



**I hereby give notice that
an Economic Development Committee Meeting will be held on:**

Date: Tuesday, 21 February 2017
Time: 1.30pm
**Location: Council Chamber, Wairoa District Council,
Coronation Square, Wairoa**

AGENDA

Economic Development Committee Meeting

21 February 2017

Fergus Power
Chief Executive Officer

The agenda and associated papers are also available on our website: www.wairoadc.govt.nz

For further information please contact us 06 838 7309 or by email info@wairoadc.govt.nz

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- 1 KARAKIA**
- 2 APOLOGIES FOR ABSENCE**
- 3 DECLARATIONS OF CONFLICT OF INTEREST**
- 4 CHAIRPERSON'S ANNOUNCEMENTS**
- 5 LATE ITEMS OF URGENT BUSINESS**
- 6 PUBLIC PARTICIPATION**

A maximum of 30 minutes has been set aside for members of the public to speak on any item on the agenda. Up to 5 minutes per person is allowed.

- 7 MINUTES OF THE PREVIOUS MEETING**

8 GENERAL ITEMS

8.1 TERMS OF REFERENCE

Author: Charlotte Knight, Governance Advisor & Policy Strategist

Authoriser: Fergus Power, Chief Executive Officer

Appendices: 1. Terms of Reference [↓](#)

1. PURPOSE

1.1 This report provides information for Committee on the terms of reference for the committee. No decisions are required by Committee at this stage.

RECOMMENDATION

The Governance Advisor & Policy Strategist RECOMMENDS that Committee receive the report.

2. BACKGROUND


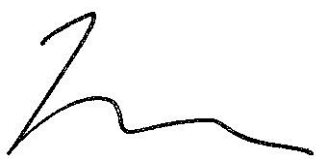
2.1 Any changes the Committee would like to see for their terms of reference need to be referred to Council for adoption.

2.2 Under the new standing orders, the quorum for the committee can be set by Council as long as it includes 1 elected member. At this stage the default position still applies of either (a) half of the members physically present, where the number of members (including vacancies) is even; or (b) a majority of the members physically present, where the number of members (including vacancies) is odd.

References (to or from other Committees)

Council – 22 November 2016 – Committee Structure

Signatories

	
Charlotte Knight Author	Fergus Power Approved by



WAIROA DISTRICT COUNCIL

PO Box 54, Wairoa – Telephone (06) 838-7309 – Facsimile (06) 838-8874

Terms of Reference: Economic Development Committee

Membership	<p>His Worship the Mayor (ex-officio) 2 councillors</p> <p>A representative of the Maori Standing Committee</p> <p>Member(s) of the Horizons Trust</p> <p>Other members as may be co-opted, as appropriate (e.g. tourism, education, digital)</p>
Meeting frequency	<p>Every 2 months and as required.</p>
Areas of activity	<ul style="list-style-type: none"> • Provide strategic oversight and direction to economic development in the district. • Management, monitoring and reporting to Council on the performance of Wairoa's economy and the coordination of the Economic Development Strategy. • Propose, support and review strategic projects and programmes to deliver on the Economic Development Strategy. • Facilitate partnerships and collaborative funding models to support economic development initiatives and across the arts, cultural and events sector. • Point of engagement for the Council with the government, businesses, business organisations, and local economic development agencies in relation to all economic policy and strategy matters. • Evaluate the balance of economic development policies, programmes and initiatives across the district and ensure an appropriate balance between rural and urban opportunities. • Engagement with Tangata Whenua as Kaitiaki with Mana Whenua status • Maintain the relationship with the sister city of Kitaibaraki.
Responsibilities	<p>The Committee will focus on: delivering sustainable long-term economic growth and increased employment; promoting the District's visitor attractions and tourism activities; delivering high-quality events; and supporting initiatives aimed at increasing the population of the District. Within the specified areas of activity the Committee is responsible for:</p> <ul style="list-style-type: none"> • In accordance with the work programme agreed with Council, developing strategy and policy to recommend to Council, including any agreed community consultation. • Acting as a community interface for consultation on relevant policies and as a forum for raising relevant community concerns, while ensuring community engagement is complementary to that undertaken by local

