

# Post-Harvest Experience – Gains & Losses

Presented by

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Data source in Fiji provided by : University Sunshine Coast Australia [prof. Steven Underhill]

# Value chain – Farm to Hotel

1. Harvesting
2. Sorting and Grading
3. Washing
4. Packaging
5. On-farm Ripening
6. Storage
7. Transportation



# The End Goal:

Farmers supply a growing quantity of production of high value to more Hotels.

Growers and buyers build a relationship and adapt to seasonal and market demands.

Deliver on agreements

Get paid as soon as possible



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Growers can reduce losses by good farming and handling practise however to improve quality and grow there will be some costs and time.

Make sure your systems are efficient and have less waste - then you are still competitive with prices.

Remember to reduce losses and improve quality you must spend time and money but mostly care and awareness to avoid mistakes.

# Case Study -Effect of bruising and damage during Transport and delivery

Assessment of the stresses product was exposed to during transport to the market.

## Why is this important?

Is there a need to modify packaging to reduce in-transit injury

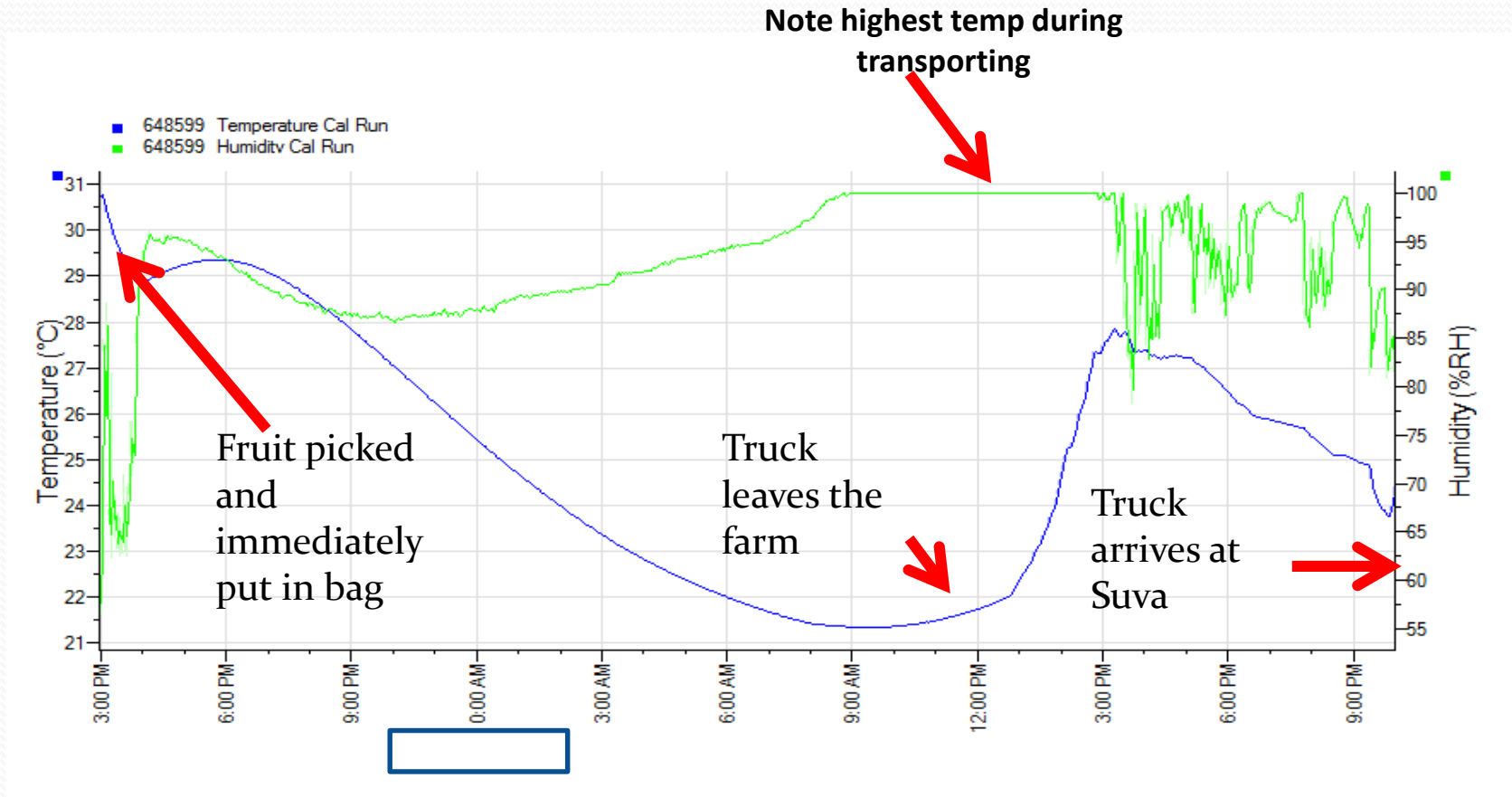
Is the loading/unloading , and the actual load configuration needing to be addressed



