



PSA submission on
**Research, Science and Innovation
Future Pathways | Te Ara Paerangi**
March 2022

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16 March 2022

About the PSA

The New Zealand Public Service Association Te Pūkenga Here Tikanga Mahi (the PSA) is the largest trade union in New Zealand with over 80,000 members. People join the PSA to negotiate their terms of employment collectively, to have a voice within their workplace, and to have an independent public voice on the quality of public and community services and how they're delivered.

We are a democratic and Te Tiriti O Waitangi responsive union representing people working in the public service (including departments, crown agents, other crown entities, and state-owned enterprises); local government; tertiary education institutions; and non-governmental organisations working in the health, social services and community sectors.

Te Rūnanga o Ngā Toa Āwhina represents and promotes the interests of our Māori members and are committed to honouring Te Tiriti o Waitangi across the public sector and inside the union. Our structures ensure a Māori perspective is heard in all levels of our organisation.

The PSA is affiliated to Te Kauae Kaimahi the New Zealand Council of Trade Unions, Public Services International and UniGlobal.

The PSA represents over 2,500 workers in the research, science and innovation system. This includes workers within the seven CRIs and other research organisations such as Callaghan Innovation, Met Service and Cawthron Institute. We also represent members in a wide range of organisations that interact with the research, science and innovation (RSI) system, for example in public service agencies and local authorities that both generate their own research and are end users of research outputs from the RSI system.

This submission

This submission was developed with input from the PSA's national science committee, which is an elected group representing PSA members in the seven Crown Research Institutes and Callaghan Innovation. As part of developing this submission we engaged with PSA members in the science sector through a survey, webinar and series of workshops.

This submission is informed by the PSA's values¹, strategic goals², and Ngā Kaupapa o Te Rūnanga o Ngā Toa Āwhina³.

¹ <https://www.psa.org.nz/about-us/about-the-psa/#psavalues>

² <https://www.psa.org.nz/about-us/about-the-psa/#goals>

³ <https://www.psa.org.nz/about-us/nga-kaupapa/>

All of the quotes in this paper were provided anonymously by PSA members through the engagement process.

The submission is organised around the chapters in the Green Paper, although we have not focused directly on all of the questions posed in the paper. Note that when discussing Crown Research Institutes (CRIs) specifically we have referred to them as such, and when discussing ideas that may apply to a wider range of organisations in the sector we have referred to them as RSI institutions.

Our comments are a starting point; we acknowledge in several cases we know what we want to achieve but may not yet know how to achieve it in practice. We look forward to continuing to engage with MBIE and ministers to further refine ideas in the future.

Overall response to the Green Paper

The PSA values the opportunity to submit on the content of the Future Pathways | Te Ara Paerangi Green Paper.

The PSA advocates for strong and sustained support for public and not-for-profit community services as the heart of creating a better Aotearoa. We believe that the most important function of our public research, science and innovation system should be to deliver public good research for the benefit of all New Zealand. Strong public and community services, informed by high-quality public good research, are essential to meet the major challenges facing Aotearoa today, including climate change.

Workers enter the science system because they are passionate about the work that they do. They want secure employment, with fair pay and conditions, organised in a way that enables them to focus on using their expertise to deliver high-quality research.

The Green Paper presents an opportunity to reshape the research, science and innovation system to focus more on delivering public good research, to plan more effectively about how to prioritise research for the benefit of Aotearoa, and to enable researchers to spend more of their time researching and less time chasing funding. It also provides an opportunity to better integrate the CRIs into the rest of the research, science and innovation system and in so doing better leverage the limited resource and capability available for maximum impact.

This requires a system that focuses less on competition over funding, and focuses more on providing funding that is stable for institutions and aligned more closely to our biggest research priorities. The PSA supports a shift away from competitive funding towards the types of funding proposed in the Green Paper: funding tied to national priorities, stable funding for core functions, and base grants that include a significant portion of staff salaries.

The PSA does not support the continued use of Crown companies as organisation forms for organisations within the RSI. Crown agent status would provide sufficient distance from Ministers and would better ensure the public interest principle at the heart of public science.

The future system should include a requirement for all organisations within the RSI system to collaborate on training and also to jointly develop regular whole of system workforce planning to make the best use of scarce and valuable skills. This should include integrated career pathways across the system and measures that support rather than discourage mobility – including common standards of pay and terms and conditions.

Summary of recommendations

Our recommendations are grouped in five key themes, with those related to mātauranga Māori and te ao Māori embedded within them. Each of the specific recommendations are expanded on in the Substantive Comments section below, as many of our recommendations overlap in multiple areas.

Research for the public good

- Ensure public good research is prioritised in the RSI system.
- Consider greater use of methods that enable the public to enjoy a share of the benefits (eg, profit-sharing, public ownership of intellectual property, and public shareholding of companies receiving funding) when funding is allocated to companies in the private sector.
- Move away from a funder/funded relationship with the public service, and towards a model where RSI institutions could contribute more directly to public service activities.
- Better integrate RSI institutions with chief science advisor roles in the public service.
- Improve alignment between MBIE and other government agencies that commission research work.

