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TITLE	Commercialisation of research from Public Research Organisations		
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PURPOSE	To describe the mechanisms that support the commercialisation of ideas generated by Public Research Organisations in New Zealand		

Commercialisation of research from Public Research Organisations

This background paper describes the various ways in which the Government supports the commercialisation of research from Public Research Organisations. It covers the direct support provided for the commercialisation of those organisations through the Commercialisation Partner Network (CPN) and Pre-Seed Accelerator Fund (PSAF), as well as indirect support for investment in deep-tech startups provided through the Technology Incubator programme and New Zealand Government Capital Partners (NZGCP).

Commercialisation of research is primarily the responsibility of the organisation that generated it

The intellectual property generated from research is owned – partly or wholly – by the Public Research Organisation (PRO) in which it was generated. As a result the responsibility for commercialising it rests primarily with the organisation itself.

Each of the PROs – both universities and Crown Research Institutes (CRIs) – has a commercialisation or "technology transfer" office (TTO) responsible for commercialising research created in the organisation. In most cases, university TTOs are not-for-profit subsidiaries of the PRO (eg, Auckland, Victoria, and Massey Universities) but in other cases (eg, Waikato, Canterbury, and Lincoln Universities) and for CRIs, the TTO is a division of the PRO itself.

Table 1 lists the PROs, with the names of the university TTOs in parentheses.

Table 1: Public Research Organisations operating in New Zealand

Universities (TTO)	Crown Research Institutes (CRIs) and other
University of Auckland (Auckland UniServices) Victoria University Wellington (Wellington UniVentures) University of Otago (Otago Innovation Ltd) Massey University (Massey Ventures) University of Canterbury AUT (AUT Ventures) Lincoln University / Lincoln Agritech University of Waikato (WaikatoLink)	Plant and Food Research AgResearch New Zealand Forest Research Institute (SCION) Manaaki Whenua / Landcare Research National Institute of Water and Atmospheric Research (NIWA) Institute of Geological and Nuclear Sciences (GNS) Institute of Environmental Science & Research (ESR) Callaghan Innovation*

Callaghan Innovation is a Crown entity (not a Crown Research Institute)

The funding for and size of the TTOs differs across organisations, from 0.8 to 18 FTE, with the average being around 8 FTE. Funding for the TTOs is usually allocated by the PRO's executive, and often depends on the executive's view of the strategic importance of commercialisation and/or the financial situation of the PRO as a whole. In some cases funding for the TTO is contingent on the TTO generating returns from its commercialisation activities.

Among New Zealand PROs, Auckland UniServices has generated the highest number of new start-up/spinout companies in recent years, followed by Wellington UniVentures and Massey Ventures.

