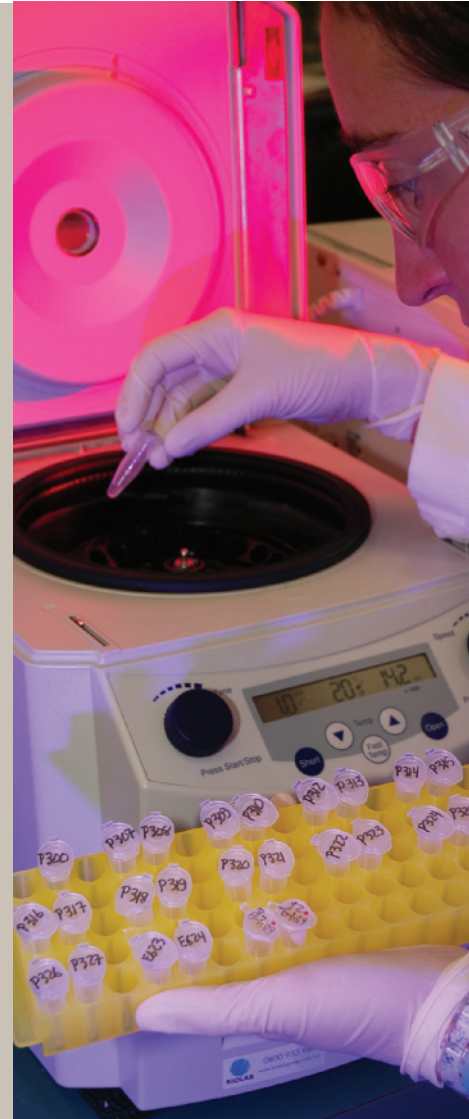Performance audit report

Workforce planning in Crown Research Institutes

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Photo by Kate Whitley, GNS Science

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Auditor-General's overview

Public organisations should be considering their workforce needs as a matter of good management practice. Planning an organisation's workforce in a structured and co-ordinated way can help achieve effective and efficient outcomes. Workforce planning encourages organisations to understand the mix of skills and knowledge held by their staff – collectively and individually. This enables organisations to identify whether they need to change that mix of skills and knowledge to support the delivery of their goals. It allows an organisation to adapt effectively when strategic business needs change, and can help identify the staff with organisational knowledge that needs to be retained.

Knowing the current and foreseeable workforce needs allows an organisation to establish recruitment and retention strategies to attract and retain staff with the right mix of skills and knowledge at the right time.

Crown Research Institutes (CRIs) are the largest providers of scientific research in New Zealand. Their staff have a diverse range of research, science, and technology skills and have an important role in enhancing economic growth and environmental well-being. CRIs' ability to deliver research, science, and technology products depends on attracting and retaining people with the necessary skills and knowledge. Competition for science skills, changing workforce demographics, and tight labour markets pose a risk to CRIs' ability to attract and retain staff, and therefore to scientific research in New Zealand.

My staff carried out a performance audit of the workforce planning within all nine CRIs. The audit focused on how CRIs identify their workforce needs, establish initiatives to address their needs, and monitor and evaluate those initiatives.

Overall, my staff found that all the CRIs had established, or were establishing, appropriate systems to support effective workforce planning. I was pleased that all the CRIs were considering how workforce planning could support their capability management more effectively. However, the maturity of workforce planning differed between the CRIs.

Two CRIs had comprehensive and established systems to support effective workforce planning. They were analysing their workforce needs and using this analysis to inform their training, recruitment, and retention initiatives. They were monitoring and evaluating progress so that they could modify existing initiatives or create new ones as their needs changed.

Five CRIs were developing their workforce planning. These CRIs were embedding workforce planning systems in their organisations, collecting and analysing data about their staff, and carrying out some monitoring and measuring of progress.

Two CRIs were in the early stages of carrying out their workforce planning. These CRIs had systems for gathering data about their workforce, but their ability to use this information was limited by incomplete data or a lack of capacity to analyse the data. The problems with data quality meant it was more difficult for these CRIs to have a comprehensive view of their workforce needs and, therefore, to create initiatives to address those needs. However, these CRIs recognised that their staffing challenges required a more strategic approach and were establishing systems and initiatives to support this.

Workforce planning is a long-term process. It can take several attempts to set up the systems and strategies that enable an organisation to effectively manage its mix of staff skills and knowledge. Because of this, it is unsurprising that some CRIs have established workforce planning systems while others have not.

Attracting and retaining a skilled workforce was a concern for CRIs. Each CRI linked its delivery of research, science, and technology products to its ability to attract and retain skilled staff. CRIs were facing similar challenges in attracting and retaining suitably qualified and experienced researchers, scientists, and technicians. These challenges included skill shortages in some science disciplines, competition for science skills locally and internationally, and difficulties in providing competitive pay.

