

26 September 2021

Rt. Hon Minister David Parker
Minister of Oceans, Fisheries and Environment
New Zealand Government
Parliament Buildings
New Zealand

Rino Tirikatene
Under-Secretary Oceans and Fisheries
Under-Secretary Trade and Export
Growth (Maori Trade)
New Zealand Government
Parliament Buildings
New Zealand

SUBJECT: BAY OF PLENTY IWI AQUACULTURE | MAORI TRADE AND EMPLOYMENT

E te Minita David, me Under-Secretary Rino,

I roto i nga āhuatanga rereke o Te Ao, tena hoki korua (in these most challenging of global times, I greet you both)

Two months ago (July) we met with you both to review and update you on the work we have as collective iwi in the Waiariki region towards large scale and sustainable smart-aquaculture owned and led by our iwi.

I wanted to give you a further update on our effort to this point:

- 1) Firstly, all on track and going to plan. Our collective effort dates back almost a year and a half now where we conducted national and global research on the state of global fisheries and aquaculture development. From which we generated a 'long list' of specie options for Waiariki conditions and reported back to our collective iwi in August of 2020;
- 2) We then ran a technical process to short list down to the top six candidate species and reported this back to our collective iwi at Te Rere marae in Opotiki earlier this year.

You recall that Sea-run trout came through as the single highest priority specie where we agreed to set aside this option for the moment to concentrate on the next 5 top ranked species;

- 3) As at today we are completing the final economic modelling and business case development for greenlip mussels, sea-run kingfish, land-based kingfish, a variety of seaweed and a scallop option.

What our economic analysis and modelling has told us is:

- 1) **Scale matters!** World class aquaculture will require a collective and regional scale effort. That is if one or two iwi to attempt to do this alone, it would fail (IRR of 2 percent). Where instead, if say 10 iwi (or 5,000 hectare mussel) would generate an IRR of 10 percent.
- 2) Such scale aquaculture for all of the above species would generate at maturity **\$NZ1.5B and create 2,000+ new jobs** across the regional and national economy (see attachment);
- 3) Since we last met we have also formed a new ground-breaking Science and Technology Collaboration with:
 - The Universities of Waikato and Otago;
 - Crown Research Institutes NIWA and New Zealand Plant and Food; and
 - Independent Marine Researcher, the Cawthron Institute.

Our shared objective to build a comprehensive science and technology road map that underpins our Iwi marine and aquaculture development plans with world class science and technology towards a world class development that is owned and led by our iwi.

In summary, we have made much progress where I am watching closely government efforts like the new Hauraki Marine Reserve, RMA forms alongside the Government Aquaculture Strategy. I am clear everything our collective iwi are championing in our region of Te Waiariki is directly aligned to these same policies and programs.

But, there remains much more work to be do as you can appreciate to bring these plans to life and the 1,000's of new whanau jobs in our rohe!

Our team continues to work actively working with your officials from MPI and NZTE to map out critical next steps and \$700k resourcing that includes:

1. Advancing the Aquaculture Settlement process;
2. Advancing critical RMA reforms that in its current form will be a major impediment and critically destroying the economic viability of our effort;
3. Building and consolidating a major (\$20 million) Science and Technology funding application that responds the immediate challenges of COVID19, climate change and the Circular and Blue economy;
4. Engaging the private, iwi and indeed government co-investment to raise the \$NZ200 million capital needed.

I would like (even by zoom) to meet with you both soon to discuss our work to date and options to advance our shared efforts together.

Keep safe David, Rino, koutou mā!

Kia ora and kindest regards,



Chris Karamea Insley

Chair

Nga Iwi i Te Rohe o Te Waiariki

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Copied to:

Waiariki iwi

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Minister Stuart Nash

Doug Paulan (Sealord)

Matt Walsh (NZ Carbon Farming)

Laws Lawson (Te Ohu Kaimoana)

Matt Bartholomew

Prof. Indrawati Oey University of Otago

Dr. Serean Adams Cawthron Institute

Peter Vitasovich Te Whakatohea Mussels

Dr. Max Kennedy (MBIE)

Dr. Penelope Gibson (PhD IP)

Iwi nationally

Dickie Farrar Te Whakatohea

Dr. Ken Kennedy

Harry Mikaere

Maru Samuels

Minister Kiritapu Allen

Danny Loughlin

Paul Morgan (Wakatu Incorporation)

