short market chain
3. Tell an appealing story!

1. Minimise environmental damage
2. 'Fair deal' for suppliers, employees & customers
3. Tell a true story...  
and get the word out!



# MEET OUR TEAM!





KokoMana

OUR BUSINESS PLAN



# Production – in an agroforestry setting



**2012 started with an abandoned cassava farm – with trees**  
**2014 agroforestry with fast-growing plants to ‘capture’ the site**

**2019 1 ha with 400 cocoa trees**  
**and c. 90 other ‘useful’ species**  
**of fruits, nuts, spices, medicinal plants**



1. Tree cover for resilience, rather than maximum yield
2. Not certified ‘organic’ – some inorganic fertiliser
3. Emphasis on soil health – soil organic matter, ground covers, compost and mulch



# Cocoa – evaluating diversity for resilience and fine flavour



16 clones – for disease resistance



Wainigata Research Station



grafting preferred clones



Evaluating fertilizer levels



Rating disease and productivity



Citizen science in action!



# Cocoa into chocolate – the magical transformation



Harvest...

De-podding...

**FERMENTATION...**

- yeasts
- bacteria
- temperature
- colour change



# Cocoa into chocolate – the magical transformation

Sun-drying –  
stop fermentation  
no smoke taint (avoid copra driers)  
no mould contamination  
avoid/reduce off-tastes





# Chocolate-making – completing the transformation



1. Mature – at least 3 months
2. Roast
3. Crack
4. Winnow
5. Conch/refine
6. Temper
7. Mould





# Chocolate-making – completing the transformation



1. Mature – at least 3 months
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6. Temper
7. Mould
8. Packaging





# Chocolate products

1. Iconic local ingredients – coconut, ginger
2. Local flavourings: seasalt, chilli, chai masala...
3. In future... local nuts: tavola, vutu... ?





# Agri-eco tourism: our signature tree-to-bar tours



**Sustainable farming**

**Farm – sustainability & ecological principles**  
**Factory – pure, quality, local ingredients**  
**Chocolate tasting – rich flavour, no additives**  
**Sales – of chocolate and other merchandise**



**Processing for fine flavour**

**Touch it, feel it, taste it...**  
**(and post it online!)**





# Community outreach – multi-species agroforestry



**Multiple sources of livelihoods:**  
Agritourism and processing offer more  
Inclusive options  
Carbon offsets may offer an additional income





# Acknowledgements

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**Koko Mana**





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# Thank you



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