While funding was outside the scope of our audit, CRI staff repeatedly raised the topic in discussions with my staff. Many CRIs considered that funding uncertainties affect their ability to plan their workforce effectively. They commented that short-term funding priorities for science programmes can change, which makes it harder to plan longer-term capability. Science skills are often so specialised that scientists cannot easily be reassigned to other programmes if a funding bid is unsuccessful. When funding is lost, it can be difficult for CRIs to maintain their capability unless they have internal resources to support a science programme and retain skills for this. In spite of these challenges, some CRIs were using workforce planning to help position themselves to adapt effectively to changes in their environment.

I do not have a prescriptive view of systems and strategies that organisations should use to ensure that they have a workforce with the right mix of skills and knowledge. However, I consider that well co-ordinated workforce planning can help CRIs to manage their workforce effectively, given the challenges they face in attracting and retaining staff.

My staff wrote to each CRI, describing its performance against our audit expectations and setting out any areas where it needs to improve. The CRIs

responded positively to this report and suggestions for improvement. Many have signalled that they intend to continue developing and improving their workforce planning systems and, in doing so, will seek and share ideas with other CRIs.

I thank the staff of the CRIs for their assistance in providing information for this audit.

K B Brady
Controller and Auditor-General

4 May 2009

Part 1
About our audit

1.1 In this Part, we discuss:

- the purpose of our audit;
- our audit expectations;
- how we carried out the audit; and
- what we did not audit.

The purpose of our audit

1.2 Crown Research Institutes (CRIs) are the largest providers of science research in New Zealand and play an important role in enhancing economic growth and environmental well-being. As at 30 June 2008, CRIs were responsible for $669.2 million of assets and generated $642.7 million in revenue annually. Collectively, CRIs employed more than 4000 staff. About 3500 of these staff were employed in science or research roles.

1.3 The ability to attract and retain staff – especially researchers, scientists, and technicians – is critically important for CRIs. Changing staff demographics, shortages of skilled workers, and increased globalisation in the labour market are creating a tight labour market. Given this environment, CRIs are facing staffing challenges that could affect the sustainability of their work.[1]

1.4 We carried out a performance audit to examine how the CRIs were planning their workforces to manage their capability. The CRIs are listed in Figure 2 at the end of this Part.

Our audit expectations

1.5 We expected the CRIs to:

- have identified their workforce needs, given their strategic goals;
- be establishing workforce initiatives to train, recruit, or retain employees, to ensure that the CRIs have staff with the required skills and knowledge; and
- monitor and evaluate workforce planning activities to ensure that they were effective in supporting the CRI's purpose and goals.

1.6 We based our audit expectations on the main elements of an effective workforce planning process – identifying workforce needs, taking steps to train, recruit, or retain staff with the necessary skills and knowledge, and monitoring and evaluating the effectiveness of those training, recruitment, or retention activities. Figure 1 shows the relationship between our audit expectations and the elements of a workforce planning process.

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1 Workforce challenges are not unique to CRIs. In 2008, the Ministry of Science, Research and Technology published *An advanced skills action plan for Research, Science and Technology*. The plan outlines a series of actions and initiatives for attracting, developing and retaining staff in the research, science, and technology sector.

Figure 1
A workforce planning process
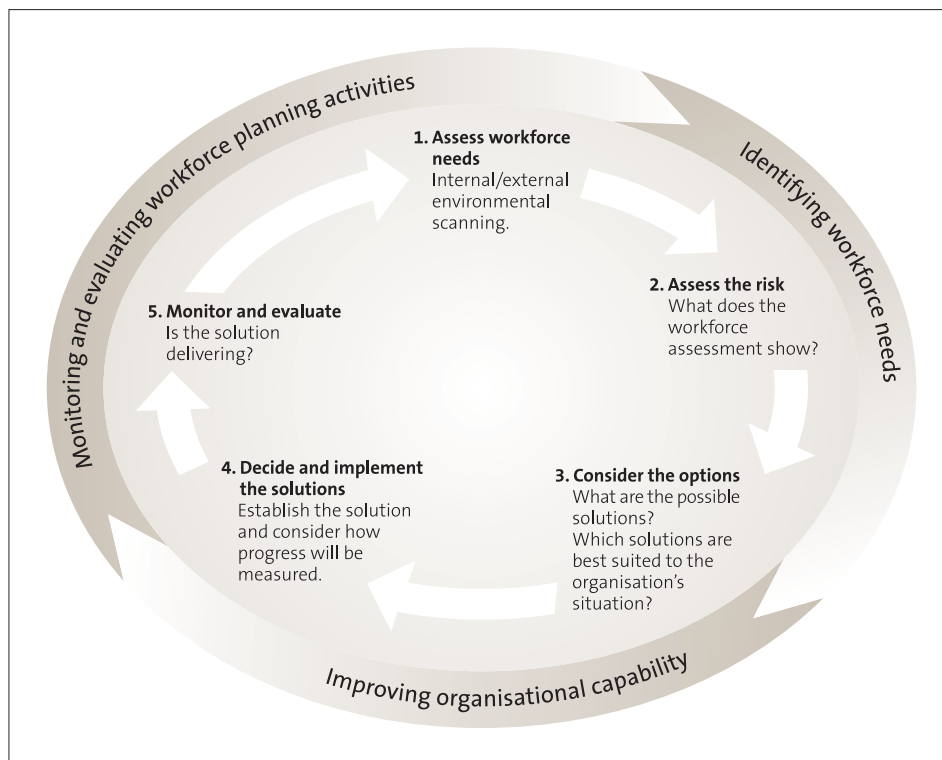
1.7   Workforce planning is a continuous process of shaping the workforce to ensure that it is capable of reaching organisational goals now and in the future.[2] It involves identifying the type of workforce needed and considering how this might alter as organisational priorities change or external factors affect the supply of workers. It includes establishing short- and long-term recruitment and retention strategies to get the desired workforce in place. The workforce planning process should include periodic evaluation to ensure that planning activities are effective and can be modified as needs change. Appendix 1 has more general information on workforce planning.

