



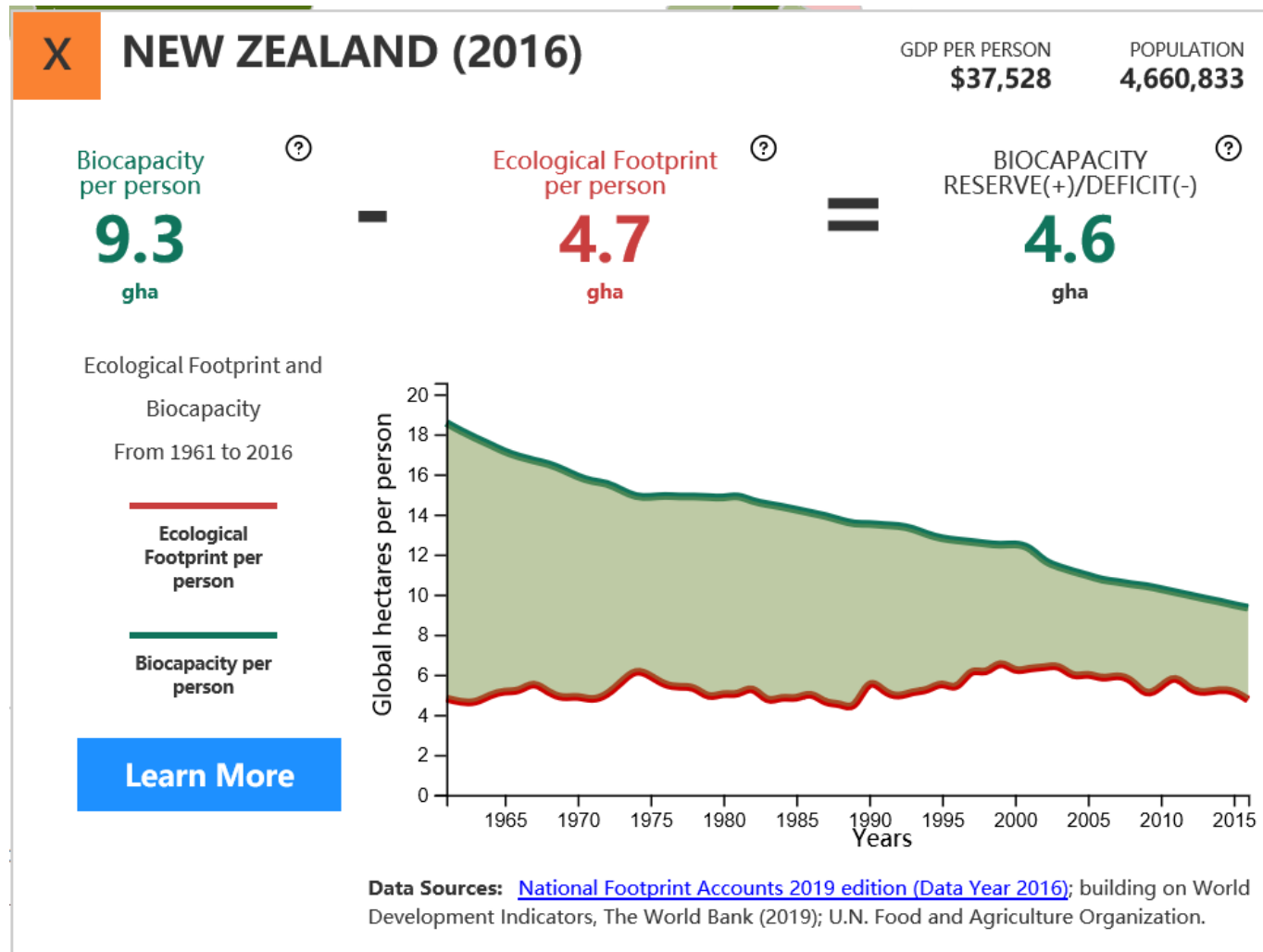
Generating investable propositions for ecosystem services across the landscape

Envirostrat insights & learnings

SCION Workshop
Oceania Ecosystem Services Forum
2 September 2019

NZ ecological footprint (2019 update)

Source: FootprintNetwork.org



What is impact investing, uptake challenges

“Investments intended to create positive impact beyond financial returns”

- Globally, impact investment, and specifically conservation investment (which refers to *investments made with the intention to generate a financial return while also delivering a positive impact on natural resources and ecosystems*) has been growing significantly in recent years.
- New Zealand: limited experience but investors are interested in understanding the potential for investing in environmental outcomes where there is a sensible rate of return.