Lisa Te Heuheu (Te Ohu Kaimoana)

Graeme Coates

Dr. Bryony James Waikato University

Dr. Helen Mussely NZ Plant and Food

Marino Tahiri NIWA

Barry Soutar TW3

Peter Rice

Alastair Rhodes (BayTrust)

Attachments Te Waiariki Aquaculture Opportunities Business Case Summary

Te Waiariki Iwi Aquaculture Opportunities

Business Cases Overview



Priority Aquaculture Opportunities for Ngā Iwi in Te Waiariki

Based on the opportunities assessment mahi to date, four species* stand out as good aquaculture prospects for Ngā Iwi:

- Offshore Greenshell Mussels | Kutai
- Offshore Ecklonia Seaweed | Rimurimu
- Offshore Yellowtail Kingfish | Warehenga
- Land-based Yellowtail Kingfish | Warehenga

Business Cases were constructed for each of the options. The high-level financials are presented here.



* Plus New Zealand Scallop | Tupa – candidate for offshore pilot.

Offshore Greenshell Mussels



- **Opportunity is:**

- Mussel farms allocated off the coast of Ōpōtiki / Te Kaha modelled at a size of **500, 2,000 and 5,000 hectares**, which may provide a harvest of approximately **1,200, 4,770 and 11,900 greenweight tonnes per annum** respectively. Spat caught on-site from natural productivity (wild) and supplied by the *Te Huata* mussel hatchery in Te Kaha. Raw product processed at the Te Whakatōhea factory located in Ōpōtiki (toll charge per tonne greenweight of \$1800).

- **Costs are:**

Scenario:	500ha	2,000ha	5,000ha
• Capex:	\$13.6m	\$25.8m	\$55.2m
• Growout Opex (p.a.):	\$0.98m	\$3.63m	\$8.93m
• Sales/processing Opex (p.a.):	\$2.57m	\$10.2m	\$25.7m

- **Revenue is:**

Scenario:	500ha	2,000ha	5,000ha
• Annual return (IRR)	3%	9%	11%

- **Jobs supported* (base case – 2,000 ha):**

- During establishment (one offs) = **348** On-going employment supported = **240**.

- **Potential economic impact**:**

• 2,000 ha scenario	Total = \$142m	Establishment = \$30m	Ongoing = \$112m
• 500 ha scenario	Total = \$46m		
• 5,000 ha scenario	Total = \$335m		

*Employment expressed as Modified Employment Counts (MECs) - employee counts and working proprietors. Includes induced employment impacts.

**Direct, indirect & induced value-added impacts @4% discount rate.

Offshore Ecklonia Seaweed



- **Opportunity is:**

- Seaweed farms allocated off the coast of Ōpōtiki / Te Kaha modelled at a size of **250, 500 and 1,000 hectares**, which may provide a harvest of approximately **1,400, 2,800 and 5,625 greenweight tonnes per annum**, respectively. Seaweed spat to be supplied by a newly constructed hatchery in eastern BoP. Raw product air dried on coastal land near to point of harvest.

- **Costs are:**

Scenario:	250ha	500ha	1,000ha
• Capex:	\$12.8m	\$20.3m	\$39.2m
• Growout Opex (p.a.):	\$480k	\$960k	\$1.9m
• Sales/processing Opex (p.a.):	\$1.3m	\$2.7m	\$5.37m

- **Revenue is:**

Scenario:	250ha	500ha	1,000ha
• Annual return (IRR)	3%	5%	5%

- **Jobs created* (base case – 500 ha):**

- During establishment (one offs) = **193** On-going employment supported = **149**

- **Potential economic impact**:**

• 500 ha scenario	Total = \$94m	Establishment = \$22m	Ongoing = \$72m
• 250 ha scenario	Total = \$55m		
• 1,000 ha scenario	Total = \$180m		

*Employment expressed as Modified Employment Counts (MECs) - employee counts and working proprietors. Includes induced employment impacts.