	<p>boards.</p> <ul style="list-style-type: none"> • Making decisions within delegated powers.
Delegations	<ul style="list-style-type: none"> • Power to co-opt other members as appropriate • All powers necessary to perform the Committee’s responsibilities <p>Except</p> <ol style="list-style-type: none"> a. Powers that the Council cannot legally delegate or has retained for itself b. Where the Committee’s responsibility is limited to making a recommendation only c. The approval of expenditure not contained within approved budgets d. Approval of expenditure of more than \$20,000 e. The approval of final policy f. Deciding significant matters for which there is high public interest and which are controversial g. The commissioning of reports on new policy where that policy programme of work has not been approved by the Council h. Power to establish subcommittees
Rules and Procedures	<ul style="list-style-type: none"> • Standing Orders apply. • The minutes of all Committee meetings will be submitted to Council. • The Committee will be serviced by the Governance Advisor & Policy Strategist. • The Committee will produce an annual report for submission to Council detailing the work undertaken by the Committee. • The Committee will be advised by the Chief Executive Officer, Economic Development Team, and other officers and advisors as necessary.

8.2 MAORI LAND DEVELOPMENT PROJECT

Author: Kitea Tipuna, Economic Development and Engagement Manager

Authoriser: Fergus Power, Chief Executive Officer

Appendices:

1. **Maori Land Development and Commercialisation Project** [↓](#)
2. **Submission for funding for a Project Manager** [↓](#)
3. **Submission for funding for a feasibility study** [↓](#)

1. PURPOSE

1.1 For the Economic Development Committee to consider the Māori Land Development and Commercialisation Project, which has been developed by Te Mātārae o Te Wairoa Trust (The Horizon's Trust).

RECOMMENDATION

The Economic Development and Engagement Manager RECOMMENDS that Committee

- a) Receive the report
- b) Advise of their preference regarding the Māori Land Development and Commercialisation Project

2. BACKGROUND

- 2.1 To assist Māori landowners to develop non-productive and under-producing Māori land (50,000 ha).
- 2.2 To promote best land-usage for the purpose of sustainable commercialisation.
- 2.3 Develop businesses with a focus on bio-diversity, mātauranga (retention of knowledge), and sustainability by Māori land-owners.
- 2.4 Create employment opportunities and on-the-job-training.
- 2.5 Improve community well-being.

3. OPTIONS

- 3.1 The options identified are:
 - a. Do nothing
 - b. Recommend to Council that it support the Māori Land Development and Commercialisation Project (that support being in principle and in kind).
 - c. Recommend to Council that it support the Māori Land Development and Commercialisation Project (that support being a financial contribution of \$10,000 to the project).

4. CORPORATE CONSIDERATIONS

Compliance with legislation and Council Policy

- 4.1 The Local Government Act 2002 Amendment Act 2014

- 4.2 The Local Government Official Information and Meetings Act 1987
- 4.3 The Privacy Act 1993
- 4.4 The Official Information Act 1982

Maori Standing Committee


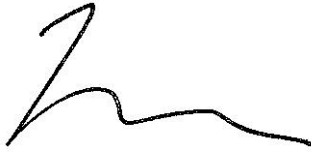
- 4.5 The Committee has been provided with a copy of the proposal and of this report.
- 4.6 Refer this report to the Committee for their consideration and input.

Confirmation of statutory compliance

In accordance with section 76 of the Local Government Act 2002, this report is approved as:

- a. containing sufficient information about the options and their benefits and costs, bearing in mind the significance of the decisions; and,
- b. is based on adequate knowledge about, and adequate consideration of, the views and preferences of affected and interested parties bearing in mind the significance of the decision.

Signatories

	
Kitea Tipuna Author	Fergus Power Approved by

Maori Land Development and Commercialisation Project



Project Objective:

1. To assist Maori landowners to develop non-productive and under-producing Maori land (50,000 ha).
2. To promote best land-usage for the purpose of sustainable commercialisation.
3. Develop businesses with a focus on bio-diversity, matauranga (retention of knowledge), and sustainability by Maori land-owners.
4. Create employment opportunities and on-the-job-training.
5. Improve community well-being.