# The Path to Market

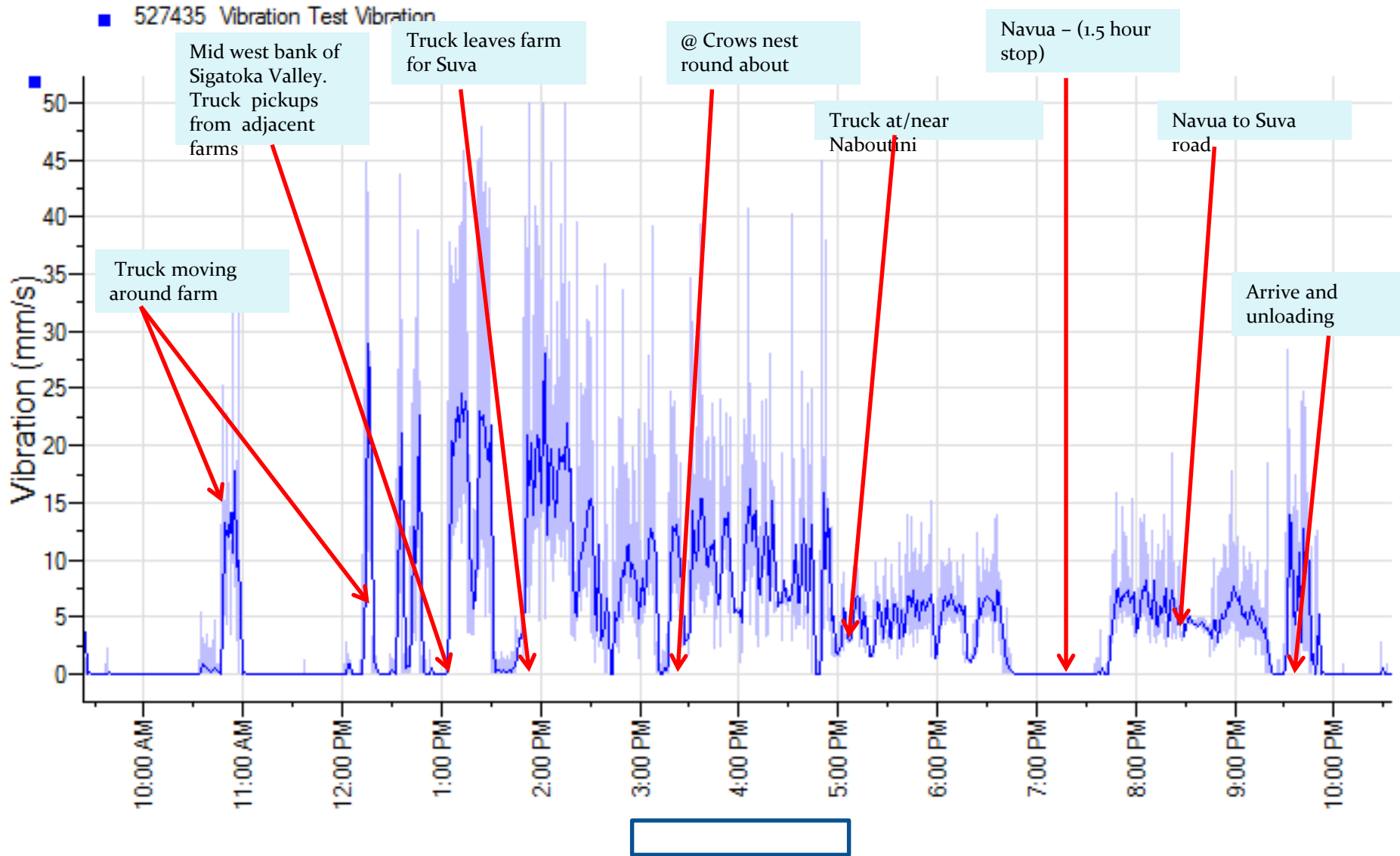


# Monitoring Temperature during Transportation and storage.



Conditions inside the bag of eggplant, from picking to arrival.

# Test Vibration





# Day 1 - On