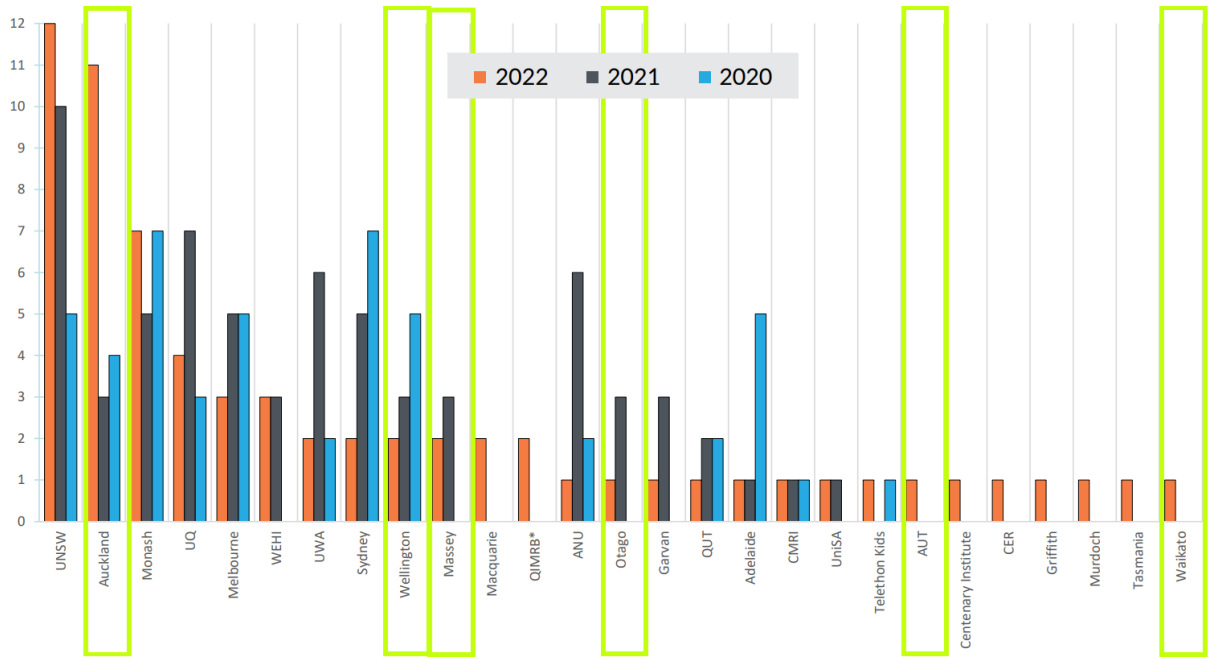

Figure 1: New start-up and spinout companies 2022-2020 from Australia and New Zealand, based on 11 NZ PROs surveyed (NZ entities highlighted). Source: Knowledge Commercialisation Australia (2022). Survey of Commercialisation Outcomes from Public Research

While not highlighted in the above figures, CRIs are also active in other avenues of research commercialisation. Plant and Food returned the second highest revenue from IP sale/license in NZ (after University of Auckland) at over $150 million for the 2021 and 2022 period. CRIs have also more actively spun-out companies in recent years, with examples such as 2before (sports and performance

nutrition, from Plant and Food) and Bspkl (a catalyst membrane for the hydrogen economy, from GNS).

The Government provides support to help PROs commercialise their research findings

To facilitate translation of research findings into commercial outcomes, the Government supports PROs to help prepare opportunities for private investment.

Through the **Commercialisation Partner Network** ($4.3 million per annum), the Government helps to build capability within PROs to turn science findings into commercially viable products and/or businesses. Currently the two CPN partners/providers are:

- Auckland UniServices Ltd (the TTO of the University of Auckland, contracted until July 2025 at $2.09 million per annum)
- Kiwi Innovation Network Ltd or "KiwiNet" (a collaboration between 18 universities, CRIs, and other research organisations, not including the University of Auckland, and contracted until July 2025 at $2.18 million per annum).

Both organisations use the funding provided by government to operate "investment committees" that provide researchers and staff from the TTO with advice on pathways to commercialise an opportunity and provide connections to international networks.[1] (In the case of Auckland UniServices, the investment committee operates under the name "Return On Science".) KiwiNet also runs programmes to develop capability within TTOs (such as the Emerging Innovator programme)[2], while Return On Science runs a set of student-led investment committees under the name of "Momentum" that focus on start-up ventures, particularly those originating from tertiary student- and staff-owned intellectual property and technologies.

In conjunction with the CPN, the Government operates the **Pre-Seed Accelerator Fund** ($9 million per annum). At present, four organisations – Auckland UniServices Ltd, KiwiNet, New Zealand Forest Research Institute Ltd (Scion), and Otago Innovation Limited[3] – receive "devolved" funding from PSAF, meaning they have the authority to allocate this funding on behalf of the Government. KiwiNet then distributes its funds to the PROs in its network (other than Scion and Otago). Figure 2 shows the recipients of PSAF funding during the four-year period from 2019/20-2022/23.

[1] In both cases, the investment committees provide advice to researchers across the public research system, regardless of the PRO from which they originate.