**Direct, indirect & induced value-added impacts @4% discount rate.

Land-Based Yellowtail Kingfish



- **Opportunity is:**

- Land-based farm likely located near Ōpōtiki. Farm will utilise Recirculating Aquaculture System (RAS) technology and will produce **4,000 greenweight tonnes of yellowtail kingfish per annum** (year-round supply, ~48 weeks). RAS hatchery located onsite will supply juveniles (~1.5 million per annum). Kingfish product will be processed into gilled and gutted whole fish (head on) at the Te Whakatōhea factory in Ōpōtiki (toll of \$2,875 per gross tonne).

- **Costs are:**

Scenario:	4,000t
• Capex:	\$90.8m
• Hatchery & Growout Opex (p.a.):	\$34m
• Sales/processing Opex (p.a.):	\$14.8m

- **Revenue is:**

Scenario:	4,000t	
• Annual return (IRR)	10%	(If an increase in price of 20% can be achieved, the annual return increases from 10% to 17%)

- **Jobs created*:**

- During establishment (one offs) = **840** On-going employment supported = **801**.

- **Potential economic impact**:**

• 4,000t scenario:	Total = \$633m	Establishment = \$94m	Ongoing = \$538m
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*Employment expressed as Modified Employment Counts (MECs) - employee counts and working proprietors. Includes induced employment impacts.

**Direct, indirect & induced value-added impacts @4% discount rate.

Scallop Farming Pilot

An opportunity exists to address the supply shortfall with **premium, sustainably farmed (non-dredged) New Zealand scallop**, for sale into the domestic food service and retail sector.

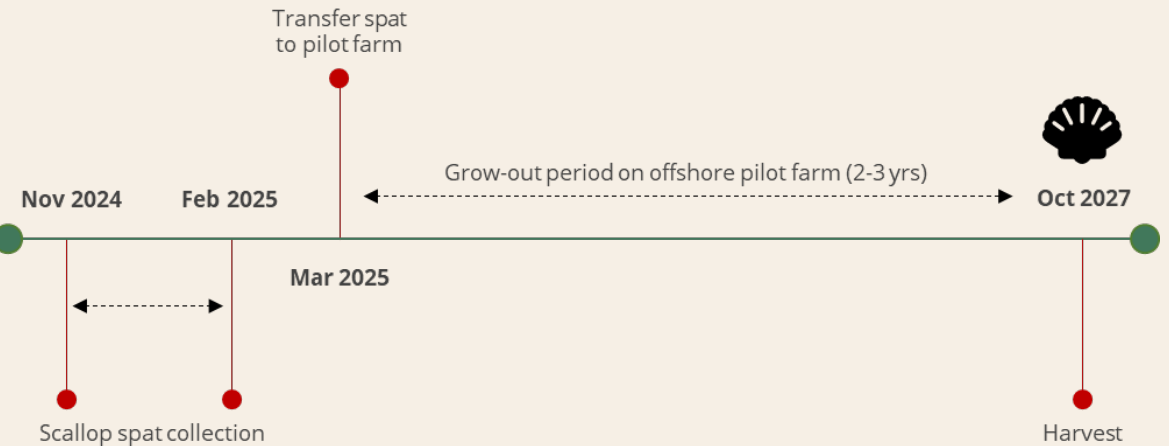
While the scallop farming opportunity is not yet fully understood (hence being excluded from the modelling), there are several positive signs in terms of the farming approach as well as favourable market conditions that warrant further exploration of the opportunity. It is recommended that interested iwi explore the offshore scallop farming opportunity through a pilot. This will give BoP iwi greater certainty regarding the technical & economic feasibility.

Cost estimate:

- \$150,000 - \$200,000

Potential partners:

- Nissui
- Potentially Cawthron Institute.