the truck ready to leave



# Day 1 – just picked



# Day 3 – Saturday



# Day 5 - Monday



# Thrown away due to decay – New opportunities

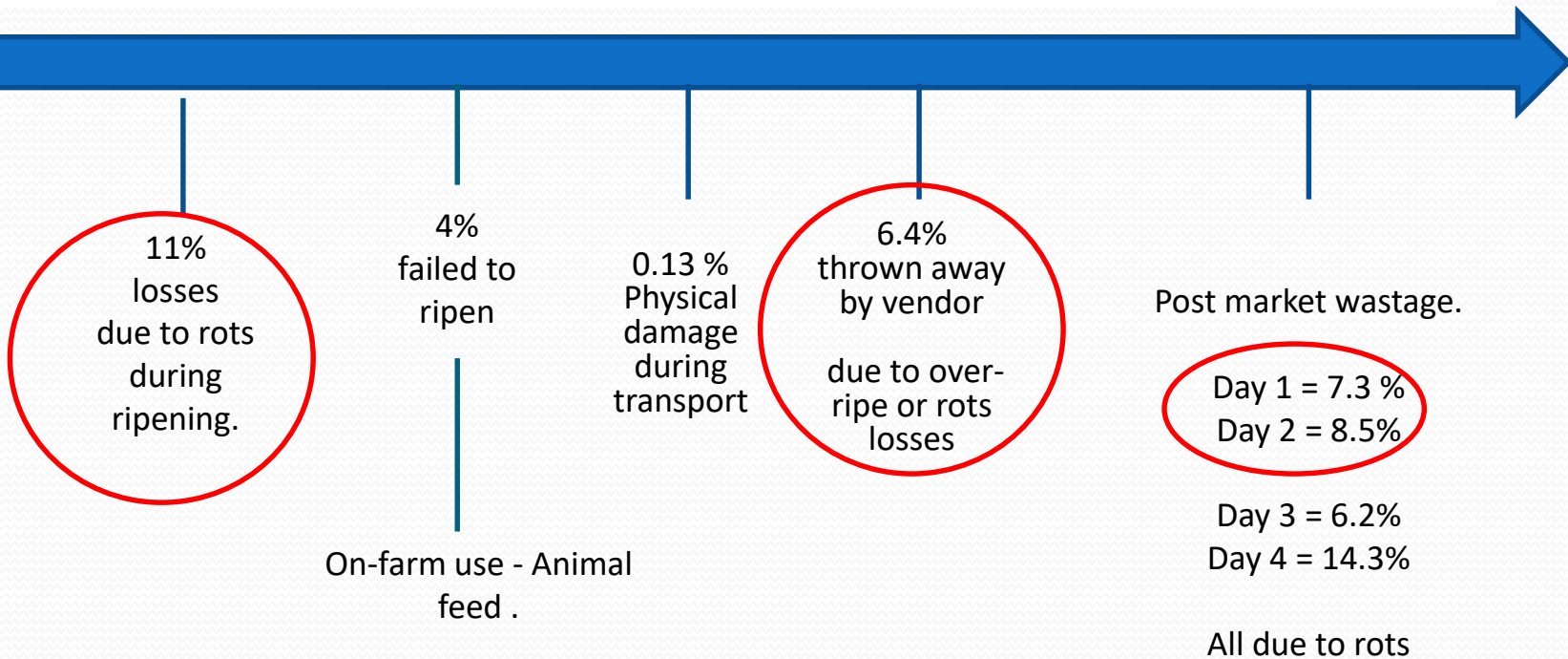
What can we do to turn a loss into a profit.