Organisational form and structure

- Make CRIs become Crown agents instead of Crown entity companies.
- Enable greater cooperation between RSI institutions on systems and functions such as communications, Human Resources, Government liaison, finance, payroll, data management, purchasing, iwi engagement, and people management.
- Move towards a leadership model where capabilities sought for RSI institution leadership roles are less aligned with commercial expertise and more aligned with science excellence and public good research.
- Encourage opportunities for ‘bottom-up’ initiatives for co-location of institutes and distributed working, but don’t impose co-location from the top down.
- Give preference or weighting for collaborative initiatives and approaches through the research bid process.

Setting national research priorities

- Principles to guide the selection of priorities should include: Impact on New Zealand, Treaty obligations, Uniqueness of the research, whether it is likely to be done elsewhere in the world, and quadruple bottom line.
- Ensure the process of setting national priorities involves Māori both at hapū and iwi level but also across the Māori science workforce.
- Ensure science advice feeds into the national priority-setting process in a way that’s transparent, to inform more values-based judgements at the political level.
- Include a ‘next level down’ process within the national priority-setting process, insulated from political involvement, to develop ‘sub-priorities and strategies for responding to priorities, that is based more heavily on expert technical input.
- Allow a level of local determination in national priority-setting should for iwi.
- Involve workers in institutions from across all levels in setting national research priorities and the delivery of pan-CRI integrated research programmes.

Funding

- Support and fund the public science system and its scientists to address national priorities with a reduced reliance on contestable funding models.
- Link funding to national research priorities as proposed in the Green Paper.
- Fund a significant proportion (ie, the majority) of staff salary resource from base grants.
- Provide stable funding for core functions, annually adjusted to keep ahead of increasing costs over time.
- Issue clear guidelines and communication of expectations on the use of core funding.
- Increase funding support to early career researchers beyond scholarships. The funding system decouples employment contracts from short-term contestable funding rounds.
- Decisions about funding priorities should incentivise projects in partnership with Māori that provide tangible benefits to Māori.
- Resource the RSI workforce resources (i.e. through FTE resources via base grants) for institutions to engage with Māori at the local level, including potentially regional outposts and/or co-location.
- Provide long-term, stable, secure funding for maintaining relationships with Māori through base grants.
- As part of implementing a system based around national research priorities, involve workers in the sector in a co-design process to design funding processes that are simple, effective and efficient.

Exemplar employer expectations

- Require RSI institutions to give effect to the Government Workforce Policy Statement on the Government's expectations for employment relations in the public sector.
- Create a consistent, transparent system of pay rates, pay systems and core terms and conditions, where pay is delinked from performance and rates are comparative to wider market relativities.
- Set an expectation for RSI institutions that the living wage will be a floor that all staff and contractors will be paid above.
- Embed strong mechanisms for industrial democracy and high engagement in RSI institutions.
- Require full effect to be given within RSI institutions to Kia Toipoto – the Public Service Action Plan to closing Gender, Māori, Pacific and Ethnic Pay Gaps 2021-24.

Career pathways

- Require RSI institutions to collaborate on training, and to jointly develop and own regular whole of system workforce planning that includes integrated career pathways and measures that support mobility.
- Make more use of secondments, joint appointments and sabbaticals to provide workers with opportunities to expand skillsets and explore opportunities to work in diverse fields.
- Update recruitment processes and assessment criteria for research jobs to give more appropriate weight to knowledge in Mātauranga and te ao Māori.
- Grow strong links between Te Puni Kōkiri, universities and the national priority-setting process to provide an informed basis for helping encourage Māori participation in STEM subjects.

Substantive comments

Research workforce

Job security/precarity

The current model provides an uneven degree of job security. While some workers in the sector have relatively secure work, others are subject to highly precarious working conditions that provide little certainty of ongoing employment. Precarity can affect all aspects of a worker's life, as it can impact on a worker's ability to plan for the future, obtain a mortgage or put down roots in their community. Work is particularly precarious for certain groups such as early-career researchers and seasonal workers.

Workers see fixed, short-term contracts used in RSI institutions as a way to avoid the risk associated with insecure funding, even when the work in a particular area may be intended to be long-term in its duration.

Even where the system provides a level of stability at an institutional level (eg, through the current SSIF system) a large degree of funding uncertainty exists within organisations as different projects compete for limited funding. Most CRIs have a limited amount of secure SSIF funding – approximately a third of total revenue. The remainder is drawn from contestable or commercial sources. For many workers, the responsibility to win funding rests on their own endeavours. This creates a huge amount of pressure on scientists as they seek to fight to secure their livelihoods and futures.

The nature of the contestable funding cycle brings additional stress. Funding opportunities (ie, MBIE Endeavour Fund rounds) are only available at specific times of year. If a scientist is unsuccessful in their bidding activity in any given year, they may face a lengthy period before they can apply again with all the inherent pressure and worry that brings.

Several CRIs operate systems that measure a scientist's value based on chargeable/billable hours – this further undermines job security, mana and career development. Many scientists in this position often regard themselves as individual contractors operating within the public science system. As a result, they take any work available to keep their role rather than building a science career that leads to impact and excellence.

“Job security for scientists: it unleashes creativity and reduces inefficient competition”

An RSI system that enables long-term strategic planning that is aligned to national priorities, and that allocates funding resources in an open and equitable way in alignment with that planning, would better enable institutions to provide long-term, stable and secure employment. The current competitive funding system doesn't allow for this. While more stable funding wouldn't entirely eliminate the need for fixed-term employment contracts, it would enable institutions to make better decisions about where a fixed-term or permanent arrangement is more appropriate. Greater security would create a workforce that is focussed on science impacts and not revenue generation; on excellence and not just surviving; and on collaboration and the development of world leading teams.

