

# AgResearch Early Career Group (ECG) Te Ara Paerangi Future Pathways Green Paper Submission

## Table of Contents

Introduction .....	1
Key Recommendations .....	2
Career Pathways .....	3
Commitment to honouring Te Tiriti o Waitangi .....	5
Funding .....	6
Organisations .....	8
Conclusion .....	9

## Introduction

The AgResearch Early Career Group (**ECG**) consists of researchers, support staff, and students of all levels, and encompasses anyone who is early in their career trajectory or considering a change in career path (100 members). The AgResearch ECG held an online Wānanga attended by 33 AgResearch staff and 18 early career researchers (**ECR**) from other Crown Research Institutes (**CRIs**) including Plant and Food, Scion, GNS, NIWA, Manaaki Whenua Landcare Research, ESR, and Cawthron Institute. The Wānanga was centred around four questions in the green paper (9, 14, 15, and 16), and the discussions from AgResearch staff and students have been summarised in four key themes, discussed below; we refer to the submission from the joint CRI early and mid-career researcher green paper response as a partner to this submission.

We represent a selection of different disciplines, home countries, and ethnicities, but we do not claim to speak for all early career staff at AgResearch or across the CRIs and we support all ECR submissions.

## Key Recommendations

### Career Pathways

- **Facilitate connectivity:** The new RSI sector should support:
  - Networking events and a structure for collaboration amongst early career staff.
  - Short-term placements (e.g., 3-6 month paid placements after students submit their PhD thesis).
  - Short-term sabbaticals and secondments to help facilitate highly skilled PhD graduates and ECRs into permanent roles in the NZ science system.
  - Establish formalised mentorship programmes (within CRIs or pan-CRI).
- **Empower early career staff through upskilling:** Equip early career staff with opportunities to improve 'soft skills' (e.g., professional writing, understanding important internal programmes, leadership, teamwork dynamics, and public speaking), which are required to become successful in CRIs.
- **Longer postdocs or fixed term contracts:** 1-year or less post doc/fixed term contracts are too short for ECRs to gain value and establish new networks.
- **Create a viable career path for all NZers:** Pay PhD students equivalent to the living wage and ensure the pathway is equally accessible for those from all socio-economic backgrounds.
- **Improve undergraduate student/CRI integration:** Integrate undergraduate students into CRIs through paid summer internships and 6-month to 1-year placements (e.g., part time work around university obligations).

### Te Tiriti

- **Strengthen pathways and pipelines for Māori into the RSI sector:**
  - Provide internship programmes, MSc, and PhD placements that are developed to suit the requirements of the student.
  - Develop and enable a wrap-around structure to provide holistic support.
  - Provide opportunities for Māori staff to engage with rangatahi and future Māori and Pacifica researchers.
- **Provide opportunities for education:** Targeted cultural competency training for early career staff.

### Funding

- **Inclusive criteria:** Consider oral submissions for some grant applications.
- **Improved transparency:** Provide detailed feedback on successful and unsuccessful grant applications.
- **Implementation of base funding:** Clear criteria need to be developed for the distribution and utilisation of base funding with a focus on the outcome. The outcome of base funding should be to reduce overheads to incentivise the creation of grants that cover research costs-only.

### Organisations

- **A clear career path within CRIs:** When employing post-doctoral researchers, organisations must be transparent about their future career opportunities and

pathways. This can be achieved through clear position descriptors and indicators of success for promotion.

- **Address issues of collaboration:** Invest in virtual collaboration software, creating searchable catalogues of our research projects that are available to everyone, Pan-CRI pools of funding for joint studentships, PhD and postdoc programmes and offering Pan-CRI symposiums and regular newsletters.
- **Standardisation across CRIs:**
  - Standardise the amount of parental leave and parental leave payments and fix issues with leave for those on fixed-term contracts.
  - Standardisation of the support structures for PhD students and early career staff who are based at CRIs (e.g., welcome packs, yearly feedback meetings, and independent mentors).
- **Agile working:** Provision of flexible work arrangements would enable a work-life balance and sustainable career pathways for the ECRs.
- **Establish 'hybrid roles' for early career staff:** E.g., roles that are 50% scientist + 50% Science Support (project management, science communication, funding co-ordination).

## Career Pathways

### Overview

A significant amount of time and investment is involved in establishing and building research capability. Early career staff bring vitality – bright, enthusiastic, diverse researchers who can focus on addressing in-depth research questions, challenge established thinking, and lead NZ science into the future. However, it is evident that the current framework for ECR is outdated, monocultural, and inadequate. More must be done to safeguard and strengthen career pathway opportunities. Government, CRIs, universities, and industry must support researchers to transition into stable careers within an aging workforce or they risk losing an entire generation of young researchers.