Juicing, pesto, preserves, chutneys.....domestic supply

Day 6 – Disposal



# The cost of loss – example 58% loss after 4 days



## Short and sharp supply chains

- Eight hours road transport (farm to market)
- All product was sold by the vendor within 30 hours (1 day's trading)
- Commercial loss = 21.4% (farm to vendor) and projected further 15.7% loss post-vendor (total = 37.1%)
- **Total 58% losses after 4 days of product leaving the farm**

# Effect of too high and too low a temperature

Effect of temperature on Tomato fruit ripening

Good temperature range: 15-25°C





Best temperature: 20°C



## Shelf-life/Storage/Ripening Conditions

- ✓ Temperature and ripening of different tomato types; update conventional tomato chart
- ✓ Impact of lower than recommended storage temperature; slight chilling; differences among varieties
- ✓ Ripening Temperature and ethylene treatment
- ✓ Temperature and RH -Impact on firmness and gloss

Table 1. Effect of temperature on ripening rates of **conventional tomatoes**.

	Days to full red color at indicated temperature					
	12.5C	15C	17.5C	20C	22.5C	25C
 Mature-green	18	15	12	10	8	7
 Breaker	16	13	10	8	6	5
 Turning	13	10	8	6	4	3
 Pink	10	8	6	4	3	2

# Capturing the Opportunity

Addressing market linkage issues and challenges



Creation of a **platform** for dialogue and inclusive marketing



**Available** goods at desired quantity and quality, and price



**Support** for farmers to bear opportunity loss re: payments



Available support services and incentives to **sustain** gains

Ref: Elenio Yap SPC



# Who is the Customer

Hotels have kitchens which follow very strict regulations for food safety.

The effect of a Hotel customer getting a food borne illness can have a major effect to the reputation and profitability of the business.

In today's world of social media just a badly prepared or presented dish can generate a negative comment for the world to see.

Be aware and respect the challenges of your customers – work together – Restaurants want success to.

# Food Safety Risk Factors

- After picking is the crop washed and Cleaned properly?

What the Chef is looking for:

Residual dirt, use of dirty water for washing

Evidence of animals in the field

Use of uncomposted manures

- How does the produce arrive?

What the Chef is looking for:

The produce packed properly – minimal bruising

The truck clean, staff clean

Heat and humidity effects the shelf life

- When was it picked?

Freshness can be felt and smelt

**Anticipate highest risk in lettuce and root crops.**

# Next steps – Supply the Sector

- Who have you spoken to – find the decision makers – do you have what they want for the price they will pay?
- Have you calculated the supply quantities and seasonality. What does your target market expect in terms of volumes and range?
- What else can you grow look for import replacements – work with the Chefs with new local dishes?
- Can you demonstrate your quality knowledge – managing risks, record keeping and controls - It's not what you say it's what you show.
- Can you supply them consistently – do you need to form a co-operative if the quantity is more than your land capacity?
- Can you minimise losses and use offgrade to offset costs? – Can you value add or make other appealing products?
- **Will the Tourism Sector pay extra \$ for Quality?**
- **There is a growing demand for traditional Pacific food – it represents your culture and heritage – convince the cooks and Chefs to work with you and give the adventure tourists what they want.**

# Value Chain Support Partners

There are many employees of govt agencies, NGO's and service providers who want to see incomes of farmers grow.

They will support you and encourage you to chase new business. They can guide you and advise you – don't be afraid to ask a professional.