Recommendations:

- **Decouple employment contracts from short-term contestable funding rounds.**

- **Support and fund the public science system and its scientists to address national priorities with a reduced reliance on contestable funding models.**

Fair pay and conditions

Workers in CRIs are paid poorly compared with people doing similar work in other organisations. Anecdotally, we understand that disparity between CRI workers and university workers means that universities are able to second in CRI workers more cheaply than hiring researchers themselves. Workers in the science sector are also paid poorly compared to people in other industries that require similar levels of training.

By way of an example, “in 2003, a full-time Marsden Fund PhD stipend was approximately 25% above minimum wage; as of 2010, it was 5% above minimum wage. In 2021, it is approximately 20% below the minimum wage” and “the maximum Masters’ stipend amount for full-time work on a Marsden project is now functionally equivalent to the Jobseeker allowance”.⁴

The Royal Society found that “incomes and the job security of most PhD graduates who stay in New Zealand do not improve during the first decade after graduation; many go overseas seeking better prospects.”⁵

Pay and conditions also vary significantly between RSI institutions, with very little transparency over those differences. We believe research institutions should have fair, transparent pay systems where progression is either automatic or based on defined milestones, instead of subjective performance-based systems. We would expect to see the living wage as a bare minimum that all workers and contractors in RSI institutions (including those in post-doctoral and masters research) must be paid above.

Under a competitive funding model, increasing wages equates to more expensive research and less attractive bids. The competitive model incentivises commercial clients to choose the lowest cost researchers rather than the most qualified teams.

“Make us feel valued and appreciated. Pay us well. Give us job security.”

Ensuring consistent pay across institutions would remove the ability for any institution to gain a competitive advantage through low wages and would remove the incentive for a race to the bottom in terms of wages. Funding salaries (or at least a significant component of them) through base grants, core funding and/or through national priorities would also help avoid a race to the bottom. Any redesign of the research system is an opportunity to make pay and working conditions consistent and transparent.

Organisations in the public service are required to give effect to the Government Workforce Policy Statement which sets out the Government’s goal for the public sector to act as an exemplar employer. Some organisations in the RSI system are required to give effect to the policy statement (eg, Callaghan Innovation) but CRIs are only required to have regard to it. We believe this is an area where the Government should be able to influence CRIs more directly (noting, however, that the PSA also advocates for the removal of ‘pay restraint’ from the policy statement).

Union representation and strong mechanisms for industrial democracy are a particularly important way of ensuring workers in RSI institutions can have meaningful influence over their working

⁴ Open letter to the Marsden Council, [New Zealand Association of Scientists](#)

⁵ [The Research Workforce of Aotearoa New Zealand](#), Royal Society, 2020

conditions and the operation of their workplaces. Any reform of RSI institutions is an opportunity to embed worker participation into organisations, and that opportunity should be taken.

Recommendations:

- **Make research institutions subject to the Government Workforce Policy Statement on the Government's expectations for employment relations in the public sector.**
- **Standardise pay rates and pay systems across RSI institutions.**
- **Set an expectation for RSI institutions that the living wage will be a floor that all staff and contractors will be paid above.**
- **Embed strong mechanisms for industrial democracy in RSI institutions.**

Enabling workers to do more of the work they're employed to do

Workers enter the science system because they are passionate about making a contribution in their chosen field. However, many feel that they spend a large amount of their time engaged in activities that are more about funding (eg, writing bids) than carrying out research. This is an inefficient and unproductive use of a valuable resource, and doesn't align with the values that brought these workers into the science sector.

"There is a large degree of internal competition (within one CRI) due to the way the funding comes through. This does not promote excellence and collaboration, it actually detracts from achieving well. Instead of sharing people are guarded & resistant"

"Reduced competition, and base funding, so that scientists can spend their time doing science rather than applying for research funding."

Career pathways

The high level of focus on chargeable/billable hours in the commercial RSI model can mean that not all types of expertise are valued sufficiently. Demonstrating billable hours tends to be looked on more favourably than other types of high performance, and this means that some workers – especially early career researchers and those with cross-disciplinary and te ao Māori expertise – are looked at less favourably in terms of career development opportunities.

Members in technical/support areas have also told us that developing expertise in a specific area can sometimes be valued more highly by institutions than developing portable skills and flexibility to move around an organisation to provide support where it's needed. KPIs focused on specialism, and the undervaluing of flexibility in decisions on hiring and progression, mean that workers who play important support roles across an organisation are limited in their career development.

Perversely, experienced scientists with proven-track records but with a high cost allocation may be excluded from research programmes simply because they are deemed too expensive. This reduces mentoring opportunities and potentially overall science quality.

For scientists whose research rests within SSIF funded areas, it is easier to develop career pathways than for those who are primarily funded from contestable/commercial sources. That can create inequalities within institutions as well as between them. Clients, including even Government agencies, may not be willing to fund the publication of papers, instead preferring reports or other

outputs. An increased allocation of direct funding from Government would help to address this and support scientists in their career development.

Reform of the funding and institutional arrangements within the RSI system is an opportunity to address some of the barriers to good career pathways for workers.

