

# New Zealand Asset Management Learning Insights

George Bowman,  
Āpōpō – Infrastructure Asset Management Professionals Inc  
New Zealand



# Introductions or “Mihimihi”

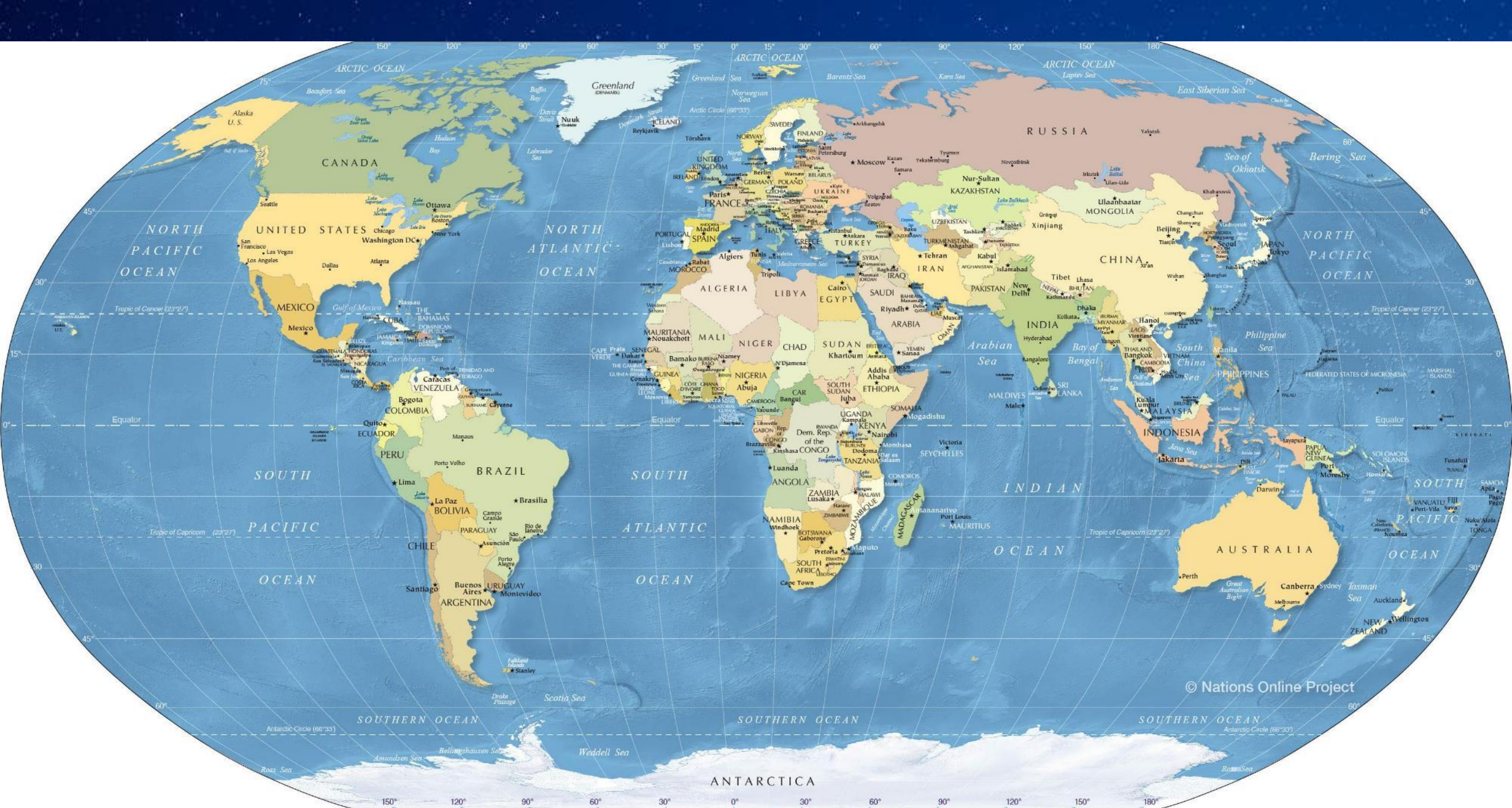


**George Arthur Bowman**



**Mike Curry**





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## En esta presentación

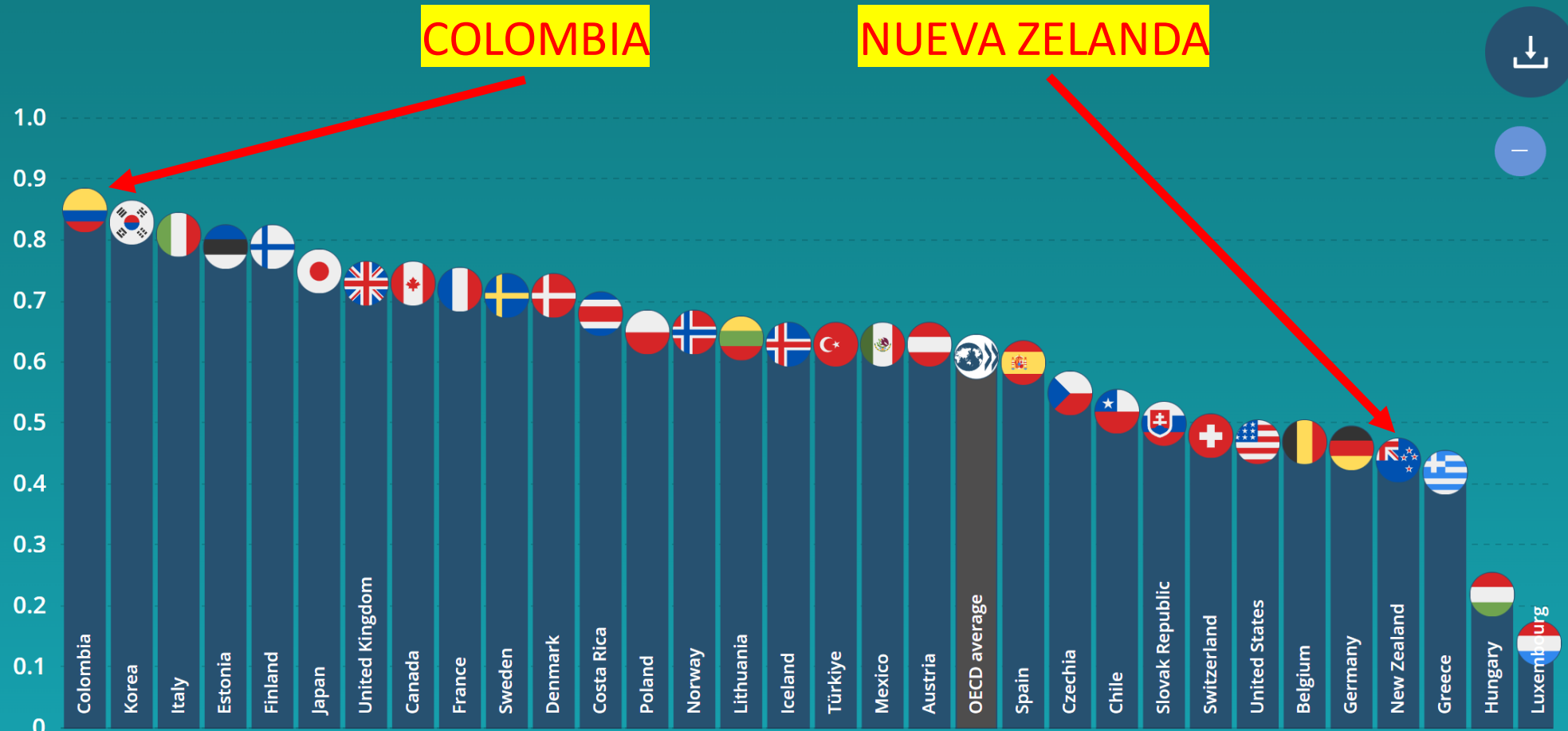
1. The Problem
2. Introducing Āpōpō?
3. The Solution
4. The Results
5. Three Key Takeaways

ĀPŌPŌ®

# 1. El Problema

## Asset life cycle management

Managing assets and networks efficiently at all stages through planning, construction, operations, maintenance and decommissioning is essential for ensuring greater value for money and better outcomes from infrastructure projects for society at large.



# 1. El Problema

SCOOP > POLITICS

## Breaking Decades of Infrastructure Underinvestment

Wednesday, 29 January 2020, 3:37 pm  
Press Release: [Infrastructure NZ](#)

Breaking the Mould of Decades of Infrastructure Underinvestment  
“The Government’s \$12 billion infrastructure programme is building the infrastructure New Zealand need  
Infrastructure New Zealand CEO Paul Blair.

The Government announced the details for our infrastructure spending today. Transport investment in New Zealand’s growth areas, with \$5.3 billion allocated to

## What’s going wrong with our infrastructure?

Gareth Kiernan

January 15, 2024, • 05:00am



## Underinvestment in infrastructure threatens economic growth



### Aotearoa needs sustainable funding and financing of infrastructure

Fundamentally, our current approach to funding and financing infrastructure is not working. Today, we are spending around 5.5 per cent of New Zealand’s GDP on building public infrastructure.

To meet the identified infrastructure deficit, this would need to increase to nearly 10 per cent of GDP or \$31b annually. So, what is holding us back?

When we do invest, too often our critical infrastructure projects, or large programmes of work, are identified without a robust funding plan. It’s hard to argue about the strong need for infrastructure, but who pays is often left unanswered while a quest for more funding is explored.

Debt ceilings and unaffordable rates of interest so relates to political ideology. The Auckland light rail or the new mass

## Infrastructure Report: Opinion - Filling NZ’s \$210b infrastructure deficit black hole

Save | Share

Failure of critical infrastructure and infrastructure investment shortfalls are prominent among longer-term concerns.