Funding
\$120,000 p.a plus
administration
costs of \$1000
per month

Team/Stakeholders

1. Matariki Governance Team
2. Te Puni Kokiri
3. Maori Land Owners
4. Ministry of Business Innovation and Employment (MoBIE)
5. Te Matarae O Te Wairoa Economic Development Trust. (Wairoa Horizons Trust)

Start Date
1 March 2017

Expected Outcome:

1. Development of underutilised land.
2. Increased capability of Maori Land Owners and the formation of Management structures to enable the development to proceed with the correct governance.
3. Increase in jobs and opportunities for internships and on-the-job training.
4. Investment back into local business.
5. Start-up of new business with the right structure, commercial business plans and market validation.
6. Access to government support and funding.
7. Active database of the critical land information and development plans

Wairoa Horizon
Trustees:
Karen Burger
Richard Allen
Dean Whaanga

Reporting

- Monthly reporting to the Wairoa Horizons Trust.
- Quarterly reporting to Matariki Governance Board and MoBIE.

Contract Lead

To be appointed.

<p>Resourcing</p>	<p>There is the potential to improve productivity on approximately 50,000 ha of Maori-owned land in the Wairoa District. There is no singular organisation co-ordinating the potential development and commercialisation of this land Horizons Trust will play a pivotal role in the co-ordination of this project and delivering on the expected outcomes above.</p> <p>Year one resourcing requires: One full time Business Development Manager who will be responsible for:</p> <ul style="list-style-type: none"> • Developing a database of the 1783 parcels of Maori land, approximately 90,000 ha. • Supporting the development of the potential 1213 parcels to establish an appropriate management structure. • Work with Ministry of Business, Innovation and Employment organisations and Te Puni Kokiri, to allocate resources to development-ready land owners who have the right Management structure in place. • Where management is in place, support the development of a plan for the managed and un-managed blocks that are unproductive or under-utilised. • Stay connected to the management teams to review progress and assess additional support mechanisms that will assist with timely implementation of the development plans. • Report progress as above. 	<p>Resource and Strategic Partners</p>	<p>Ngati Kahungunu Wairoa Taiwhenua Ngati Pahuwera New Zealand Trade and Enterprise Te Puni Kokiri Ministry of Primary Industries New Zealand Food Innovation Network Export New Zealand Regional Business Partners Capability Voucher Scheme Massey University Lincoln University Waikato University Wairoa District Council Business Hawke's Bay</p>
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Please note: This Project Scope is supported by the information contained in the attached document: Background Information for Maori Land Development and Commercialisation Project as written by Richard Allen (Trustee).

SUBMISSION FOR FUNDING FOR A PROJECT MANAGER FOR TE MATARAE O TE WAIROA TRUST
MAORI LAND DEVELOPMENT PROJECT.

The Objective of the Project:

To assist Maori landowners to develop non-productive and under-producing Maori land. To promote best land-usage, profitability, bio-diversity, matauranga (retention of knowledge), and sustainability by Maori land-owners, leading to employment, job-training and increased community well-being.

The Purpose of this submission:

To source funding to engage a project manager to continue the progress already underway, and to accomplish the above objective.

The role of Te Matarae O Te Wairoa Economic Development Trust in relation to Maori Land Development:

- Te Matarae's role is to facilitate and to assist.
- We do not become involved in management of land blocks.
- We do not make decisions about how Maori land-owners use their land.
- We will provide assistance to Maori land-owners who wish to apply to the Maori Land Court to form authorised management structures.
- We will provide assistance to Maori land-owners who wish to engage with the Ministry for Primary Industries, Te Puni Kokiri, the Ministry of Business, Innovation and Employment, or other National, Regional or Local Government, or non-Government agencies.
- We will endeavour to provide access to business mentoring for Maori land-owners.
- We will seek out and appraise new opportunities and options for land-use.
- We will facilitate meetings between Maori land-owners and industry organisations.
- We will facilitate meetings between Maori land-owners and service providers.
- We will facilitate meetings between Maori land-owners and funding providers.

Guiding Principles:

- In terms of Maori land, we can only work with the willing.
- There are different levels of readiness and willingness amongst Maori land-owners.
- There is no one-size-fits-all solution. Each block has its individual *mauri* (vital essence), its own unique characteristics.
- Each group of owners has different dynamics, expectations and personalities.
- Each block that is moving forward has a *kaihautu* (person who takes the lead). That *kaihautu* needs to be identified and engaged to facilitate progress.
- Development of individual holdings leads to volume of production, which is the basis for establishment of a localised processing unit, further employment and job-training, and retention of benefits within the district.
- *Matauranga* "retention of traditional knowledge" is an under-pinning principle. Therefore projects which involve traditional methods (eg. rongoa, native plant nurseries) or traditional food sources (eg. fresh-water koura) will be highly regarded and thoroughly considered.
- We will build a detailed knowledge base of Maori land-owners and their holdings.
- We will endeavour to work with, and form strategic partnerships and alliances with organisations that have parallel objectives or can assist in attaining our objectives.