Having common and transparent standards of pay, terms and conditions between institutions would improve the ability of workers to move between organisations as part of their career progression. When workers are able to move between organisations without a loss in their working conditions, and without any loss in their overall security (eg, redundancy provisions and recognition of service), they can have more opportunities for development and collaboration. This is especially important for technical and support roles, where people may have more scope to do similar work in another organisation than exists for highly specialised science research roles.

Making more use of secondments and joint appointments is another way to increase the amount of cross-organisational opportunities available, as well as making sabbaticals a normal and encouraged part of a researcher's career path. As part of this, institutions need to recognise that the issues in the RSI system can benefit from cross-disciplinary expertise.

Conversely, better alignment of pay and a transparent progression system will mean that workers can advance without feeling that moving to another organisation is the only way to do so. There should be more formalised mechanisms for progression within organisations based on defined competencies rather than funding outcomes, subjective assessments or waiting for the person above to leave.

There also needs to be more funding support for early career researchers to build their science careers and publication record. Too often early career scientists are put into contestable commercial funding environments which deny them the opportunity to publish papers unless they write them in their own time. These should not be based solely on scholarships, and should provide opportunities for researchers for whom a PhD or post-doc isn't the best option.

Recommendations:

- **Align pay and terms and conditions across institutions.**
- **Make more use of secondments, joint appointments and sabbaticals.**
- **Increase funding support to early career researchers beyond scholarships.**
- **Ensure a diverse range of skills are valued in progression systems within RSI institutions.**

Whole of system approach needed to workforce planning and capability

We are a small country and the RSI workforce is also small. A collaborative and whole of RSI system approach to workforce planning and growing capability makes most sense in this context. The future system should include a requirement for all organisations within the RSI system to collaborate on training and also to jointly develop and own regular whole of system workforce planning to make the best use of scarce and valuable skills. This should include integrated career pathways across the system and measures that support rather than discourage mobility – there is no room for competition in a system this small.

Recommendation: Require all RSI institutions to collaborate on training, and to jointly develop and own regular whole of system workforce planning that includes integrated career pathways and measures that support mobility.

Equity in RSI workplaces

Equity in RSI institutions was a common theme to emerge from PSA members in the sector. As the Green Paper rightly recognises, particular groups of people including women, Māori and Pacific peoples face higher barriers to entry and progression.

“Supporting the science and encouraging Woman in science to rise above support roles and into Scientist roles. Currently woman in science are heavily represented in technician roles but not given opportunities to rise into research”

The lack of diversity in the current Science industry suggests that much work is needed to ensure that more women, Māori and Pacific people are attracted to careers in science, and that workplaces are free from discrimination and bias and embrace cultural and gender diversity.

Members also tell us that ageism can act as a limiting factor in career progression, where workers can be ‘aged out’ of further opportunities for progression in favour of new employees.

Discriminatory outcomes in terms of pay and career progression undermine both the careers of many and the capability of the RSI system. They are also illegal. There is clear guidance available to organisations within the existing RSI system about how to make changes to ensure that they are meeting their legal obligations.

Gender Pay Principles⁶ were developed and agreed by a Working Group made up of unions, state sector agencies and Te Kawa Mataaho in 2018. These principles aim to ensure that working environments in the state sector are free from gender-based inequalities, that all employees are able to achieve their full potential regardless of their gender, and that gender pay gaps are eliminated.

The principles recognise the employment cycle begins before an employee takes up their job. It includes recruitment, remuneration, training and development, career progression, leave, flexible, and part time arrangements. It also includes periods in and out of the workforce. By addressing policies, decision-making and practice at each point, agencies can make a real difference.

With the recent expansion of Kia Toipoto – the Public Service Action Plan to closing Gender, Māori, Pacific and Ethnic Pay Gaps 2021-24⁷ to encompass Crown Entities (including CRIs) PSA expects that reforms for CRIs will not only give consideration for the Gender Pay Principles and Kia Toipoto, but also that they give full effect to these.

All organisations within the RSI system should be required to work with the PSA to develop and implement pay gap action plans to eliminate discriminatory pay and employment outcomes for women, Māori and Pacific workers and workers from other ethnic groups. There is no justification for organisations within the RSI system being excluded from this obligation. It is our experience that the only way to achieve highly functioning, diverse and enriched working environments is to engage with workers who understand both the nature of the work but also the barriers that need to be removed within the workplace.

One important precursor to improving equity in the workplace is pay transparency. Transparency of pay rates means that employers and workers can readily identify where pay is inequitable and work

⁶ <https://women.govt.nz/work-skills/income/gender-pay-gap/gender-pay-principles>

⁷ <https://www.publicservice.govt.nz/assets/SSC-Site-Assets/Workforce-and-Talent-Management/Kia-Toipoto-Public-Service-Pay-Gaps-Action-Plan-2021-24.pdf>

to address this. A common and transparent approach to rates of pay is needed across CRIs and the future RSI system.

Recommendations:

- **Require RSI institutions to give full effect given to Kia Toipoto – the Public Service Action Plan to closing Gender, Māori, Pacific and Ethnic Pay Gaps 2021-24.**
- **Establish common and transparent approach to rates of pay across RSI institutions.**

Supporting expertise in mātauranga Māori and engagement with Māori

Recognition for workers within the existing system focuses heavily on research outputs, papers published, and billable hours delivered. This focus doesn't necessarily recognise forms of expertise or achievement in areas relating to mātauranga or engagement with Māori. Western perception of what constitutes 'valid' science can mean that valuable experience gained by researchers in areas of mātauranga Māori, or partnering with Māori on research projects, isn't attractive to institutions when making decisions about hiring and progression.