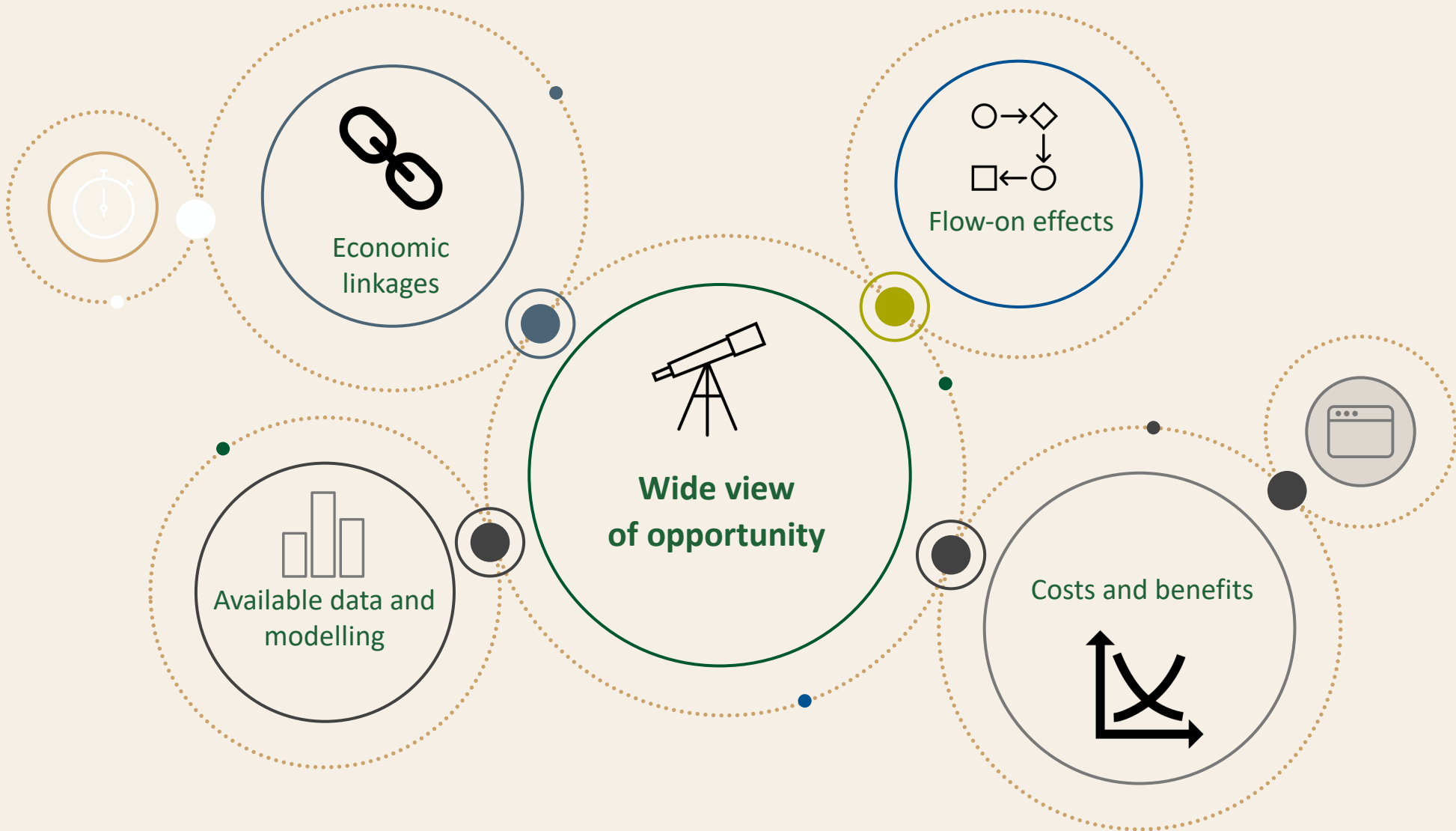
*Indicative timeframe only

Notes for economic assessment

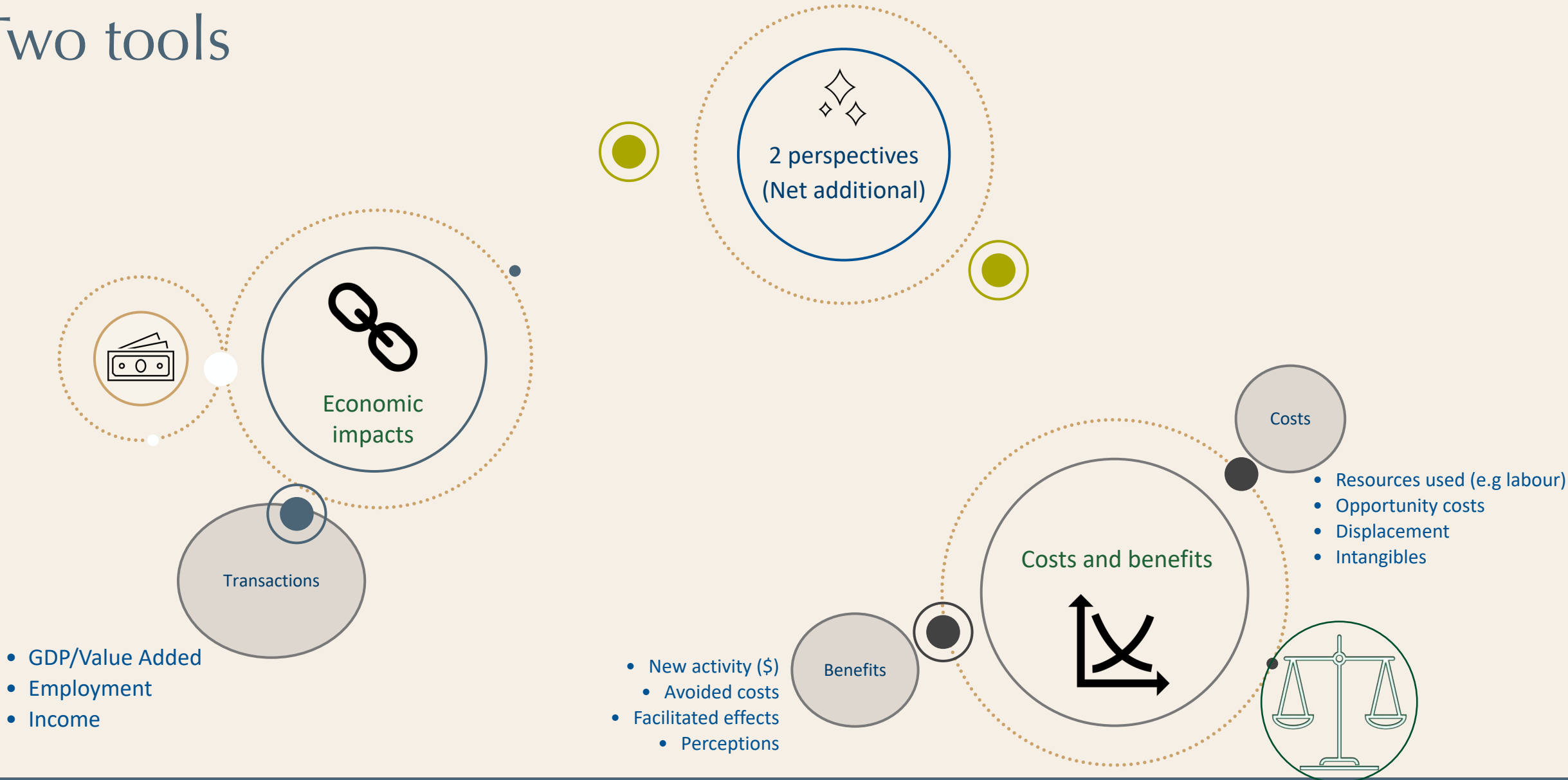
- Approach
 - Two perspectives
 - Economic impact assessment (EIA)
 - Cost benefit assessment (CBA)
- EIA
 - Key terms

GDP, employment and economic impacts ≠ benefits!