SUBMISSION FOR FUNDING FOR A PROJECT MANAGER FOR TE MATARAE O TE WAIROA TRUST
MAORI LAND DEVELOPMENT PROJECT.**Background Information:**

- In the Wairoa District there are 1783 parcels of Maori land, approximately 90,000 ha.
- The average size per block is 58 ha.
- Of those 1783 parcels, only 570 have management structures.
- Therefore 1213 do not have a management structure. 850 of these un-managed blocks are unproductive or under-utilised. Some blocks that have management structures are also non-productive or under-producing, or being utilised by parties other than the owners.
- Therefore, there is the potential to improve productivity on approximately 50,000 ha of Maori-owned land in the Wairoa District.
- Successful pilot models have already been established in the Raupunga area over the last three years, leading to conversion of gorse and blackberry-covered land into horticulturally productive units, and upscaling of previously under-producing land. This spring, 2016, approximately 250 ha of Maori land in Raupunga will be engaged in horticulture. Four years ago there was none.



1. May 2013 - Approx. 1 ha of Mohaka A50 covered in blackberry. 5 ha in pasture.



2. March 2014 - 5 ha. Of the same block planted in maize. Blackberry still there around edges.



3. June 2016 - The same aspect as in 1 above, with new riparian fences, 2000 native trees being planted along the waterway. Blackberry all gone.

SUBMISSION FOR FUNDING FOR A PROJECT MANAGER FOR TE MATARAE O TE WAIROA TRUST
MAORI LAND DEVELOPMENT PROJECT.

4. Nov 2016 - 5 ha of Mohaka A50 now planted in apples under a 15-year joint venture with Cedenco for pulping apples.

Agricultural crops already involved (or tried):

- Maize
- Peas
- Sweet corn
- Apples

Apples:

Discussions are well under-way with Pipfruitnz, MPI, and Business Hawkes Bay, and has involved representatives of the HB REDS, about developing a unique brand of high-end eating apple, grown in Wairoa for export, especially to the developing Asian market. This unique brand would carry an authentic Wairoa whakapapa that would be communicated in such a way to engage with other cultures. Traci Houppapa, on the Prime Minister's Trade Delegation to India said *"One of the key themes that is coming through all of the conversations that I'm having with Indian businessman and India industry leaders is the importance of culture and the connection between Māori and India. It's increasingly important for our government to start thinking about trade in terms of relationships with people."*

A whanau group has secured funding for a best land-use feasibility study, and have indicated that they will include apples in their study, and thus provide the framework for a joint-venture agreement. It is hoped this agreement can be produced to enable initial planting at Mill Pa during winter, 2017. The findings from this feasibility study can then be applied to other blocks. Pipfruitnz expects planted area to increase by about 1700 hectares by 2020, with most of the growth focused in Hawke's Bay. However, we know that land is scarce in HB and land suitable for apple-growing is leasing at \$5,000+ per hectare. A large percentage of that 1700 hectares could be in Wairoa.

SUBMISSION FOR FUNDING FOR A PROJECT MANAGER FOR TE MATARAE O TE WAIROA TRUST
MAORI LAND DEVELOPMENT PROJECT.

Discussions are on-going with Cedenco in Gisborne re their requirements for 2017/2018. They have indicated that they will be keen to expand on their existing activities in the Wairoa District.

Discussions have commenced with Wairoa Taiwhenua about defining the whakapapa and the tikanga around the mauri of the Wairoa-grown product. Once that whakapapa has been agreed upon, the next step would be to engage with someone like Ian Taylor to produce the graphics and develop the presentation.

Pipfruitnz are developing a Primary Growth Partnership (PGP), which is a government-industry initiative that will invest in significant programmes of research and innovation to boost the economic growth and sustainability of New Zealand's primary, forestry and food sectors. The PGP aims to:

- boost productivity, value and profitability in the primary sector
- deliver long-term economic growth and sustainability across primary industries, from producer to consumer
- encourage more private investment in research and development in New Zealand.

The PGP is an initiative that is aimed at helping primary industries to reach their maximum potential and to work towards goals like doubling the value of apple exports by 2025. A PGP involving uniquely-branded, Wairoa-produced, high-end apples for the overseas market could constitute a significant component of the national PGP initiative.