### The challenge of global infrastructure development and investment

Although there is widespread consensus among governments and businesses on the importance of infrastructure to a growing economy and

### Chart 1: NZ skimps on infrastructure

Per-capita spending on non-dwelling construction, 2019 prices

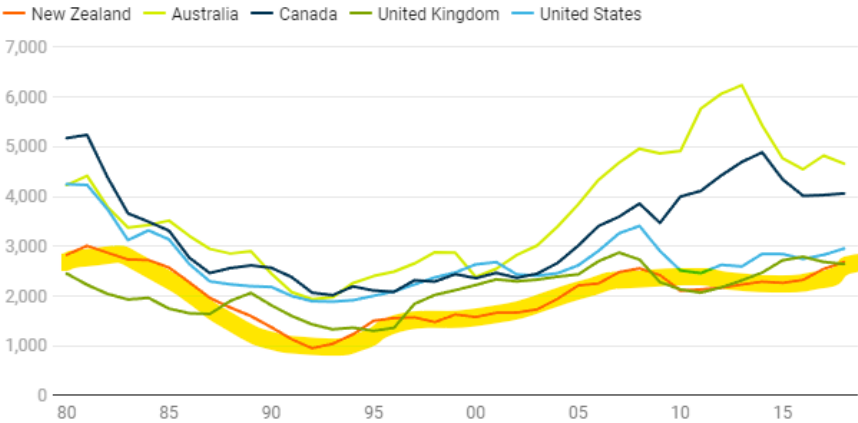


Chart: Brad Olsen/Infometrics • Source: Infometrics calculations from OECD data • Created with Datawrapper

It underfunding of critical infrastructure worldwide is hampering economic progress, and exposing businesses and communities to significant risks. Physical and digital infrastructure are under stress from extreme weather, increasingly potential for a cyber pressure.

Global Risks Report  
Infrastructure  
Risk concerns  
Cyberattacks, the

# 1. El Problema

## Infrastructure deficit



**\$90 billion**  
to fix up water networks



**115,000 more homes**  
are needed to fix the current  
housing crisis

## Climate change + hazards



**\$5 billion** of council  
infrastructure is exposed to  
sea level rise



There is a **75%** chance  
of an Alpine Fault  
earthquake by 2070

## Cost pressures



Infrastructure construction  
costs have risen **60% faster**  
**than prices** elsewhere in  
the economy



We need to spend  
**\$60 on renewals**  
for every \$40 we spend  
on new infrastructure

## Demographic change + Economic growth



New Zealand's population will  
grow to **6.2 million people**  
(or more) over 30 years



Electricity generation  
capacity needs to  
**increase by 170%**



By 2050  
**one in four NZers**  
will be over the age of 65



New Zealand will have a  
shortfall of **118,500**  
**construction workers**  
in 2024

# 1. El Problema



The average Auckland commuter spends over **5 days in traffic** per year



By 2050 **one in four NZers** will be over the age of 65



**\$90 billion** to fix up water networks



**\$5 billion** of council infrastructure is exposed to sea level rise



**115,000 more homes** are needed to fix the current housing crisis



There is a **75%** chance of an Alpine Fault earthquake by 2070



Electricity generation capacity needs to **increase by 170%**



We need to spend **\$60 on renewals** for every \$40 we spend on new infrastructure



New Zealand's population will grow to **6.2 million people** (or more) over 30 years



Infrastructure construction costs have risen **60% faster than prices** elsewhere in the economy



Half of population growth will be in **five major centres**



New Zealand will have a shortfall of **118,500 construction workers** in 2024



# Māori Proverb (proverbio)

He aha te mea nui o te ao?  
He tāngata, he tāngata, he  
tāngata.

What is the most important  
thing in the world?  
It is people, it is people, it  
is people.

¿Qué es lo más importante  
en el mundo?  
Son las personas, son las per-  
sonas, son las personas.

**slido**

Please download and install the Slido app on all computers you use



**In New Zealand, how many asset managers will retire by 2033?**

**¿Cuántos gestores de activos se jubilarán en Nueva Zelanda para el año 2033?**

① Start presenting to display the poll results on this slide.







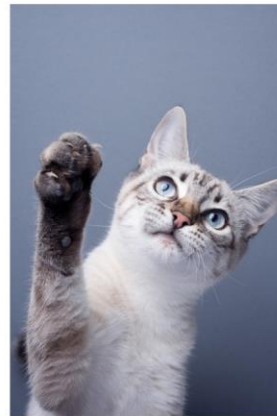
## 2. Introducing Āpōpō?

Āpōpō<sup>®</sup>

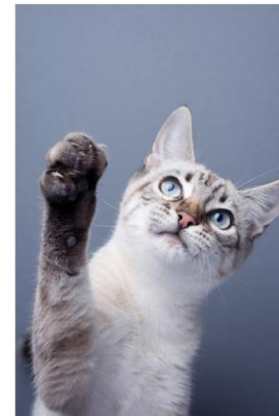
Ahhhhh



paw



paw



# Āpōpō

*Te Reo Māori*

*The night after tomorrow*

We raise our gaze to the future ...for Aotearoa New Zealand

*Our why and our where*

# Āpōpō

Infrastructure Asset  
Management  
Professionals



*Why & Where*



*What*



*Who & How*



## 2. Introducing Āpōpō?



The first president, WG Macky, is 5th from the left in the front row

### New Zealand Institute of County Engineers (NZICE)

NZICE began in 1948 as a forum for a particular group of engineers who met annually at conferences.