The pay and progression system needs to specifically recognise people who are holders of, and develop, expertise in mātauranga Māori and in engagement with Māori on science. One way of achieving this would be for RSI institutions to shift away from remuneration systems based on subjective assessments of performance, and towards more transparent pay systems with standard, default progression steps based on progressive competency models. This could be accompanied by allowances built into Collective Employment Agreements to specifically recognise mātauranga, tikanga and te reo Māori knowledge, as is the case in many public sector organisations already. As noted elsewhere in this submission, we advocate for standardisation of pay, terms and conditions across institutions, so these two features should be included in such a standardised system.

“Resource and invest into all staff - and value and acknowledge specific staff who are holders and connectors of these pathways.”

Recognition needs to start occurring at the point of recruitment. Institutions largely determine how attractive a job applicant is based on western science measures such as post-graduate qualifications or publications. Māori staff are recruited based on western science knowledge then expected to learn mātauranga on the job, but rarely the other way round (hired based on te ao Māori knowledge and supported to gain western science qualifications on the job). Institutions need to value te ao Māori expertise in recruitment processes, informed by a specific strategy to promote this, or potentially by mechanisms such as bringing that expertise into recruitment panels.

This also needs to be backed up within the education system. We note Te Puni Kōkiri's four-year goal to increase the proportion of Māori that participate in tertiary education in Science Technology, Engineering and Mathematics (STEM) related subjects to 43.1%, (up from 30.5%),⁸ and Strong links between TPK, universities and the national priority-setting process in the RSI sector need to exist to provide an informed basis for helping encourage Māori participation in STEM subjects that fit with workforce needs.

The Green paper acknowledges the 'double shift' that Māori workers in the research sector are routinely expected to perform, carrying out the specific roles they were employed to do while

⁸ Ministry of Education, 2020, cited in [2020-2024 He Takunetanga Rautaki | Strategic Intentions, Te Puni Kōkiri](#)

simultaneously being expected to play a role akin to a cultural advisor when it comes to matters of Te Ao Māori, mātauranga, and engagement with specific iwi and hapū. One example of this is being made to assist with Vision Mātauranga statements in research bids for work they're not involved in.

Addressing this requires resourcing this type of work specifically through institutions' budgets, and hiring people within institutions to carry out this work. For work involving maintaining ongoing organisation-wide relationships at the iwi and hapū level, base grants for institutions may be the most appropriate place to resource this work. Maintaining capability and capacity in areas of mātauranga Māori could be considered a core function with stable, dedicated additional funding directed to it.

Recommendations:

- **Standardise pay progression systems across institutions, which move away from performance based pay systems toward defined progression steps, and which include specific recognition for te ao Māori knowledge in Collective Employment Agreements.**
- **Update recruitment processes and assessment criteria for research jobs to give more appropriate weight to knowledge in mātauranga and te ao Māori.**
- **Resource mātauranga and engagement with Māori with additional funding through base grants and/or core funding.**
- **Grow strong links between TPK, universities and the national priority-setting process to provide an informed basis for helping encourage Māori participation in STEM subjects.**

Te Tiriti, mātauranga and Māori research aspirations

In national priorities

Māori need to have a seat at the table as part of the process for developing and operationalising national research priorities, and as part of their ongoing monitoring and governance. National priorities should also be 'enabling' to ensure that at the iwi, hapū and marae level Māori can develop locally-specific priorities.

Recommendations:

- **The process of setting national priorities involves Māori.**
- **National priorities should allow for a level of local determination.**

In the operation of institutions

Our members have told us that Māori staff spend a lot of time and energy helping non-Māori researchers in their institutions, and the institutions as a whole, to build new relationships with Māori. However, these relationships are often transactional for specific projects, and are then abandoned once the project is over. This results in duplication of resources as relationships are re-established, undermines existing relationships, and fails to reflect a true Te Tiriti partnership. We believe there needs to be additional long-term, stable, secure funding for maintaining relationships with Māori, to ensure those relationships are enduring.

“Expectation on staff to understand what meaningful engagement looks like and undertake it, but also professional development to support this.”

Many iwi, hapū and whanau don't have the time and resources to meet with the raft of separate CRIs on a variety of separate issues. This is an issue that's not unique to the science sector, and resources for Māori to be able to effectively engage in government processes are needed across a range of disciplines. The siloed nature of the science sector doesn't fit with the holistic lens that a te ao Māori perspective brings to the natural environment. Iwi, hapū and whanau want to talk to RSI institutions collectively rather than individually, and the system doesn't meet this need well.

The desired outputs from an institutional point of view often don't align with what is of benefit to an iwi, hapū or whanau. Real partnership with Māori has to provide Māori with real benefits, such as tangible outcomes in their rohe, new technology they can use, or intellectual property they can benefit from in the future, instead of simply academic products like publication in scientific journals.

Twenty years of co-location drives have resulted in the science workforce exiting the regions. This has had a detrimental impact on researchers' ability to connect with marae and hapū throughout NZ. Prioritising regional outposts and time for partnerships will be required for truly meaningful relationships in the future.