Also currently under consideration:

- Feijoas
- Limes
- Olives
- Avocados
- Macadamia nuts
- Fodder beet
- Lucerne
- Kiwifruit
- Kōura (fresh-water crayfish)



SUBMISSION FOR FUNDING FOR A PROJECT MANAGER FOR TE MATARAE O TE WAIROA TRUST
MAORI LAND DEVELOPMENT PROJECT.**Kōura: (see separate submission on kōura)**

MPI have funded a 3-year study for Earnslaw Forests in Otago to produce a best-practice aquaculture guide for farming of fresh-water crayfish. This study was completed this year and the report was released in July, 2016. Kōura farming is considered a unique opportunity for Maori land-owners to diversify by value-adding to their existing operations, or, alternatively as a stand-alone venture. Kōura farming provides an opportunity to create additional revenue without impacting on existing land use activities.

Other considerations:

- Matauranga – retention of traditional knowledge.
- Retention of traditional customary practices relating to koura.
- Sustainability of a traditional food source which is classified as “*At risk – declining*” by the New Zealand Threat Classification System.
- Kōura were once plentiful throughout the Wairoa District, and are still present in reduced numbers, so we know that local conditions can be favourable to kōura.
- Kōura are a feature of healthy waterways.
- Kōura farming is a clean/green operation, which has market appeal.
- Opportunity to be at the forefront in a developing, profitable, high-end niche market with untapped global potential.
- Opportunity to develop another unique brand of “*only grown in Wairoa*” product with its own whakapapa and marketing advantages.
- Opportunity to participate in a primary growth partnership agreement (PGP) in a developing industry.

Initial discussions have taken place, and a site visit has been undertaken to Otago in November, 2016 for further discussions, and to view Earnslaw’s operation.

Whanau groups, Rongomaiwahine, Te Whakaari Corporation and Anewa Corporation have indicated that they would be willing to take a lead role in applying to MPI for a feasibility study. There are a number of other interested parties who are willing to support Te Whakaari’s application.

Waikato University:

We have been fortunate to secure the services of a student from Waikato University who is undertaking a degree course and is actively working with Te Matarae O Te Wairoa, compiling data with the objective of identifying opportunities for a range of crops that have the potential for development of more intensive land use that could provide increased employment and income to the district. Climate monitoring equipment is being installed on a number of Maori land blocks and will be monitored over the next 12 months.

Potential specific objectives include:

- Investigating requirements for a range of crops including rongoa plants.
- Climate analysis
- Soil/water balance
- Developing crop suitability maps based on soil/land use capability analysis.

SUBMISSION FOR FUNDING FOR A PROJECT MANAGER FOR TE MATARAE O TE WAIROA TRUST
MAORI LAND DEVELOPMENT PROJECT.

To be considered (but not limited to):

- Fruits, berries, citrus, figs etc.
- Nuts
- Viticulture, biofuel crops, tea, hops, olives, ginseng, hemp.
- Fodder crops and baleage crops.
- Honey
- Rongoa (traditional medicine).
- Aquaponics. Aquaponics is defined as a combination of aquaculture (growing fish in tanks) and hydroponics (growing plants in water). The nutrient produced from the fish waste is used for growing plants and the plants help purify the water for the fish. Aquaponics may be able to be used in conjunction with kōura farming.

Alliances at Memorandum-of-Understanding Level:

- Wairoa Tai Whenua
- Wairoa District Council

Other Associations and potential Alliances:

- Ministry for Primary Industries
- Te Kahui Ōhanga o Takitimu. (Hawkes Bay Regional Economic Development Strategy and Action Plan.)
- Maori Land Court.
- Ministry of Business, Innovation and Employment.
- HB Regional Council
- Wairoa District Council
- Te Puni Kokiri.
- The proposed Maori Land Service. (Te Ture Whenua)
- Activate Tairāwhiti.
- Business Hawkes Bay.
- Lincoln University.
- Massey University.
- Waikato University.
- Pipfruit NZ.
- Cedenco Foods New Zealand.
- Ngāti Pahauwera Development Trust
- Tatau Tatau O Te Wairoa.
- Sharecroppers and other contractors.
- Te Tumu Paeroa.
- Others

Responsibilities of Project Manager:

1. Engage with Maori land-owners throughout Wairoa District to determine their aspirations, management status, and current productivity status of their land-blocks.
2. Encourage Maori land-owners to set up a management structure and become proactive and productive with their land.
3. Assist Maori land-owners to move to a point of readiness.
4. If necessary, assist Maori land-owners through the process of forming an authorised management structure, and assisting in their applications to the Maori Land Court.