[2] KiwiNet's Emerging Innovator Programme provides funding and mentorship to enable scientists to build industry connections and demonstrate a proof-of-principle of a disruptive new invention. To be accepted into the programme, a scientist must demonstrate a clever new idea and a willingness to work closely with industry and/or commercial mentors as they develop a prototype.

[3] The current contract goes until July 2025.

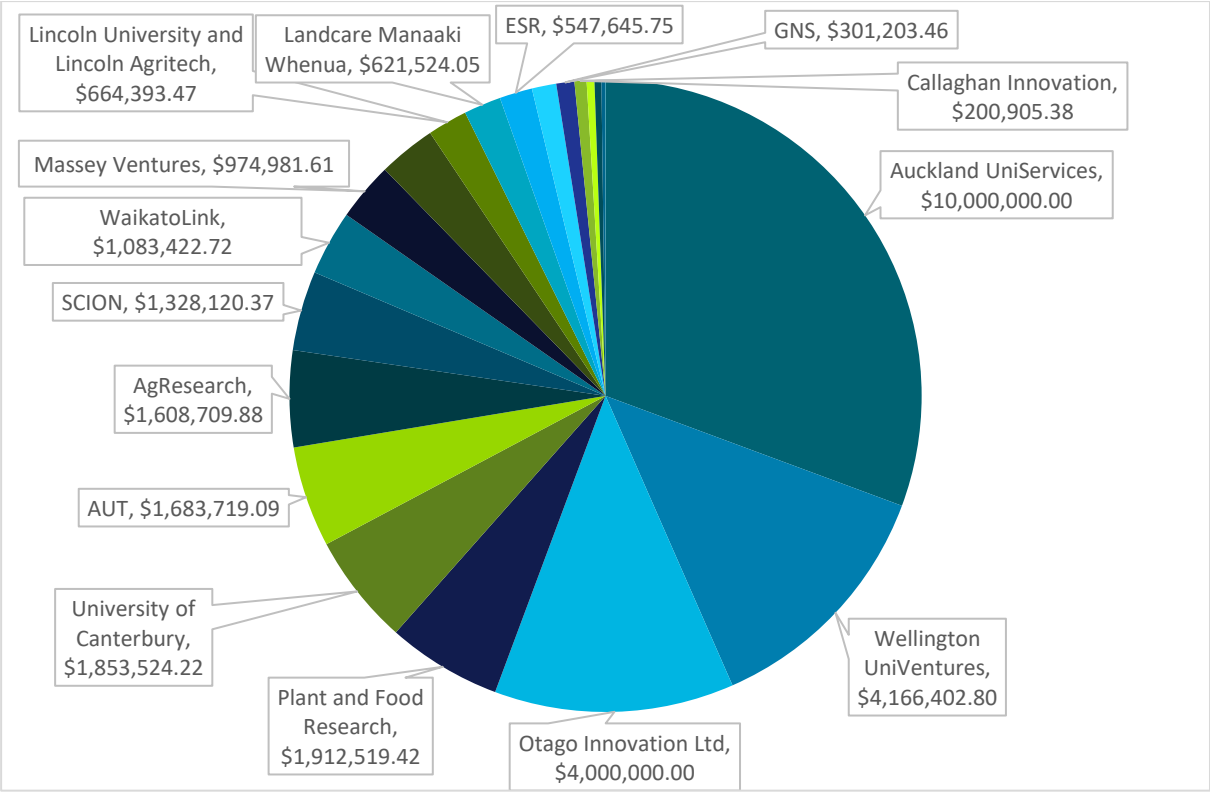

Figure 2: Pre-Seed Accelerator Fund funding distributed by PRO (2019/20-2022/23)[4]

The PSAF funding must be matched by equivalent funding from the TTO. TTOs automatically have access to $60k per project, conditional on the TTO providing matching funding. Funding beyond this threshold requires approval by an investment committee (either Return on Science or KiwiNet). The purpose of the funding is to advance a specific commercialisation project to "investor-ready" stage.