### Āpōpō - Infrastructure Asset Management Professionals Inc

Since 2023 our organisation has been known as Āpōpō - Infrastructure Asset Management Professionals Inc.

(NZ) Institute of  
County Engineers

1948 - 1987

ALGENZ

1988 - 2000

INGENIUM

2000 - 2013

Institute of Public  
Works Engineering  
Australasia - New  
Zealand Division Inc  
(IPWEA NZ)

2013 - 2023

**Āpōpō**

Āpōpō Infrastructure  
Asset Management  
Professionals Inc

2023 onwards

# Āpōpō Activities

**Professional  
development  
training and  
networking**  
*Member discount*



**Professional  
Practice  
Accreditation**  
AMA  
AMCP



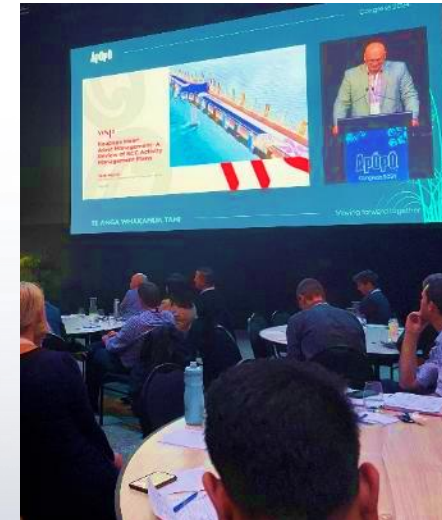
**Insight from  
experts and Special  
Interest Groups  
(SIGs)**

**Member advocacy  
with industry  
stakeholders**



**Awards,  
scholarships and  
recognition**

**Industry leading  
Congress, Forums,  
Branch Events**  
*Member discount*



**The  
Āpōpō  
Guide**

Your comprehensive infrastructure  
asset management resource



**Resources**



## How Can Āpōpō Help?

### Three goals:

1. Lower the barriers for entry into asset management careers
2. Share practical, job-relevant knowledge from experienced professionals
3. Foster a sector-wide culture of lifelong learning

All while reflecting New Zealand's unique context, values, and realities.



# 3. La Solución

## Pathway into Asset Management



### Resource

- The Āpōpō Guide, weaving together te ao Māori and the ISO 5500x suite

### Industry

- In-Person Courses and Webinars on Infrastructure Asset Management

### Level 7

- Graduate Diploma in Asset Management



### Level 7

- Bachelor of Engineering Technology - Infrastructure Asset Management Apprenticeship

### Level 6

- NZ Diploma in Engineering
- Level 6 Certificate of Practice

### Level 6

- NZ Diploma in Infrastructure Asset Management



### Level 8

- Post Graduate Diploma in Infrastructure Asset Management

### Level 9

- Master of Infrastructure Asset Management

### Level 10

- PhD available at Universities of Auckland, Canterbury, Massey and Victoria.

# 3. La Solución

## Āpōpō Digital Badge Programme

 **Jessie Lea MRICS** • 1st  
Manager Strategic Asset Management at Department of...  
8mo • 

Got my latest Digital Badge from Āpōpō, thanks Mike Curry for inviting me to be one of the reviewers! Great course for anyone who writes AMPs.



Āpōpō - AM 430 - Effective Asset Management Plans  
api.learningvault.tech • 1 min read

 26

 Celebrate  Comment  Repost  Send

 **Jodie O'Doherty** • 1st  
Interim CEO - Infrastructure Decision Support  
1mo • 


The Āpōpō Digital Badges continue to be a great way to build a solid understanding in all things Asset management.  
...see more



Āpōpō - Carbon Emissions Analysis in Asset Management  
api.learningvault.tech • 1 min read