SUBMISSION FOR FUNDING FOR A PROJECT MANAGER FOR TE MATARAE O TE WAIROA TRUST
MAORI LAND DEVELOPMENT PROJECT.

5. Direct Maori land-owners to appropriate Government agencies or Industry organisations, depending upon their aspirations and level of readiness.
6. Facilitate joint co-operative projects and applications where necessary.
7. Follow up on groups as in points 1 to 6 above, monitor progress and provide assistance where necessary.
8. Research and keep abreast of new development possibilities.
9. Keep detailed project records and statistics and report regularly to Te Matarae O Te Wairoa Economic Development Trust.
10. Develop project mapping.
11. Keep regular contact, and communicate with strategic alliance partners and other agencies.

Key Performance Indicators:

- Initial engagement with minimum 100 Maori land-owner groups in 12-month period.
- Demonstrated assistance to minimum 50 Maori land-owner groups in 12-month period, assisting them to a point of readiness to engage with funding agencies or industry groups and move into agricultural productivity or an enhanced level of agricultural productivity.
- If 50 Maori land-owner groups become productive or upgrade their productivity, this could translate to a productivity upgrade target of up to 2,500 hectares of Maori-owned land in the first 12 months.

Timeline:

This project is alive and moving now. The project manager is needed as soon as possible to take over the current workload from the Trustees of Te Matarae and move the project forward over the next 12 months. That is the short-term aim. The entire project could spread over the next few years and it is anticipated that once there is tangible evidence of agricultural activity, the community willingness to become engaged will move to another level. That has been our experience. When people see tractors and trucks operating, new fences, and crops growing, they want to know what is going on, and they want to be a part of the movement. Therefore we would like to see the door left open for re-negotiation of an extension and follow-up agreement towards the end of the first 12 months.

Funding required:

\$100,000 plus \$20,000 to cover bookkeeping, administration, travel/accommodation etc.

SUBMISSION FOR FEASIBILITY STUDY
INTRODUCTION TO KOURA (*Paranephrops planifrons*) FARMING



Juvenile kōura

Adding value to existing operations:

Following a three year research project, a best practice aquaculture guide for kōura (waikōura, keewai or freshwater crayfish) was completed in June 2016. It provides for all levels of kōura farming from the hobbyist and local community operations to commercial scale with a focus of using kōura as an additional revenue stream, adding bio-diversity to a farm operation, or as a start-up venture for under-producing or non-productive land.

The three year research project was begun in July 2013 with trials being undertaken by Ernslaw One, in Otago, in their southern forest ponds to develop 'practical solutions' for aspects such as pond design, refuge creation, stocking densities, male to female ratios, animal health management, and water quality requirements. Ernslaw One was looking at options to generate revenue in their forests between tree rotations (roughly 45 years). After some initial research, the decision was made to trial kōura, a project which sits alongside, but doesn't impact upon, existing forestry operations. Ernslaw One initially consulted with Ngai Tahu as part of gaining the necessary approvals and permits and latterly over the use of the name "*keewai*."

An important objective of the project was to reduce the time required to develop a kōura farm and therefore the time required to create a viable business. In addition, once viable kōura farms are in operation there will be an opportunity to establish a network of kōura farmers and, long term, a "kōura farmers' association", thereby providing for greater ability to share information and develop the industry. More kōura farms in operation equates to greater production, sharing of knowledge and resources, better consistency of supply, and the ability to develop markets,

While there is a fledgling kōura aquaculture industry in New Zealand; to date none of the licenced farmers are producing large volumes for sale. Kōura farming provides an

SUBMISSION FOR FEASIBILITY STUDY
INTRODUCTION TO KOURA (*Paranephrops planifrons*) FARMING

opportunity to create additional revenue without impacting on existing land use activities. There are hundreds of thousands of forestry fire ponds, existing farm irrigation dams or other similar water bodies across productive land which could be utilised to grow kōura.