Currently, the number of PhD students far outweigh the number of postdoc positions or permanent science roles available at an institute level, there aren't enough jobs for career progression in NZ post-PhD. This may lead to a shortage of experienced researchers to train the next generation who will likely leave NZ to pursue opportunities that exist elsewhere. Precarious, fixed-term contracts, result in stress associated with finding permanent employment or seeking funding to retain employment and creates difficulties for those trying to plan for families, or make life decisions (e.g., home purchase). Many researchers put families on hold to pursue their careers or leave to start a family. **Clearer, transparent, and diverse career paths** with less job precarity within the NZ science structure would alleviate this.

### Diverse career pathways

We propose **'hybrid roles'** in a new flexible science system. Hybrid roles enable early career staff to contribute to, and gain experience in other relevant areas of an organisation, while still contributing to science output. This initiative would allow early career scientists or

postdocs to be hired in fixed-term or permanent roles as scientists at 0.5 FTE and a science support role at 0.5 FTE. In their scientist role, the ECR will build scientific knowledge and publish high-quality research in international peer-review journals. Science support roles will provide professional training opportunities for ECRs to gain exposure and knowledge of other crucial areas of the science system. This exposure may end up providing an alternative career path for our oversupply of PhD graduates in the NZ science system. Support roles include project management, professional bid writer, science communication, technician, funding co-ordination, or ethics committees. This initiative will ensure young researchers have a pathway to establishing successful research careers in New Zealand.

### Recognition of diverse skills

**We must ensure that staff without PhDs have opportunities for progression in the RSI sector.** MBIE should consider the work done by UK Research and Innovation (UKRI) on the Resume for Research and Innovation (<https://www.ukri.org/news/ukri-launches-new-resume-for-research-and-innovation>), where applicants can highlight a wider range of activities and contributions to the research sector in their resume. Some of our early career staff cannot publish their research due to IP rights therefore **valuing other aspects of science**, including soft skills, mentorship, committee involvement, community outreach, technical skills, and impact into industry will ensure that affected staff are not at such a disadvantage.

ECRs could be more heavily involved in tasks within the science system that are removed from work directly related to their own research project. Such tasks could include proposal writing, editing, minute taking, project management, entering project updates into systems. This could benefit ECRs by providing further opportunities to upskill in key skills while rewarding experience with “less admin and more time to do science!”. This concept was likened to the law system and law clerks.

### Agile working

We need **flexibility** in the way that we work. Science careers are long competitive career paths that need to be more family-friendly with flexible hours and places of work.

A **forward-thinking digital blueprint** should be implemented for the RSI sector. Continuity in digital across organisations will reduce barriers to collaborative data storage and sharing, this will require adequate education and upskilling. Development of an agile digital platform across the RSI sector is required to facilitate more flexible working options.

Some areas of science need immediate attention that cannot wait for funding rounds (e.g., COVID, *M. bovis*). We need the ability to dedicate time to address science pressures as they arise.

### Employment

Current **pathways** into permanent, non-academic research positions are not readily available to newly graduated PhDs as doctorate programmes do not adequately prepare

graduates for careers outside universities. Novel solutions involving **bold institutional change** are required to establish career pipelines for graduates.

Issues were raised around job security and the lack of stability (and funding) in the RSI sector. This can result in the loss of talent to other sectors that provide more certainty and security. High staff turnover is not sustainable and can affect project delivery. **Retaining high-quality early career staff** that can contribute to the company is vitally important for continuity of science. Retention issues may be improved by offering diverse career pathways, developing succession plans >5 years before key scientists/research associates retire, developing specific funds for ECRs and funding of overheads.

### Joint platforms

The RSI sector could consider a singular Human Resources/People & Culture platform. For example, at the University of California there are nine schools, but structural systems such as the HR platform are similar. This allows employees to move jobs and pursue career paths between schools within the system and retain things like leave, benefits, pension vestment. The positive impacts of such an initiative include opportunities for career growth, staff retention, capitalising on professional development and capability mapping.

## Commitment to honouring Te Tiriti o Waitangi

### Training

CRIs must continue to provide opportunities for all early career staff to develop **cultural competency** through lessons and workshops on Te Reo Māori, Te Ao Māori, tikanga, Te Tiriti o Waitangi and workshops that develop a general understanding and respect of Mātauranga. Cultural competency is essential to build opportunities to learn to engage with iwi, Māori collectives, and agribusinesses.