 You and 15 others

4 comments

 Like  Comment  Repost  Send

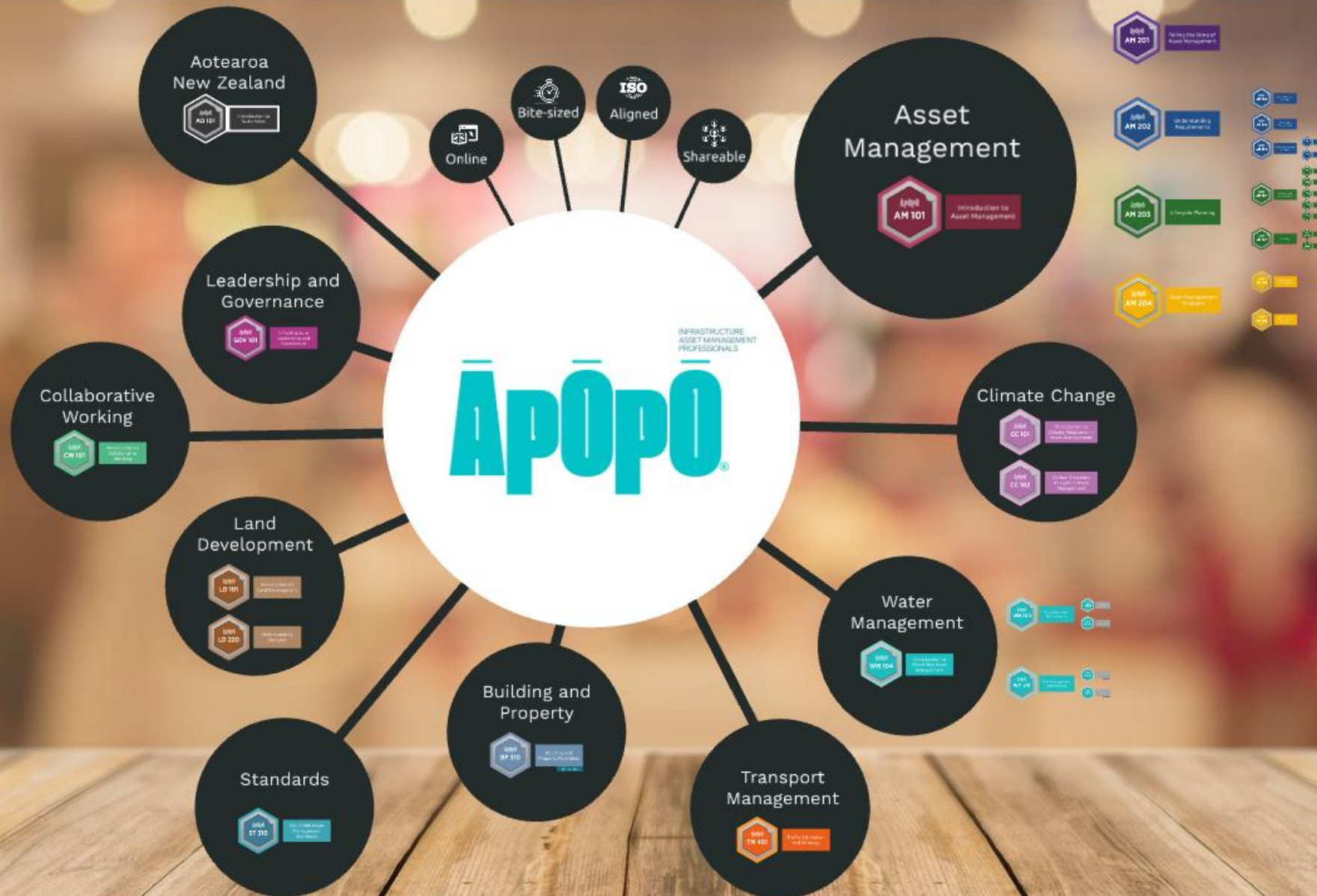
 **Soktaera Sean** • 2nd  
Property Advisor at Ministry of Education of New Zealand | Wellin...  
7mo •  [+ Follow](#)

Another one ticked off my list! I can confirm that I have now received my third badge following the completion of the AM 203 course administered by Āpōpō.  
This course was so engaging, and I love the flexibility that it provides. I am slowly ticking off my professional short-term goals for this year and I am excited to start the next course!  
Thank you [Ministry of Education of New Zealand](#) for the support.



Āpōpō - AM 203 - Lifecycle Planning  
api.learningvault.tech • 1 min read

# Āpōpō digital badge framework





## Āpōpō Digital Badges

These award-winning online learning courses are bite-sized (2-4 hours) so you can fit them in into your busy schedule.



### Four levels

Each level is mapped to Bloom's Taxonomy:

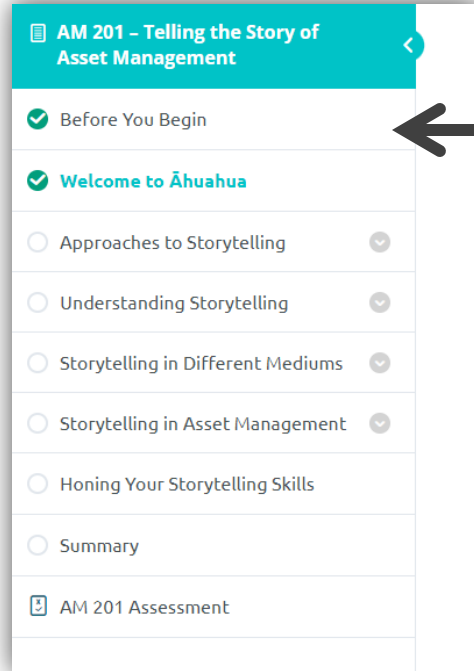
- Introductory (100) = Know, Understand
- Essential (200) = Apply
- Advanced (300) = Analyse
- Specialist (400) = Evaluate, Create

### Modular

Learners can choose the appropriate course for their learning needs.