Retention of matauranga (traditional knowledge) and traditional food source:

The native freshwater crayfish is an endangered species. Kōura were once very commonplace but due to the removal of riparian vegetation and the introduction of the predators such as trout, the kōura species is now classed as 'At risk – declining' by the New Zealand Threat Classification System. As they are found nowhere else in the world, there is even more reason to protect them. The Earnslaw project is a commercial venture, but there may be conservation benefits in the future as our forests could become kōura refuges. There may also be opportunities for stream restoration projects or reintroductions to areas where kōura have historically existed, but are now scarce or no longer present.

The ability to establish new farms will enable small kōura farms that will supply local communities and help to reinvigorate a traditional species, and retain traditional knowledge and customary practices related to kōura. For example - tau kōura are bundles of bracken fronds tied together then sunk to the river or lake bottom. The bundles make good homes for the kōura, who use them as hidey-holes during the daytime. They have been used traditionally to catch kōura, for example by Te Atiawa in the Rotorua lakes. The bracken bundle is left in a stream or lake for a few weeks, then brought up carefully with a net underneath to harvest the catch.

Additionally, the development of the kōura farming industry will provide opportunities to release kōura back into the wild enhancing natural populations. Kōura are a feature of healthy waterways and a traditional food source for Maori; an important component of customary fishing practices.

Free from disease – a unique advantage:

New Zealand is one of the few countries in the world with freshwater crayfish that do not carry the crayfish plague disease that has decimated populations in Europe; hence, there is also an opportunity for New Zealand to fill a space and supply overseas markets.

Sustainable Farming Fund:

The Sustainable Farming Fund (SFF) allowed in-depth research in freshwater crayfish habitat, and identify their preferences. As a result it has been possible to replicate this habitat type throughout ponds, learning how to best to farm kōura in an extensive aquaculture setting. A lot of time was spent diving in ponds looking at where kōura lived – and trying to work out why. It became readily apparent that kōura only lived in the riparian areas and the pond centres were largely uninhabited. This initiated a series of trials looking at different refuge types. Given the scale of the operation, it was necessary to find something plentiful, cheap and nearby, with a range of plant materials used (e.g. gorse and broom). Broom is now widely used as it is plentiful and has a longer life in the pond than other plant species – although all species trialled resulted in large increases in the biomass of kōura. Overall there is now a good understanding of what kōura need, and how to create habitat that yields greater biomass – but we are constantly learning and tweaking our operation to achieve better production. Another outcome from the SFF project will be the publication of a "How to farm crayfish" guide," released in June 2016. This handbook

SUBMISSION FOR FEASIBILITY STUDY
INTRODUCTION TO KOURA (*Paranephrops planifrons*) FARMING

provides an update on current information about kōura farming with sections on permits and biology. It will give those interested in kōura aquaculture a good level of understanding when starting out.

Size of current operation:

Currently Earnslaw has around 1,800 ponds (around 17ha of pond area) but long term there is potential for around 3,000 ponds.

Production lead time:

Generally, a pond is created and left for two years to “age” prior to stocking. Once stocked, harvesting of scalable kōura can commence in two to four years. Each pond is treated as a sustainable unit removing the larger kōura each year leaving the juveniles and berried females (those carrying eggs).

Natural resources:

There are approximately thirty thousand hectares of forest in the South Island and within these are areas where the trees won't grow, or can't be planted due to environmental or logistical reasons – but where kōura can be grown. Rain or springs supply the water so there are few issues around water quality since the forests generally encompass the headwater areas of catchments.

Favourable environment, food sources, prey and predators:

The preferred environment is deep, dark, water and a muddy or stony bottom with pond weed and dead vegetation, lots of hiding places and a temperature not exceeding 20degC. Adult kōura are negatively associated with trout and eel presence, suspended solids concentrations, and velocity of currents, and positively associated with wood cover, depth of water, and vegetation cover. The picturesque trees overhanging the ponds are a working part of the production unit. The distribution of kōura has reduced significantly due to the alteration of its natural environment; kōura are found at sites where there are weed beds and vegetation. Other studies have shown that native vegetation along a stream also helps.