There is a need to look at the recruitment definitions and processes in CRIs from our Te Ao Māori lens. The recruitment process should also assess cultural competency of all candidates and ensure that training is built into the ongoing development of new employees who need to upskill.

### Māori early career staff

Early career staff who identify as Māori must not be expected to have a deep understanding of Te Ao Māori or fluency in Te Reo. Māori researchers may not wish to share their knowledge of tikanga or Mātauranga Māori with their colleagues/ organisations, this is their right and must be acknowledged and respected. In addition, some Māori researchers may wish to stay in their field of specialty rather than taking on a role as a Kaupapa Māori researcher and/ or additional roles/ opportunities (e.g., governance, engagement, or managerial roles) and this career path must also be support and recognised by organisations.

There is a notable lack of senior Māori staff in science, therefore, **junior staff need to be trained and mentored** to develop knowledge and confidence before being expected to fill this capability gap. This is a challenge as there are a limited number of senior Māori mentors to help guide junior Māori staff.

The RSI sector must develop and **support pathways for rangatahi** from **Te Kura Kaupapa** and secondary schools. This could be achieved through the following engagement opportunities:

- 1) Researchers speaking with students and communities.
- 2) Connecting with kura to run short experiments (in schools or in our labs).
- 3) Partnering with organisations such as House of Science (e.g., researchers taking 'science boxes' into schools).
- 4) Paid internship programmes (e.g., Kura aged students to spend 1-day a week for 4 weeks 'shadowing' a researcher).

Pathways that are developed must focus on the needs of the student over the needs of the organisation and be centred around the concept of **manaakitanga**.

### Vision Mātauranga

Māori was not a written language until the Europeans began to settle in Aotearoa New Zealand in the early 18th century when the need for a written language to facilitate interactions with Europeans grew. This raises questions about whether written proposals are the most appropriate way of including Mātauranga Māori in the RSI sector. To uphold our commitment to Te Tiriti and truly value Mātauranga Māori as an equal knowledge system, **oral presentations** and discussions should be included in decision criteria for funding mechanisms.

Queries arose around whether all research proposals should contain a Vision Mātauranga statement. VM statements cause a significant burden on already stretched Māori staff. Fitting VM to all projects risks tokenistic efforts. Resources could instead be focused on the development and implementation of true **Kaupapa Māori research programmes**.

Some researchers have experienced a lack of information on how to conduct research with Māori, including transparency around how these processes work and how decisions are made. Increased communication and education about research priorities is essential, especially with Māori-focused priorities, as they can be not well-connected. Further, those with short-term contracts likely do not have adequate time to generate meaningful relationships with Māori stakeholders.

## Funding

### Grant applications

Grant applications are time-consuming (both the internal pre-screening and external application processes) leading to less time for science. Other undesirable aspects of the current grant application process are that there is not always enough support from experienced colleagues, tedious administration, and overall loss of revenue through inefficiency. Whether an ECR can continue their career in science often depends on the success of their own grants, or they become dependent on the success of others in their team (i.e., no funding = no position). If unsuccessful **grant applications were returned with detailed feedback on areas for improvement**, then this may improve future grant application success.

International early career scientists are eligible for fewer grants in New Zealand, often struggle with costs associated with visas, and are not eligible for kiwi saver.

The grant application process could be improved by including **criteria other than publications and impact factors** (e.g., application of information, uptake of knowledge, benefits to NZ society, community engagement, and forming relationships). Greater focus on science outputs will create flexibility in what is funded and have greater benefits for NZ. Also, this allows for acknowledgment of different types of success from a range of levels over both the short and long term, rather than just large impactful publications on immediate issues. In addition, this aligns more with Māori values, treaty obligations, and allows for the development of more authentic relationships.

### Base grants

There was **general confusion** on what the base grant would cover, how it would be assessed, and how it would be divided. A base grant would ideally remove, or heavily reduce, overheads by covering salaries, administration, facilities, compliance, equipment, and services. This could increase job security leading to reduced stress for employees, retaining staff and their valuable knowledge, creating more longer-term career opportunities, making CRIs more competitive with companies that have minimal overheads, and free up time for more science, leading to better outputs from funded projects.

### Stakeholders

Applying for funding and understanding the different avenues is frustrating, time consuming, and confusing for stakeholders who wish to partner with a CRI. This process should be more streamlined, so fewer opportunities to partner are missed. Solutions to this could be a “go to” place for grants or allocations available for non-competitive funding. This would reduce time and effort in searching for applicable funds. Stakeholders who engage with CRIs often employ scientists and host their own PhD and MSc students; these companies could be more involved at the core science level with CRIs in the future.