Recommendations:

- **Provide long-term, stable, secure funding for maintaining relationships with Māori to form part of base grants to research institutions.**
- **Provide FTE resourcing for institutions to engage with Māori at the local level, including potentially regional outposts and/or co-location.**
- **In decisions about funding priorities, incentivise projects in partnership with Māori that provide tangible benefits to Māori.**

National research priorities

Principles to guide priority-setting

The PSA supports the idea of linking funding to national research priorities, provided the process for setting the priorities is robust and involves the appropriate people. National research priorities would guide science strategy to send clear signals to the research community over the long term while being flexible enough to adapt to changing needs. They could also help provide a long-term, strategic, cross-sector view of what capabilities are needed in the workforce.

Principles that could be used to determine the scope and focus of national research priorities

Principles that should inform priorities should be set in a RSI strategy and include:

- Impact on New Zealand
- Treaty obligations
- Uniqueness of the research
- Whether it is likely to be done elsewhere in the world
- Timeframe that change needs to be achieved
- A holistic approach that embraces social, cultural, environmental and economic impacts.

The process for setting national level priorities, and strategies to achieve them

Priority-setting at its highest level – the level of deciding what missions or problems warrant being prioritised above others – would be inherently values-based. There should be a strong role for elected representatives in the process at this level. However, the process needs to be informed by

high-quality and transparent scientific advice that enable those in political positions to make sound judgements about the scale and urgency of the relative risks and opportunities of pursuing particular priorities. Our RSI institutions should have a role in providing this advice, possibly through the input of lead scientists in particular areas, working collaboratively with public service organisations (eg, contributing to the advice of departmental chief science advisors). There should be mechanisms built into the system to ensure that the scientific advice provided, and the extent to which it has been taken on board, is transparent to the public. While the decisions may be political, the extent to which those decisions have listened to scientific expertise should be known to everyone.

Although priority-setting at this level is likely to be inherently political, we see value in insulating the process from the three-year political cycle as much as possible. This could potentially include a governance structure that is independent of government, or a priority-setting cycle that takes a longer than three-year view and is reviewed less frequently than three-yearly, to provide long-term stability overall. It's also at this more values-based level that wide public input would be most appropriate.

At the next level down – where priorities need to be decided at a more granular level, and/or strategy developed for responding to priorities – the views of independent technical experts, free from political direction, will be more important. This will help ensure decisions are depoliticised and based on the best scientific advice.

The priority-setting system needs to include checks and balances to ensure that research is not directed towards favourite research subjects within priorities or 'old boys' clubs' of researchers. There is some criticism of the National Science Challenges for prioritising the maintenance of capability rather than delivering impact.

Recommendations:

- **Link funding to national research priorities as proposed in the Green Paper.**
- **Ensure science advice feeds into the national priority-setting process in a way that's transparent, to inform more values-based judgements at the political level.**
- **Include a 'next level down' process within the national priority-setting process, insulated from political involvement, to develop 'sub-priorities and strategies for responding to priorities, that is based more heavily on expert technical input.**
- **Principles to guide the selection of priorities should include: impact on New Zealand, Te Tiriti obligations, uniqueness of the research, whether it is likely to be done elsewhere in the world, and a quadruple bottom line.**

The role of workers in setting national research priorities

We strongly believe that workers should be involved and/or represented in setting national research priorities. The PSA believes as a general principle across all public and community services, that workers and communities should be part of shaping services, including through longer term, wellbeing and Te Tiriti o Waitangi based approaches.

That could look different at different levels, as suggested above. At the higher, more political level it may be on a more representative basis (eg, through the input of key experts, and through union representation as a key stakeholder) At the strategy-setting stage, science workers in research institutions should have much more direct involvement, along with institutions, iwi, stakeholders and end users of the research.

Priority-setting should not happen simply within a CRI; it should include input from across CRIs and outside of the RSI system (eg, Māori, end users, the public service). It also needs to involve people from across the spectrum of workers – including diversity of gender, ethnicity, age, and career stage.

Institutions need to work together to align their funding to national priorities collectively to ensure greater collaboration between CRIs, the deployment of best teams and reduced overlap.

Recommendation: Involve workers in institutions from across all levels in setting national research priorities and the delivery of pan-CRI integrated research programmes.

Funding

Overall the feedback from PSA members was that they want a funding system that enables secure, fairly paid work, and allows them to spend their time contributing research instead of chasing funding.

Quantum of funding

Funding for the RSI system needs to increase overall, irrespective of what form the funding model takes. We support the reference in the Green Paper to raising funding in the science system to 2% of GDP by 2027 as a starting point, but note the OECD average is approximately 2.34%, and that small advanced economies such as Denmark, Switzerland, and Israel have rates above 3%.⁹ We believe that if we as a nation want high-quality research, we must be willing to pay for it. We also believe funding needs to be future-proofed by linking it to a suitable measure (eg, nominal GDP) to ensure it keeps up with changes in costs.

In the current model, static funding is used as an excuse for many system-wide failings, including stagnating pay for workers in science institutions. Over time, the expansion of organisations that can receive government research funding (eg, to private companies, and layers of public bodies such as the National Science Challenges) has meant that the insufficient amount of funding is spread increasingly thinly. At the same time, cost pressures for public service agencies has led to them attempting to rationalise the amount they spend on public good science through commercial contracts with research institutions.

Recommendation: Increase government funding to the RSI system, and index it to an appropriate measure to keep up with rising costs over time.