Generating investable propositions

Leveraging catchments/landscape and value chains to achieve scale

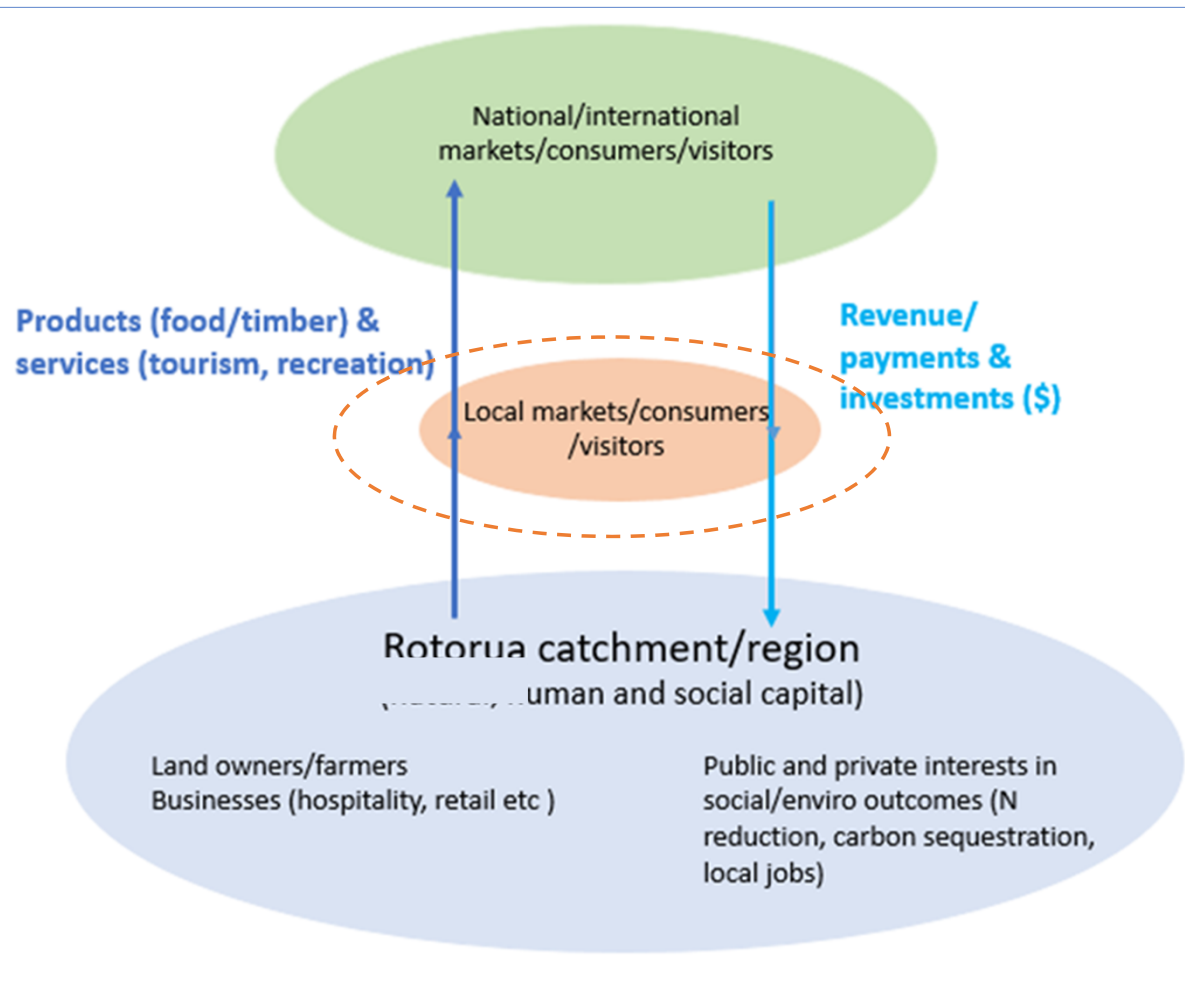
Requirements and needs: economics & finance