### Contracting collaboration

There is a desire for greater efficiency in contracting. When we are all working together, contracting between/among CRIs and National Science Challenges can be simplified to reduce admin costs. This could mean consistent templates, fewer clauses, standard terminology, and an automated system/platform or contracting portal that meets all regulatory requirements. There are important aspects like IP to consider, but the process could be centralised and streamlined to make it more agile and less burdensome. Further, when funding and finances are involved, a singular platform for “internal” transfer of funds might be useful.

## Organisations

### Benefits of CRI merging

A full or partial merging of New Zealand's CRIs to create impact-focused organisations would increase access to equipment, resources, funding, talent, and information, with the aim to facilitate collaboration and to **reduce research costs, competition, and duplication of research**. Potential intellectual property issues between CRIs would be avoided by merging business units and we hope that researchers would have a greater ability to move between areas of research and teams. **A partial merger of some resources** such as administrative, finance, and legal teams by creating centralised administrative systems may allow for greater efficiency and collaboration, while maintaining the culture and identity of the CRIs. An overarching board would lead to smoother collaborations between what are now separate business entities (CRIs), potentially lowering overheads, allowing for better identification of gaps in the research sector, and allow for more equal opportunities for employees. A larger organisation may also have greater stability in funding and investment returns.

### Concerns and issues

**Combining all or some CRIs may harm the culture** within the various institutions (e.g., how we operate, values, supportiveness). The clearly outlined research space and values of each CRI may be lost following a restructure. If CRIs are to be combined, consideration must be given to maintaining the identity and culture of the original organisations. Merging the CRIs would negatively impact staff who often move between organisations to source pay rises and diversity of work. Competitive pay scales and personal development for employees must be protected. A large organisation may be less adaptable and resilient than several smaller ones and there is potential for the important healthy competition between the individual institutions to be lost. Finally, the **cost of restructuring and rebranding** the CRIs would be large and would likely cause **considerable disruption** to the work carried out within them and the lives of employees.

### Collaboration and multi-organisational science

**A unified system and simplified IP agreements** across CRIs and universities would remove barriers and competition and allow collaboration across organisations. Rather than by close organisational proximity or restructure, collaboration can be facilitated by providing avenues such as an **open database of staff members and research projects**, networking, workshops, shared supervisory responsibilities, shared funding and projects, **CRI newsletters**, and pan-CRI groups to provide accessibility to collaborate between organisations. Appropriate **training in collaboration, facilitation, and group working** should also be provided.

To increase skills in multidisciplinary and multi-organisational working, **joint science positions** should be encouraged between CRIs and external stakeholders for students and early- to mid-career researchers. This would also improve the dissemination of research into industry. More value must be placed on interdisciplinary, transdisciplinary, and collaborative teams in funding applications and emphasis must be placed on skill diversity in the teams addressing the **National Research Priorities**. Shared seminars and **secondments across**



**the RSI sector** should be encouraged to allow the development of multi-organisation skills and networks.

## Conclusion

The NZ science system has some well-known, long-standing, and systemic issues that affect early career staff. In this submission we have attempted to highlight some of these issues and present solutions to bring about positive change for the RSI system and wider communities within NZ. The AgResearch ECG is committed to working positively, enthusiastically, and constructively with MBIE and within our organisation to ensure generations of young researchers and other professionals can establish successful careers and contribute to the RSI sector in New Zealand.

Key contacts:

Name	Role	Email	LinkedIn profile
<b>Mallory Ross</b>	Scientist	Privacy - 9(2)(a)	<a href="https://www.linkedin.com/in/mallory-ross-52702382/">https://www.linkedin.com/in/mallory-ross-52702382/</a>
<b>Louise Hennessy</b>	Scientist	Privacy - 9(2)(a)	<a href="https://www.linkedin.com/in/louise-hennessy-b46bab141/">https://www.linkedin.com/in/louise-hennessy-b46bab141/</a>
<b>Melissa Hempstead</b>	Post-Doctoral Scientist	Privacy - 9(2)(a)	<a href="https://www.linkedin.com/in/melissa-hempstead-1423b6ba/">https://www.linkedin.com/in/melissa-hempstead-1423b6ba/</a>
<b>Aswathi Soni</b>	Scientist	Privacy - 9(2)(a)	<a href="https://www.linkedin.com/in/aswathisoni29111985">www.linkedin.com/in/aswathisoni29111985</a>