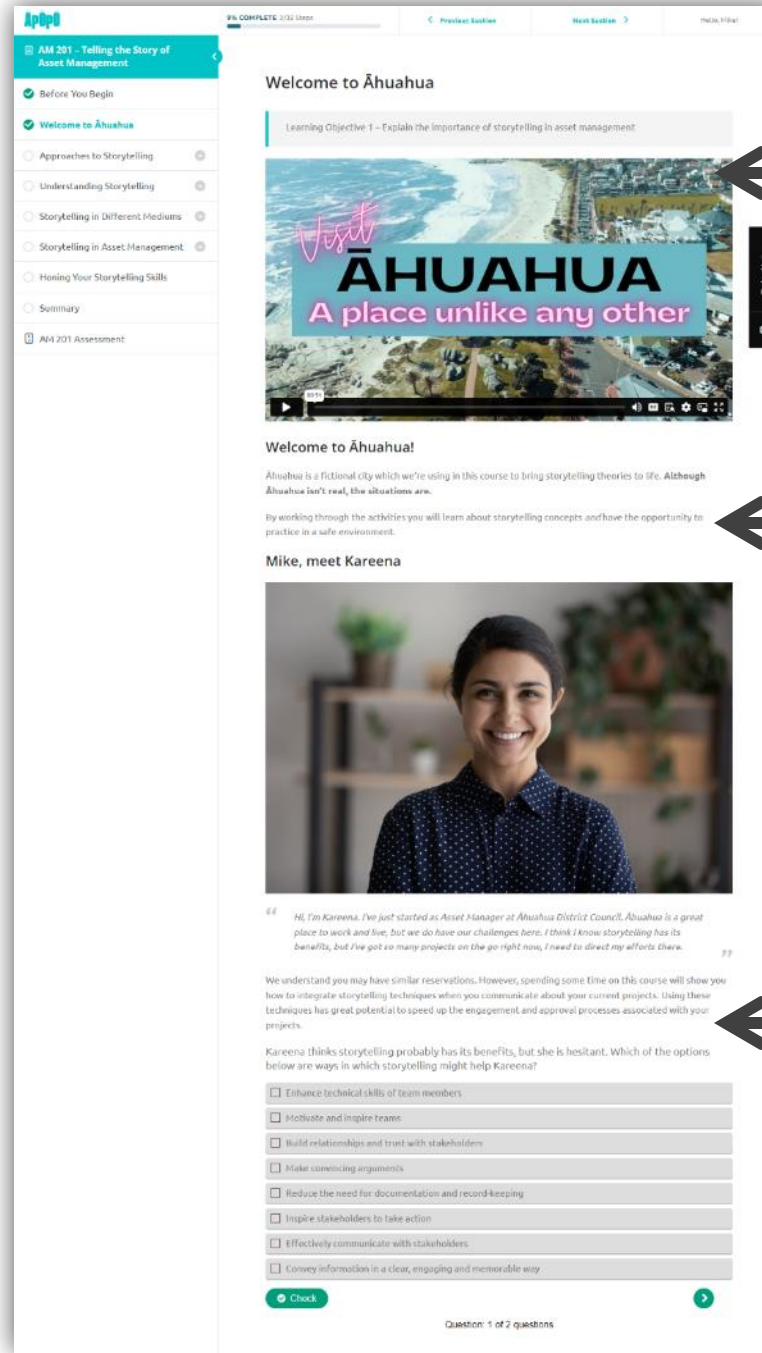
### AM and Niche Skills

The Programme includes courses on best practice asset management, related skills (such as collaboration and storytelling) and niche skills (such as traffic estimation and flood risk asset management).



## Simple UI

Each section of the course is listed on a left-hand navigation panel. As you make progress the circles turn green.



## Āhuahua

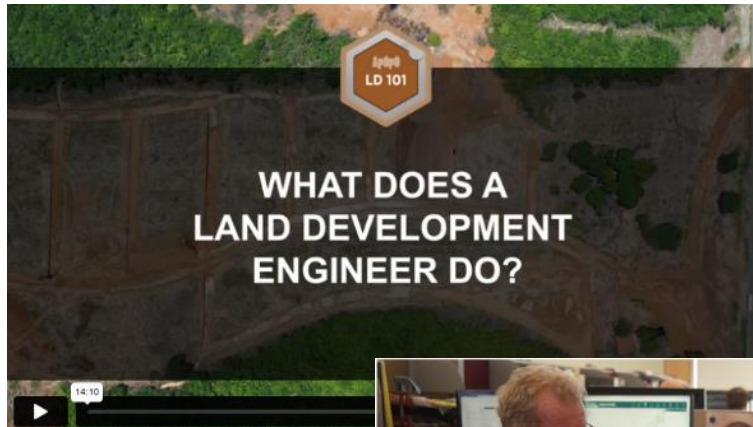
Our fictional council realistically brings the content to life in an environment where it's safe to make mistakes.

## Scenario

Different courses follow different fictional staff members who encounter scenarios that allow learners to practice their skills. In this course about storytelling the learner helps Kareena navigate communication scenarios.