Strong focus on financial performance and understanding of costs, revenues, operating profits, IRR, cash flows

Uncertainties/risks related to commodity prices

Opportunity costs/land value/capital gain

Capital costs for environmental mitigation



Requirements and needs: science (bio-physical, social)

Strong focus on impact metrics & returns

Science & knowledge to underpin mitigation, measurement & reporting of impact (core focus on carbon, N, P, e.coli, sediment)

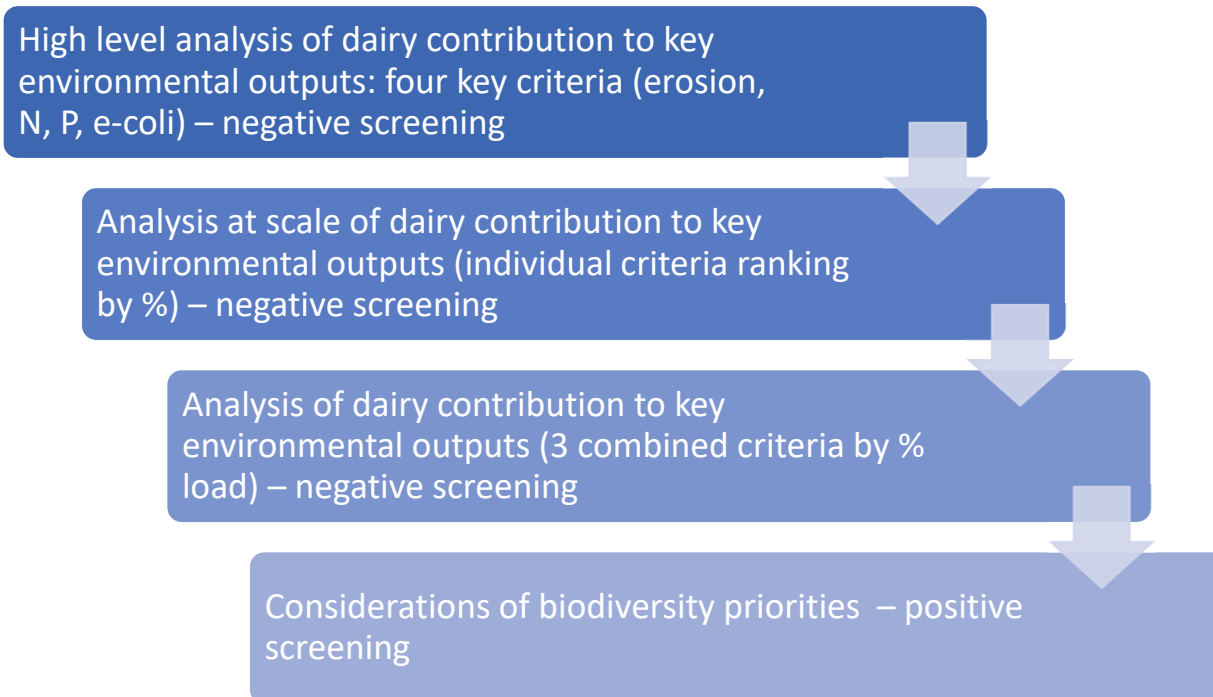
Uptake of new practices and smart tech

Certification to back enviro performance and product provenance

Multi-criteria analysis to identify hot spots

Ecosystem Services Review prioritization approach (the outcome informs the key enviro criteria & investment matrix)