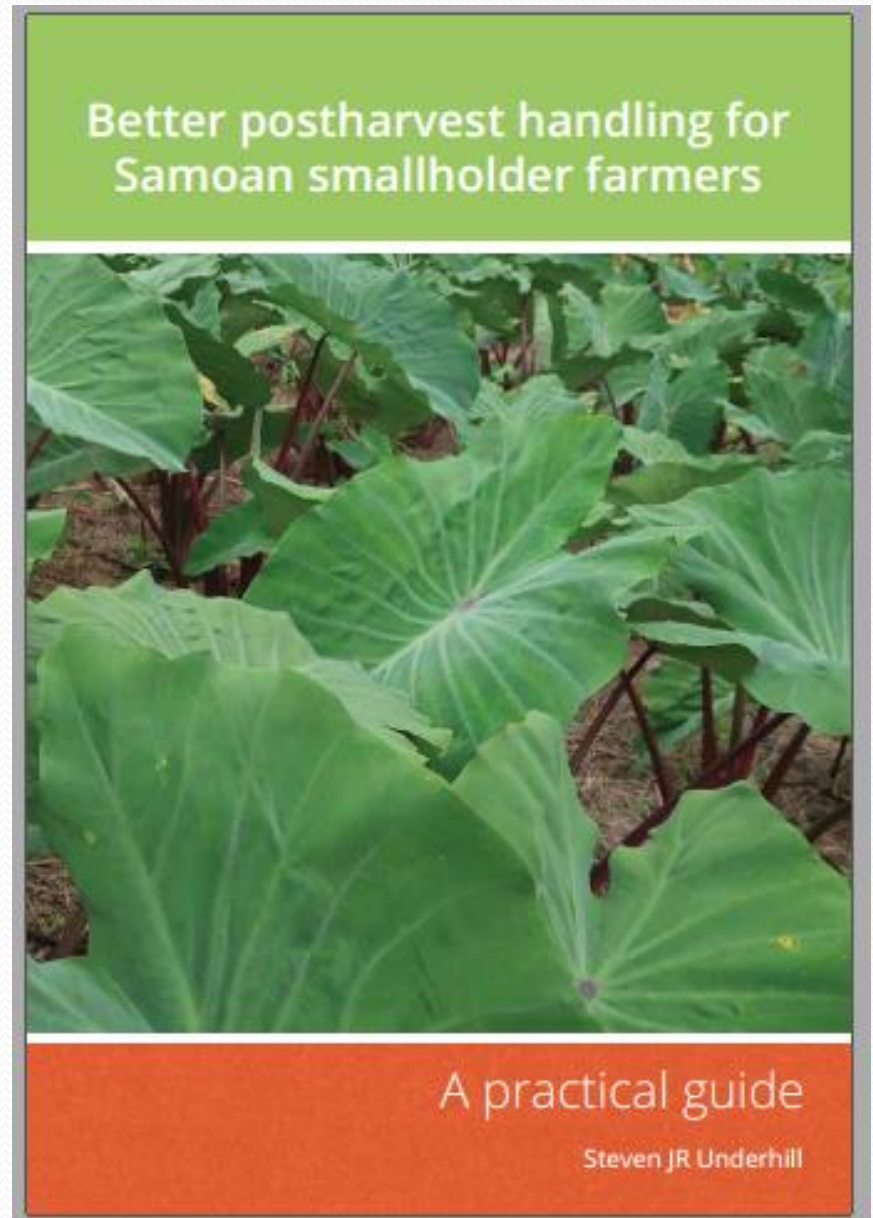
Your Success is their Success



Further Reading  
Published Jan 2017

A great detailed guide full  
of suggestions and tips to  
reduce post harvest losses  
and food safety issues

Electronic copy available





Group Exercises – Value Chain from  
farm to hotel:

Identify what each actor  
contributes, their costs, risks and  
reward.

# Quality is.....

## ...to the grower

- ease of harvesting and handling
- good appearance
- high yield
- disease resistant
- shipping ability
- Profitable

• Easy to grow and easy to sell

## ...to the wholesaler

- good appearance
- firmness
- package robustness
- long storage life
- supply/demand
- shipping ability
- Profitable

• High price & low wastage

## ...to the consumer

- good appearance
- soundness/safety
- flavour
- aroma
- nutritious
- Price

• Taste, appearance, healthy and safety

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