Funding for national research priorities

How well funding actually aligns to national research priorities will be one of the main determinants of whether the priorities will be successful. Workers in the RSI system right now feel that they spend too much research resource ‘chasing funding’. If the process of allocating funding is still inefficient, time-consuming and admin-heavy, the productivity gains from moving towards this approach won’t be realised to the same extent.

Workers in the sector are the people most familiar with the weaknesses of the existing funding system. They are the most appropriate people to be able to set out what an efficient and effective process looks like. Any shift in the way the funding system is organised should be accompanied by a co-design process that gives RSI workers real influence to design a system that works.

⁹ [Briefing for the Incoming Minister of Research, Science and Innovation, MBIE, 2020](#)

Recommendation: As part of implementing a system based around national research priorities, involve workers in the sector in a co-design process to design funding processes that are simple, effective and efficient.

Public good impact

We believe that too much focus is placed on short-term commercial returns, and we need to treat public good research as an investment even where its commercial benefits are limited.

“Stop pretending that CRIs should be businesses earning profit and accept that public good research is an investment not a cost.”

When making funding decisions on research investment for the public good, government should be considering who is benefiting from the research and what that should mean for the funding provided. Where funding is provided by the government for the economic benefit of Aotearoa, but that benefit is largely concentrated within specific private companies, we believe the government should make more use of mechanisms that give the public a share in the wealth generated (for example, through profit sharing, provisions around intellectual property ownership, or shareholdings in the companies that receive funding or publicly funded research outputs).

We need to rethink what ‘impact’ for Aotearoa means – whether it means benefit for privately owned New Zealand companies, or whether it means benefit to the public; and if the former, what benefit the public should expect to derive from state investment.

Recommendations:

- **Ensure public good research is prioritised in the RSI system.**
- **Consider greater use of methods that enable the public to enjoy a share of the benefits when funding is allocated to companies in the private sector.**

Core funding

We support the idea of dedicated funding being provided for core functions. We see this as an opportunity to provide greater stability in funding for functions that must continue to be done irrespective of national priorities changing. The transition to implement core funding would need to be planned and managed carefully to minimise disruption.

While core funding has the potential to provide greater stability, it will be important to ensure that the amount of funding increases commensurate or above inflation and is not static over time.

It will be important to ensure core funding is used for its intended purpose, and not to cross-subsidise commercial projects or make up for insufficient resourcing for national priorities. Clear guidelines and communication of expectations will be important to achieve this.

Recommendations:

- **Ensure core funding keeps pace with increasing costs over time.**
- **Provide clear guidelines and communication of expectations on the use of core funding.**

Base grant funding

We support the idea of a base grant for overhead costs. This should be applied widely, covering not only 'keeping the lights on' but also core infrastructure such as laboratory equipment, databases and publishing costs. We also believe a base grant should cover support costs for RSI institutions, and a significant proportion of researcher funding.

“Funding overheads out of contestable grants reduces our opportunities to do science. I have been excluded from proposals because I’m too expensive.”

Covering researcher salary, or at least a significant proportion of salary, and technical support staff salary through base costs would provide greater job security for workers. Base grants should also include funding for workers’ professional development costs, and a specific allocation for long-term engagement with iwi and hapū to maintain relationships.

Recommendation: Fund a significant proportion (ie, the majority) of staff salary resource through base grants.

Competitive funding

We acknowledge that competitive funding will still be appropriate in some circumstances, alongside funding tied to priorities, core functions and base grants. We believe that a degree of competitive funding would be most appropriate within rather than between priorities, to encourage a contest of ideas for innovative approaches to science while not trading national priorities off against each other. Competitive funding for ‘blue skies’ research may also be appropriate to enable the science community to respond to new opportunities.

Institutions

Improved collaboration and sharing of services

In general there were mixed views within PSA members about whether any structural change to the number and size of CRIs would be desirable. There was general agreement, however, that any changes to the number and size of CRIs are less important than the mechanisms that enable collaboration and reduce duplication between agencies.

We are strongly in favour of realising the potential for national benefit through deeper collaboration – and potentially more integration – between different CRIs, and between CRIs and universities.

Cooperating on some functions (eg, communications, HR, government liaison, finance, payroll, data management, purchasing, and some people management functions) would enable these jobs to add more value. We are not advocating for consolidation of these roles as a way of reducing overall staff in these areas; rather, we are advocating for the freeing up of capacity so they can undertake work that they are currently not sufficiently resourced to do.

Greater cooperation on Māori partnership processes would also reduce the need for Māori to engage with multiple CRIs and would meet aspirations for more holistic/integrated research.

The funding system (whether that be making decisions through a competitive process or a priority-setting exercise) should include incentives for collaborative initiatives and approaches, for example through the assessment of research bids.

Recommendations:

- **Enable cooperation between RSI institutions on functions such as communications, HR, government liaison, finance, payroll, data management, purchasing, iwi engagement, and some people management functions.**
- **Provide incentives for collaborative initiatives and approaches through the research bid process.**

Better integrating the functions within the public research, science and innovation system

Reforming the RSI sector provides an opportunity to reconsider the relationship between RSI institutions and wider government.

Currently, the CRIs as institutions sit outside of and are separated from much of the rest of the public research, science and innovation system. This is inefficient, creates unhelpful barriers to collaboration and reduces opportunities to leverage the small amount of resource and capability availability to maximum benefit.

We welcomed the creation of departmental science advisor roles and the role of the Prime Minister's chief science advisor. These roles have been widely recognised as improving the quality of policy and decision making, especially during the pandemic. The design of the future RSI system needs to better integrate each of the functions within that system, including these roles, and including the CRIs.