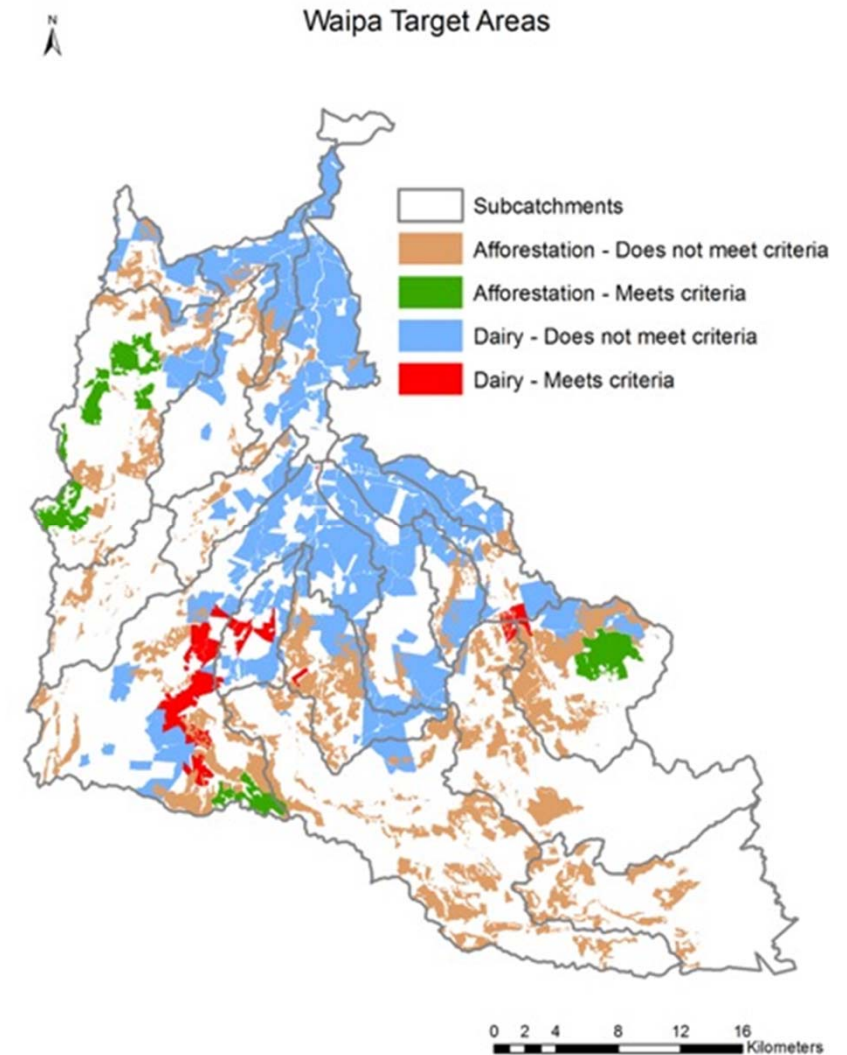
Environmental criteria: sedimentation, N, P and *E.coli* ; carbon sequestration was also considered.



Afforestation: broad proposition but context-specifics are important

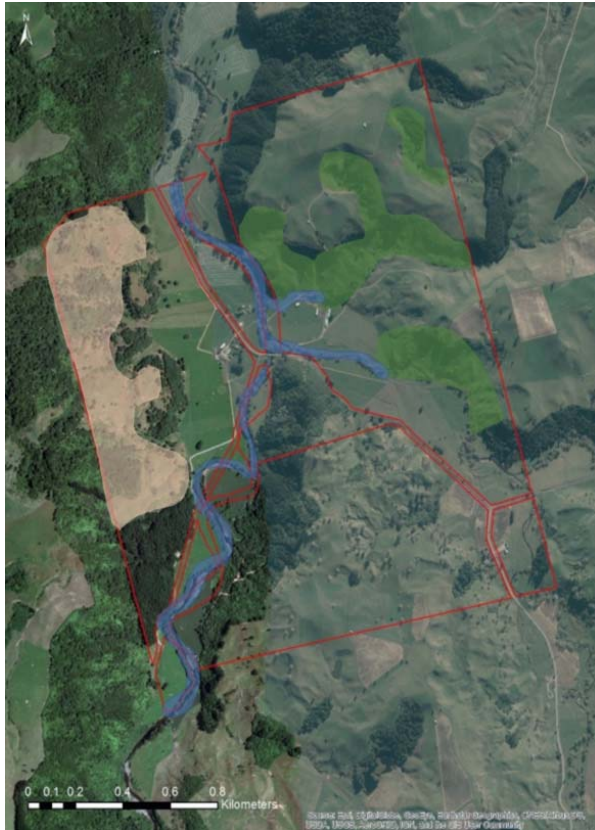
Considerations:

- Replicability and scalability
- Linkages to afforestation potential in the study area
- Additionality: accelerate the delivery of policy/regulatory targets (water quality), reduce GHG's
- Accessing private capital (onshore, offshore)



Key interventions for environmental mitigation

(implemented over a five year period through a farm environment plan)



Note: highlights in this GIS map represent potential areas for afforestation (green highlights for native forest, yellow highlight for manuka forest) and riparian planting (blue highlights); intervention areas are not at scale.



AFFORESTATION

32 ha of grazing land converted to forest cover (25 ha native bush & 7 ha manuka – potential for honey)



STOCKING RATE REDUCTION

Stocking rate reduced by ~20%.



RIPARIAN PLANTING

3 to 5m riparian buffers (native plants, locally eco-sourced) along Waipā River and main tributaries (over 3 km in total)



PASTURE CHANGE

Removal of artificial fertiliser and development of diverse pastures with high natural nutrient.



SEDIMENT RETENTION

Installation of sediment retention ponds for all streams discharging into the Waipā River



CROPPING

Removal of cropping (10.5 ha) from area alongside Waipā River

EXPECTED ENVIRONMENTAL OUTCOMES

| | N (kg) | P (kg) | e.Coli (tera) | Sediment (MT) | GHGs (tCO ₂ e) |
|----------------------|--------|--------|---------------|---------------|---------------------------|
| Current baseline | 11,067 | 211 | 439 | 508 | 1,050 |
| % reduction (year 5) | >50% | >45% | >40% | >55% | >35% |

Waipa Catchment example:

Financials/investment returns

- IRR expectations (~8-10%): consistent with global norm
- Real asset backed
- Portfolio approach: dairy + afforestation is necessary as cash flow and returns vary between dairy / S&B / forest cover
- Under a land purchase model, total investment >\$100M.
- Dairy: need long term organic milk supply agreements or lock in premiums (\$7.35 break-even for Waipā)
- Carbon price could be a significant incentive

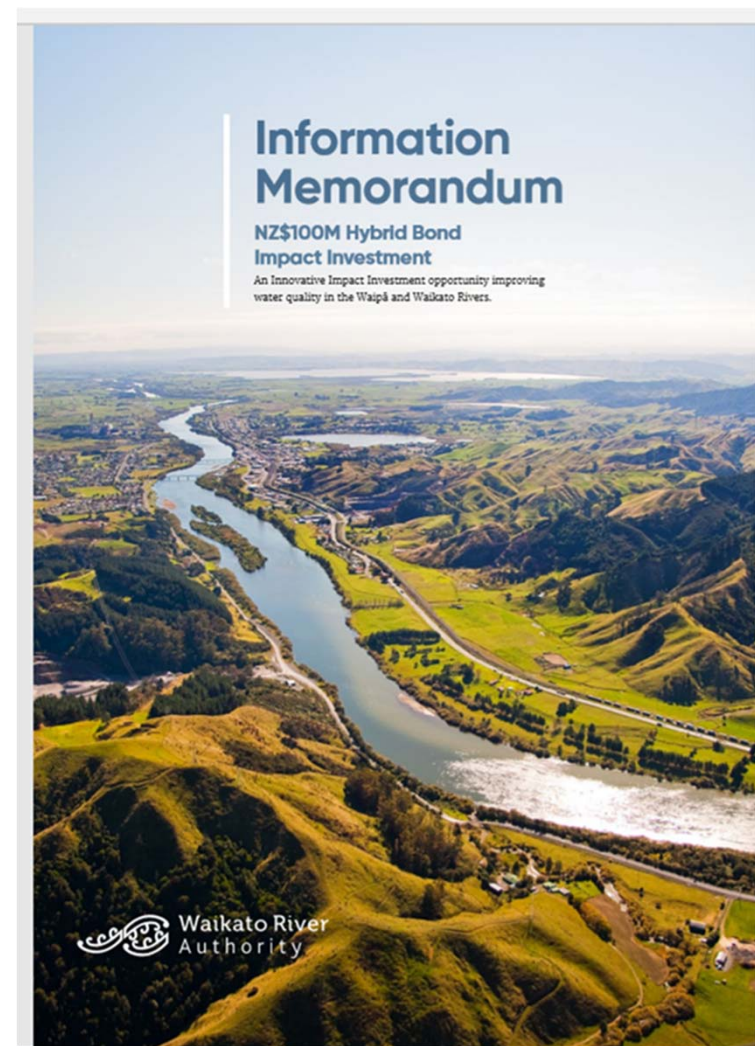
Potential environmental improvements have catchment-level significance