In terms of investments and outcomes:

- Between 2019/20 and 2022/23, 665 commercialisation projects received PSAF funding. In the same period 166 commercial deals and 52 spinouts were reported.
- Since inception of PSAF in 2003, KiwiNet reports 1586 projects in the pool received funding resulting in 558 commercial deals, 76 spinouts, 650+ jobs generated, and $464 million in known returns (including exports) to NZ businesses.
- Auckland UniServices invests in approximately ten new high-technology companies per annum, with new companies since 2019 having raised more than $800 million in capital. Auckland UniServices has an existing portfolio of 35 active companies valued at $41 million in 2023.

[4] A total of $32.625 million in PSAF funds were allocated during this period. This diagram does not show $0.959 million spent by KiwiNet directly (on administration of PSAF) and $0.713 million allocated to Cawthron, TiDA, Health Innovation Hub, and Malaghan Institute, which – despite not being universities or CRIs – are members of KiwiNet and are entitled receive PSAF funds because they are commercialising opportunities created from public funded research.

The Government provides concessionary loans and operational funding to support startups commercialising deeptech opportunities

Government supports startups in the commercialisation of deep technology given the nascent state of deeptech investment in New Zealand.

Advancing ideas beyond the "investor-ready" stage depends on private-sector investment. Out of the 52 spinouts incorporated by PROs in the 2019/20 to 2022/23 period, as at September 2023, 67% had raised external investment and 23% had received investment through the Technology Incubator programme (described below).[5]
'Deeptech' refers to technologies that represent a significant advancement, as opposed to smaller or incremental progress. Deep tech startups face particular challenges in commercialising complex, difficult to replicate IP typically (but not exclusively) developed in public research organisations:

- Access to risk capital: Start-ups commercialising complex IP are often capital intensive, requiring substantial up-front investment to develop their product and business. This differs from ICT, and Creative and Services start-ups that can require little initial funding for commencing operations.
- Entrepreneurial capability: Complex IP based start-ups are a growing New Zealand strength, but our track record is still limited. Consequently, the specialist entrepreneurial and management skills required to successfully establish these start-ups are in short supply.

Technology Incubator Programme

The Government (through Callaghan Innovation) in 2014 established the **Technology Incubator programme** (with total funding of approx. $15m per annum). The aim of the programme is to crowd-in private investment in deeptech opportunities and to help develop the capability to support these investments in New Zealand.

Callaghan Innovation provides operational funding (up to a total of $3m per annum) to a set of technology incubators to identify deeptech opportunities and develop them into startup ventures. It also gives the incubators access to:

- pre-incubation grants of up to $35k per opportunity to assess opportunities for investment
- "repayable grants" (ie, loans with concessionary terms) of $750k to invest in a new venture.

The four incubators at present are Brandon Capital Partners, Bridgewest Ventures NZ, Sprout Agritech, and WNT Ventures.

Since its inception in 2014, the Tech Incubator programme has supported 81 deep-tech startups, with the majority spun out of PROs. Under the terms of the programme, the public investment (ie, repayable grant) must be matched 3:1 with private co-funding (ie, $750k repayable grant be matched by at least $250k private investment). Figure 3 shows the amount of public and private investment in ventures developed through the Technology Incubator programme, as well as the number of ventures invested in in each year.

[5] Either in full or in partnership with other investors.