Artificial food is not generally provided, although ponds are seeded with watercress and Carrex grasses which provide both a food source and refuge for the crayfish. Part of the marketing strategy is to emphasise a very clean healthy product with no artificial feeding – Nature provides everything they need. In wild populations, kōura will feed at every trophic level from filtering phytoplankton through to algae and rotting flesh. They also eat plant matter and insects. In the wild, kōura prey on juvenile fish and eels, but the larger fish and eels return the favour. Brown trout are also known to consume kōura. Other animals known to predate on kōura include stoats and ferrets, hedgehogs, rats, hawks, shags, kingfishers, mallard ducks, dragonfly larvae, and eels. Predation is an important consideration for any aquaculture venture and predator disturbance/control may be required to limit potential losses. Measures could include filters or grates on water intakes or a fence surrounding a pond (for eels, trout, galaxiids), regular disturbance for birds, (experience shows that after several disturbances shags tend not to return) and predator fences (for stoats and hedgehogs).

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Water quality:

Water quality is key to the success of kōura farming. While freshwater crayfish are able to tolerate a range in the water quality parameters, to get the best growth rates the water needs to be kept close to optimal conditions. In natural ponds, biological processes generally keep levels of harmful bacteria or nitrates within acceptable levels. However, once stocking rates are increased and/or artificial foods added, water quality needs to be monitored frequently.

Pond design:

Kōura are found in highest densities alongside bank areas, especially where there is cover. Therefore, any pond design should maximise these features. Rectangular-shaped ponds and/or those with islands in the middle provide the greatest bank area to total area ratio. Ponds that are 5 – 7 metres wide and between 1.0 and 1.2 metres deep are ideal for production and ease of management. If there is a readily available water source the ability to drain and rapidly refill ponds is an advantage for surveying and harvesting ponds. When designing the pond layout, it is important to allow for vehicle access (quad bike or 4WD) around all ponds to facilitate easier stock management.

Seed stock:

The sourcing of 'healthy' stock is of the utmost importance. Special permits, under s97 of the Fisheries Act 1966, can be obtained to collect wild stock but there are strict controls imposed to ensure harvesting is done sustainably. Alternately, stock may be obtained from current freshwater crayfish farms.

Processing facilities:

There is a purging/packing facility based at the AgResearch Invermay facility near Mosgiel. Food grade laboratories and space were available there and it was a relatively simple task to set up an approved food-safe facility for processing. The food safety requirements are quite stringent, from harvesting to packaging – and then there is the fish farm licence you need to get as well.

Currently the kōura are transported to the purging facility in large food grade chilli-bins. Twelve to 15 koura are needed for a 1kg order worth \$80 plus freight costs. They are packed into polystyrene boxes with a freezer pad, a sprinkling of water and a nest of ferns and other vegetation to protect and keep them apart. Air-freighted throughout New Zealand, they can live in a restaurant chiller for three weeks. Koura are sold mostly live, with farmers reportedly being offered up to US\$100 per kilogram from overseas buyers.

Yield:

The yield from a pond can be hard to predict as ponds of a similar size and location can have vastly different yields. In general, ponds with a shape that maximises riparian areas, along with the addition of large amounts of refuge, will increase harvest volumes. In semi-intensive farms, where races are stocked with kōura of a similar size class and where supplementary feeding is provided, yields of up to eight saleable kōura per square metre have been achieved (New Zealand Clearwater Crayfish Ltd). Based on these production figures, a pond with dimensions of 40m by 5m (200m²) could produce up to 1600 sale sized kōura annually, ie. 100 – 120 kgs pa, or \$10 - \$12,000 pa per pond.

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Future Development Opportunities:

Given the world focus on healthy and safe food, the export of a quality live kōura from a natural environment as a potential growth area. With this in mind, the Asia Pacific Centre for Food Integrity in New Zealand have been assisting in developing the food safety protocols to ensure they meet both New Zealand and overseas markets standards.



PRIMARY GROWTH PARTNERSHIP (PGP)

A Primary Growth Partnership has been developed and has been approved past stage 1. The invitation exists to engage with PSGE entities and iwi organisations, to take the PGP past stage 2. At least one Wairoa organisation needs to be represented. The success and sustainability of this kōura -farming project would be greatly enhanced through being a lead-participant in the PGP.

SITE VISIT:

Richard Allen (Te Matarae O Te Wairoa Economic Development Trust) and Tu Kahukiwa (Ngati Hineuru) will be travelling to Otago in the first week of March, 2017 to participate in the harvesting, purging, transport and marketing processes, and to gain further understandings of the production and breeding processes, pond placement and construction.

FEASIBILITY STUDY:

John Hollows has offered to come to Hawkes Bay in May 2017 to conduct site evaluations and prepare reports on site feasibility for kōura farming. He will be available for 6 x ½-day modules and 5 of those have been taken up.

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