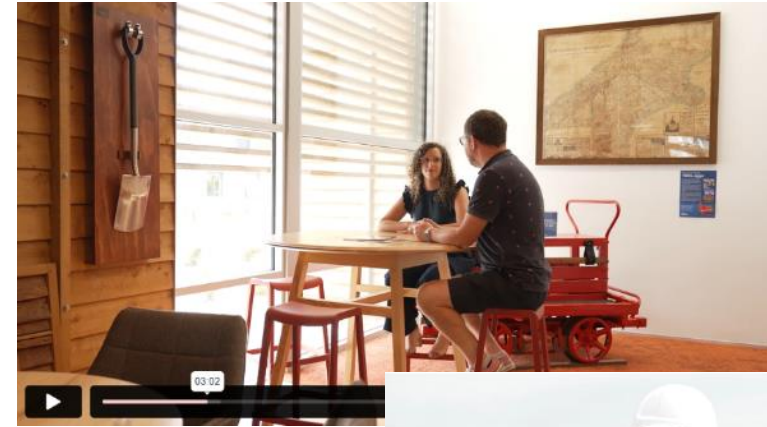
## Interactive

Frequent simple activities keeps the content engaging, playful and interactive.



## *A day in the life*

The course *LD 101 – Introduction to Land Development Engineering* includes a 'day in the life' of a land development engineer, shot on location at Selwyn District Council.



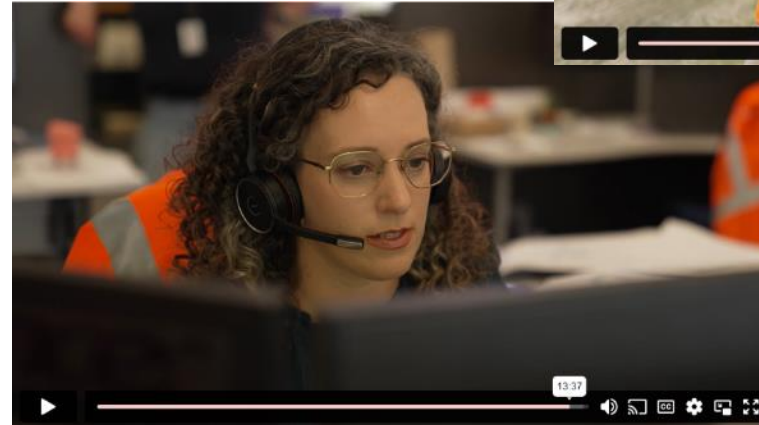
## *Relatable*

Allows the learners to relate the learning material to their own real-world situations.



## *Realistic*

The real-life setting echoes the daily experiences of our learners.











**CLIMATE ADAPTATION  
IN ASSET  
MANAGEMENT  
CC 101**

Dr Theuns Henning



**MODULE OBJECTIVE**

- MODULE 1: CLIMATE SCIENCE, GLOBAL CURRENT TRENDS AND INFRASTRUCTURE

3 Sections  
30 Minutes to Complete  
Contains 2 x 5-minute Quizzes

- Have a basic understanding of the science of climate change.
- How it affects and impacts infrastructure and infrastructure services.
- Hazards, Exposure, Risk & Risk Allocation.

*On the completion of this module, you should be able to explain the different elements of climate change and discuss how the current trends affect infrastructure, infrastructure services and the risks/hazards that surround it.*

*Note: In this module – There are extra links to information and the live data which can be interacted with as needed. Feel free to select these and see how your region fares in the global trends.*

**ApOpO**



Āpōpō

## Essential Asset Management Certificate

- 5 digital badges
- 5 month enrolment
- 5 optional facilitated sessions
- 1 online discussion forum
- Discounts for badges already completed
- Leads into the Advanced Asset Management Certificate, or into formal training with Connexis / Otago Polytech



Āpōpō

## Advanced Asset Management Certificate

- 12 digital badges
- 12 month enrolment
- 10 optional facilitated sessions
- 1 online discussion forum
- Discounts for badges already completed
- Leads into formal training with Connexis / Otago Polytechnic





## 4. The Results

- First four badges launched in 2019
  - AM 101 – Introduction to Asset Management
  - AM 202 – Understanding Requirements
  - AM 203 – Lifecycle Planning
  - AM 204 – Asset Management Enablers
- Began work on subsequent courses....now 28 and growing!!

Year	First Four Badges	All Other Badges	All Badges	Average Completion per Course	Major Events That Year
2020	1,190	0	1,190	298	Covid lockdowns – people forced into online learning
2021	1,170	405	1,575	158	More Covid lockdowns Made 6 new courses (total 10)
2022	876	865	1,741	117	Made 5 new courses (total 15)
2023	675	507	1,182	51	Made 8 new courses (total 23)
2024	450	376	826	30	Significant cutbacks in government spending Made 5 new courses (total 28)
Total	4,361	2,153	6,514		