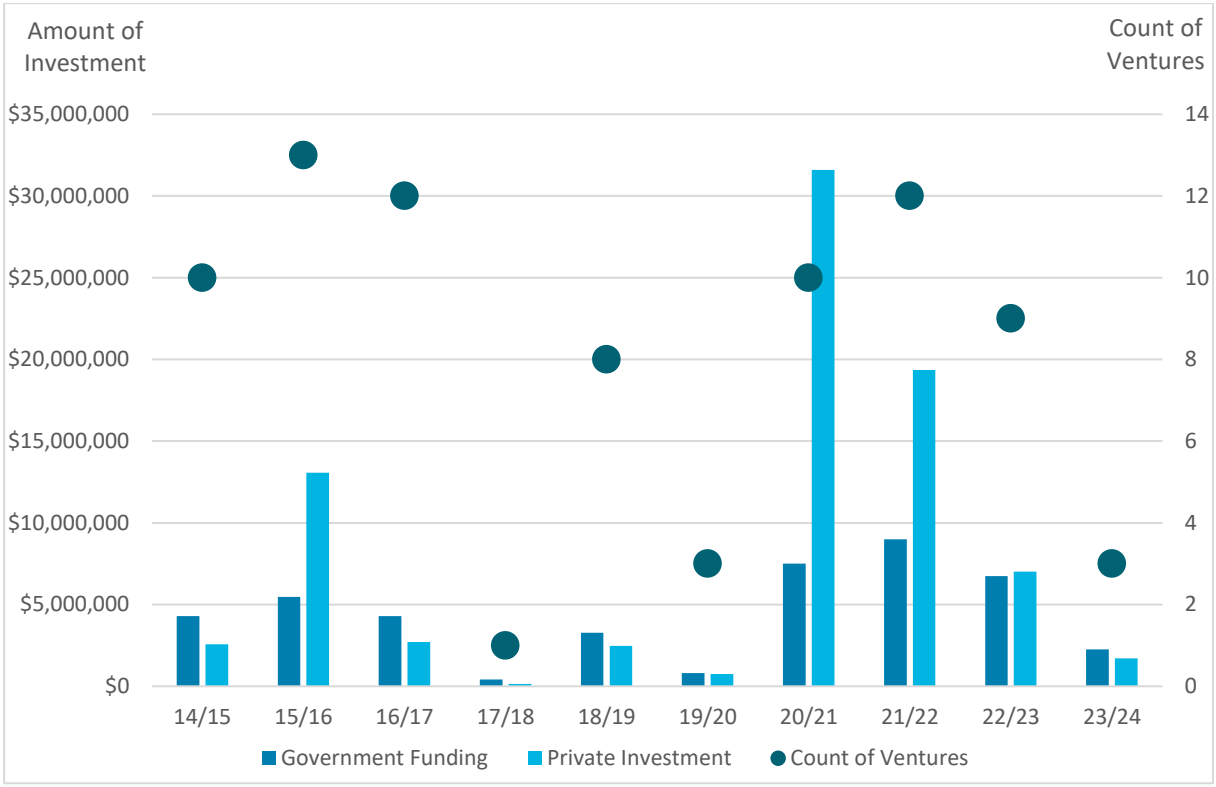

Figure 3: Investment in deep-tech startups through Technology Incubator programme (2014-2024)

Most incubators, both in New Zealand and internationally, fit broadly into two different models: founder-focused incubators and technology-focused incubators.

- For technology-focussed incubation, the Technology Incubator Programme targets technologies with complex intellectual property that face lengthy, less certain pathways to market.
- For founder-focused incubation, the Government (through Callaghan Innovation) runs the Founder and Startup Support Programme. This programme builds founder skills, connects startups to mentors and investors, and encourages people to become entrepreneurs, mentors and angel investors.[6]

The Government also invests in startups through NZGCP, some of which are spun out of PROs

The government-owned investment company, **New Zealand Growth Capital Partners,** operates the **Aspire NZ Fund** ($150 million in capital), which invests directly into tech companies from "Proof of concept" through to "Series A" funding rounds to help provide a more liquid capital market, and the **Elevate NZ Fund** ($300 million in capital), which invests into venture-capital funds, which in turn invest into high-growth New Zealand tech companies. On the direction of the Minister of Economic Development, some of these funds are specifically targeted towards investments in "deep-tech" to help encourage innovation in this area.[7]

[6] The Founder and Startup Support programme is funded at $2.86 million per annum, with this level of funding largely unchanged since FY2016/17.

[7] We do not currently have data on PRO spinouts that have received investment from NZGCP.