Notes for economic assessment

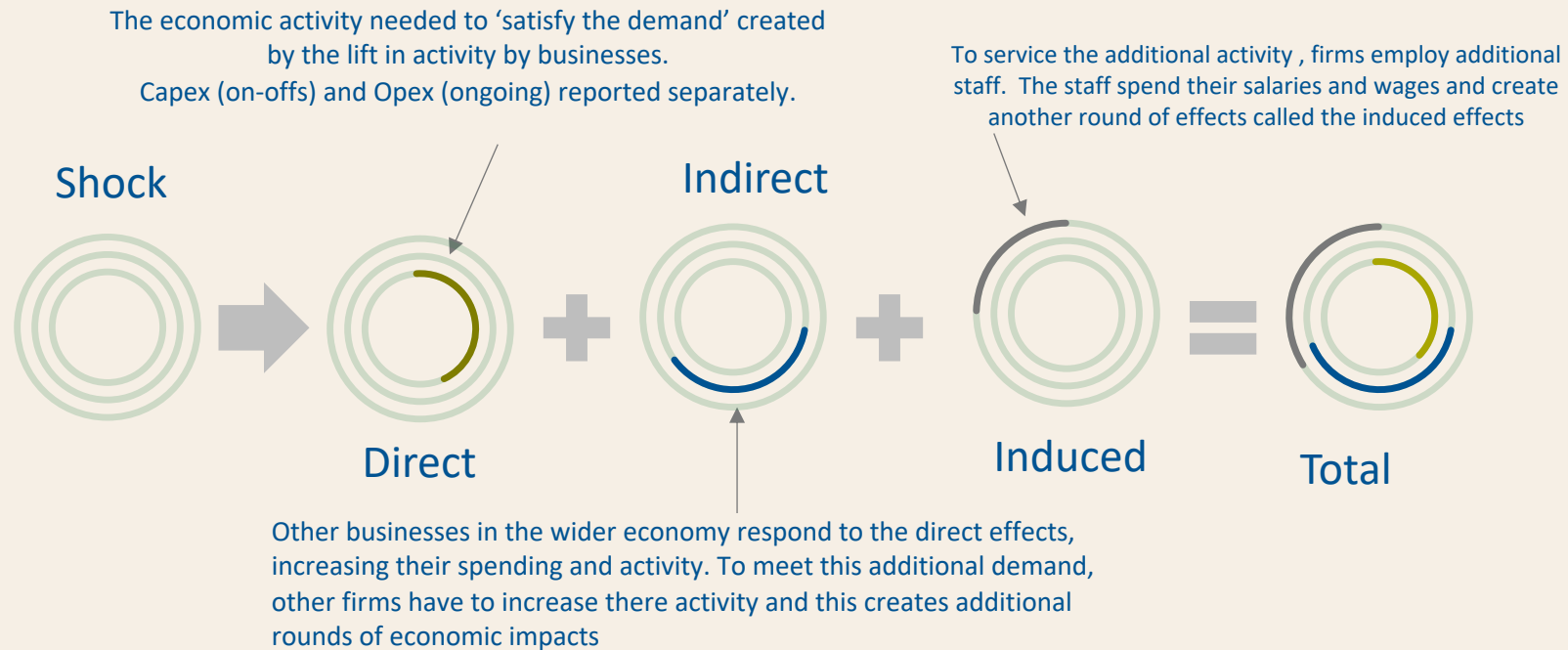


Two tools



Important concepts

- Additionality
 - Exclude anything that would have taken place regardless of the intervention
- Constant terms
 - Remove the effects of cost inflation
- Different Effects



Terminology

- **Direct and indirect impacts:** when a business spends (new) money in the local economy, then the economy responds by firstly increasing (or decreasing) activities supplying the goods and services, needed to address that initial demand. This is the direct effect. All firms supplying the businesses responding to that new level of spending, adjust their outputs, stimulating further rounds of impacts, and so forth. Further flow on rounds of activity are needed to meet the extra demand and these rounds are called the indirect impacts.
- **The induced impacts:** As businesses respond to the economic change (the direct and indirect impacts explained above), they employ additional workers (by increasing staffing hours, employing more people, or working overtime). This leads to a lift in salary and wage payments to households, i.e., more salaries and wages paid to workers in return for their labour. Businesses also take additional profits as operating surpluses increase – this is partially returned to households through dividends paid to business owners or investors. As households spend their returns or earnings, further rounds of effects are created. These are termed induced impacts.
- **The total impact** reflects the sum of the direct, indirect, and induced impacts. This is what is presented here.
- Crucially, the economic impacts should not be seen as benefits. **Value Added;** the metric used to measure economic impacts, includes items like **salaries and wages, consumption of fixed capital and taxes.** A salary / wage is a gain to the worker but a cost to the company. Further, the initial capital investment (e.g., constructing a building) generates economic activity and so it delivers a VA impact. But this capital investment is a cost, and resources are used to deliver the investment. The ‘used resources’ have economic values and opportunity costs are incurred. **Value Added is similar to GDP but excludes some taxes.**
- Employment (jobs) is expressed as **Modified Employment Counts (MECs)** – includes both employee counts and working proprietors.
- **The 4% discount rate** is consistent with the default rate used by Waka Kotahi when assessing infrastructure projects. The discount rate represents the rate at which society is willing to trade off present benefits and costs against future benefits and costs, thus **capturing the time value of money.**