Right now a significant proportion of CRI funding comes from government agencies through commercial contracts. It means that although the purpose of the research is for the public good, the incentives for both the customer and the research institution are focused on commercial drivers. Government agencies are incentivised to choose the cheapest research rather than necessarily the most suitable, and funding decisions end up being heavily influenced by the policy priorities of the agencies that have the budget to pay, rather than through a strategic national process.

There could be scope to move away from a funder/funded relationship with the public service, and towards a model where CRIs could contribute more directly to public service activities. This could be through cutting out the middle-person and funding institutions directly from MBIE instead of via public service agencies. It could also be through the national priority-setting process, where research institutions and public service agencies are able to come together and jointly contribute to decisions about how the available funding is best spent.

At the very least, improved alignment between MBIE and other government agencies that commission research work is needed for setting and agreeing research priorities.

Science outcome, societal impact and expertise are invaluable for New Zealand and CRI's are in the unique position to provide long-term research with high-impact outcomes. There is a role for CRIs to become the database curators/custodians for the government system, especially as they pertain to regulatory and compliance issues where consents are granted to the enforcing body by the enforcing body.

Recommendations:

- **Better integrate RSI institutions with chief science advisor roles in the public service.**
- **Consider a move away from a funder/funded relationship with the public service, and towards a model where CRIs could contribute more directly to public service activities.**
- **Improve alignment between MBIE and other government agencies that commission research work.**

- **Investigate the suitability of CRIs becoming the database curators/custodians for the government system.**

Company status

The status of CRIs as companies forces a focus on the wrong drivers, with financial results prioritised over the quality and impact of research, and the pay and conditions of science workers. The PSA does not support the continued use of Crown companies as organisation forms for organisations within the RSI.

We are not aware of compelling evidence that the commercial focus of Crown companies enhances the delivery of science by the CRIs. We strongly recommend that the organisational form of entities within the RSI system is changed: Crown agent status would provide sufficient distance from Ministers and would better ensure the public interest principle at the heart of public science. Along with public interest, the principle of scientific integrity should be included as an operating principle of all organisations within the RSI.

The Crown Entity model is flexible and could accommodate a mandate that stresses public benefit through collaboration, while retaining incentives to secure revenue from other sources and maintaining the independence and objectivity of the science and research undertaken by CRIs.

“The cri legislation means the view of a CRI’s management is forced to be business and profit while the scientists and technicians are public good focused”

“The institutes were built on a business model, so all the [senior leadership team] are focused on business related science”

Recommendations:

- **Make RSI institutions Crown agents instead of Crown companies.**
- **Include the principle of scientific integrity as an operating principle of all organisations within the RSI.**

Leadership

Our members want to see leadership in their institutions focused on science excellence, innovation and workforce development. We believe that the company status of CRIs, and the competitive model of science delivery, provide the wrong focus for selecting the kinds of skills and experience research institutions need in their leadership.

“The current system favours business interests and financial managers.”

Research institutions need to move away from managerialism and a business-centred approach to leadership, and consequentially a change in the qualities sought in CEOs and executive leadership in institutions. Consideration could be given to reducing the number of management roles, or consolidating these roles across organisations.

Recommendations:

- **Move towards a leadership model where capabilities sought for RSI institution leadership roles are less aligned with commercial expertise and more aligned with science excellence and public good research.**
- **Consider consolidating management roles across institutions or reducing the number of these roles.**

Co-location

We don't believe that a top-down process of co-locating organisations is necessary to achieve improvements in collaboration, and being forced to choose between moving locations and moving jobs has the potential to disrupt workers' lives and the science sector as a whole for little gain.

However, the future needs of the research system may provide opportunities for, or even necessitate, a different geographic spread of workers. For example:

- responding to climate change will necessitate lower-impact methods of transporting people and equipment around the motu for field research, which may mean a more distributed workforce is preferable
- The types of environmental challenges we prioritise may mean a higher degree of field research that needs to be carried out in distributed locations, and/or a higher degree of computer modelling research that can be done in any location
- The importance of engaging with Māori may mean there is benefit in having research workers distributed closer to where specific iwi/hapū are based.

All of these factors mean that enabling workers to live more widely distributed, either working from home or co-locating with other organisations for reasons of convenience to the worker, are likely to become more important. In addition, we believe RSI institutions should be required to adopt the same kind of 'flexible by default' employment provisions as the public service.

In reality, our scientists need to be connected to global networks, to ensure that our science is at the forefront internationally. The facilitation of this must have a much higher priority within the future science system rather than any attempt to drive co-location domestically.

Recommendation: Encourage opportunities for 'bottom-up' initiatives for co-location and distributed working, but don't impose co-location from the top down.

Conclusion

We appreciate the opportunity to submit on the Green Paper. As noted at the beginning of our submission, these comments are only a starting point. There is still a long way to go in determining how the ideas in the Green Paper, and expressed in this submission, would work in practice. We look forward to continuing to engage with MBIE and with ministers on the future of the RSI system as this work progresses.

For further information about this submission, please contact:

Andrew McCauley
 Senior Advisor, Policy and Strategy
 New Zealand Public Service Association
 PO Box 3817, Wellington 6140
 Phone: 027 2712642
 Email: andrew.mccauley@psa.org.nz