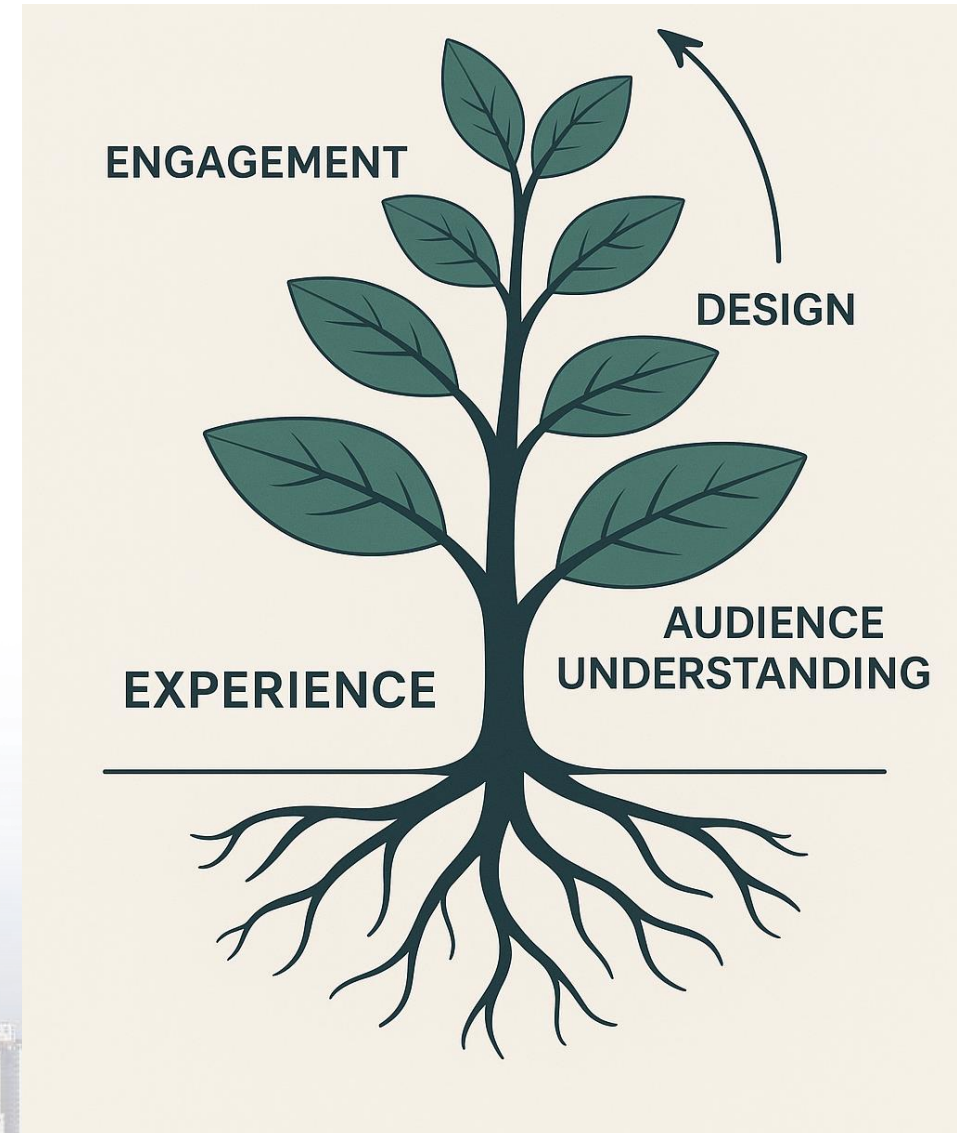


## Ongoing Challenges

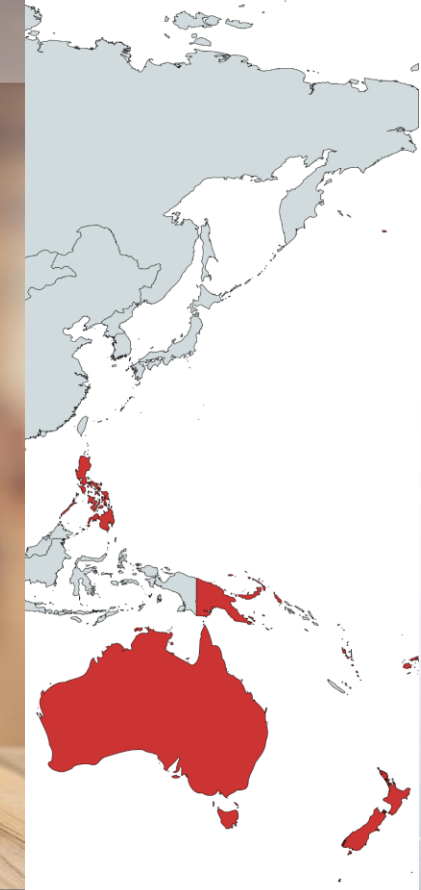
1. Limited resources, COVID, and sector reforms
2. Value of involving subject matter experts
3. Revenue sharing and partnerships to scale

# What's Next?

## 1. Improve learning pedagogy



## 2. Expansion





# What's Next?

## 3. Continue to explore our unique local context



## 5. Three Key Takeaways



### Resource

- The Āpōpō Guide, weaving together te ao Māori and the ISO 5500x suite

### Industry

- In-Person Courses and Webinars on Infrastructure Asset Management

### Industry

- Digital Badge Programme - award-winning online microcredentials

### Industry

- Essential Asset Management Certificate
- Advanced Asset Management Certificate

### Level 7

- Graduate Diploma in Asset Management



### Level 7

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### Level 10

- PhD available at Universities of Auckland, Canterbury, Massey and Victoria.

# Takeaway #1 - Meet learners where they are





## **Takeaway #2 - Learner-centered design drives engagement**



# Takeaway #3: Cultural contextualisation transforms learning into connection





# GRACIAS

# ¿ALGUNA PREGUNTA?