Sediment example

Total reductions in sediment load from mitigation on 6,539 ha: app. 17,000 t

Scale relevance:

- Overall Waipā catchment sediment reduction: ~4.3% net.
- Waikato river sediment reduction: ~1.8% net



Impact metrics:

Feasibility : impact screening



Due diligence: impact planning



Investment: measure, monitor and report

| Metrics | Indicators | Outcome target (farm vs aggregate measure) | Measurement Unit | Practice/measure | Relevant UN SDG |
|--------------------------|--|---|--|--|--|
| Water quality | Nitrogen load | Total # kg sediment reduction or 35 – 50% reduction from baseline | kg per ha kg nitrogen reduction/million dollar invested | Stocking rate management Riparian management Pasture/grazing management Silvo-pasture | 13. Climate Action 15. Life on Land |
| | Sediment | Net # tonnes sediment reduction or 35 - 55% reduction from baseline | tonnes per ha tonnes sediment reduction/million dollar invested | Stocking rate management Riparian management Pasture/grazing management Silvo-pasture | 13. Climate Action 15. Life on Land |
| Land conservation | Farm area under organic regime | 100% of effective dairy and support blocks in organic regime | ha under organic certification ha under transition to organics | Organic certification-related measures | Goal 12: Sustainable consumption and production patterns 15. Life on Land |
| | Farm area under forest cover (native and exotic) | 25% of farm area under forest cover | ha forest cover | | 15. Life on Land |
| | Length of stream with riparian management | Over 80% from overall cat. 3 stream length on farm | m riparian planting | | 15. Life on Land |
| Greenhouse gas emissions | CO2 | 35-50% tonnes of CO2 reduction | # CO2 t reduction/ million dollar invested | Stocking rate management Afforestation Pasture/grazing management Riparian management | 13. Climate Action |

Future Landscapes & incentives for change

- Develop value propositions by expanding analysis/tool development with a view to include revenue generation and investment pathways in decisions regarding land use diversification
- Leading pilots that can test/demonstrate/socialise the environmental & social impacts from diversification of land use, including development of impact metrics and indicators
- Strategies for impact investing & finance in land use management and water quality
 - how to make use of bio-physical tools and data to finance transformation at landscape level
 - what is the scale of the investment needs for NZ, how can govt money be leveraged etc).

Incentives for change

- Apply knowledge re. natural capital/carbon protocols to determine true footprints/holistic evaluation of food production (externalities) – making connections to farm/agribusiness level accounting.
 - Project idea: evaluating the externalities of the NZ farming/food system prior to exploring incentives for change (including taxation/ polluter pays/preferential procurement/local markets/ etc).
- Facilitating land use change by exploring the interface food/farming and tourism, food/farming and local economy, health (farmers, consumers)

Thank you for your attention.

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