How we carried out the audit

1.8   In preparing our audit expectations, we considered the following audit reports and good practice guides:

- *Workforce planning* (2005), and *Planning for the workforce of the future: a better practice guide for managers* (2001), both from the Australian National Audit Office; and

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2   Australian National Audit Office (2001), *Planning for the workforce of the future: a better practice guide for managers*.

- *Human capital: a self-assessment checklist for agency leaders* (2000), from the United States of America's Government Accountability Office (formerly the General Accounting Office).

1.9   These publications note that the systems and strategies an organisation uses to plan its workforce depend on the context in which it operates. Because of this, there is no workforce planning "best practice". Rather, there is a range of "better practices" that organisations can consider and adapt to suit their environment and their own needs.[3] Workforce planning is not an exact science – it is a continuous process requiring long-term effort and several attempts to establish effective planning processes and strategies.[4]

1.10   We considered this when we applied our audit expectations. We looked for evidence that CRIs were addressing the main elements of workforce planning. We did not have a set view on the systems or strategies that CRIs should use to plan their workforce.

1.11   We examined documentation on CRIs' workforce planning activities. We also interviewed staff at each of the nine CRIs. Figure 2 outlines the science focus and number of staff within each CRI. Appendix 2 provides more information on the CRIs and their operating environment.

1.12   Two CRIs merged during our audit, reducing the number of CRIs from nine to eight. The merger took place on 1 December 2008. Because our audit uses information collected before the merger, this report refers to nine CRIs.

1.13   Our report sometimes refers to the numbers of CRIs that were using particular workforce initiatives. These numbers can add up to more than nine, because the CRIs were often using more than one method or approach as part of a particular initiative. It is also important to note that the numbers mentioned for any individual initiative cannot be directly related to our overall assessment of CRIs' workforce planning maturity (see Figure 3). Our maturity assessment was based on the combined effect of the initiatives and the extent to which it enabled the CRIs to comprehensively and effectively plan their workforce.

What we did not audit

1.14   Our audit did not include:

- an assessment of the CRIs' overall organisational performance or viability; or
- forming an opinion on the adequacy of funding arrangements for CRIs.

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3   Australian National Audit Office (2001), *Planning for the workforce of the future: a better practice guide for managers*.

4   Australian National Audit Office (2001), *Planning for the workforce of the future: a better practice guide for managers*. United States General Accounting Office (2000), GAO/OCG-00-14G *Human capital: a self-assessment checklist for agency leaders*.

Figure 2

Crown Research Institutes' science focus and number of full-time equivalent staff, as at 30 June 2008

Crown Research Institute	Science focus	Number of staff
AgResearch Limited (AgResearch)	agriculture and the environment applied biotechnologies food and textiles	934
New Zealand Institute for Crop and Food Research Limited* (Crop and Food Research)	sustainable land and water use high performance plants personalised foods high-value marine products biomolecules and biomaterials	325
Institute of Environmental Science and Research Limited (ESR)	public health environmental health forensic science	373
Institute of Geological and Nuclear Sciences Limited (GNS)	geological hazards and tectonics environment and land use earth and ocean resources for economic growth isotope technologies for industry and science	333
The Horticulture and Food Research Institute of New Zealand Limited* (HortResearch)	fruit crops food – including natural products, nutraceuticals, and functional foods gene technologies – bioinformatics, gene discovery and screening, functional genomics bioengineering sustainable horticultural production and land use	482
Industrial Research Limited (IRL)	communication, information, and electronic technologies advanced materials and performance intelligent devices and systems biochemical technologies and energy technologies complex measurement and analysis	307
Landcare Research New Zealand Limited (Landcare Research)	biodiversity and ecosystem processes greenhouse gases and carbon storage sustainable business and government biosecurity and pest management rural land use and urban environmental management	438
National Institute of Water and Atmospheric Research Limited (NIWA)	atmosphere and climate coasts and oceans freshwater, fisheries, and aquaculture	726
New Zealand Forest Research Institute Limited (Scion)	biomaterials science alternative species plantation resources renewable materials and products from plants	317

* The Horticulture and Food Research Institute of New Zealand Limited and New Zealand Institute for Crop and Food Research Limited merged on 1 December 2008 to form The New Zealand Institute for Plant and Food Research Limited.

Part 2
Maturity of workforce planning in Crown Research Institutes

2.1   In this Part, we describe the workforce planning maturity of the nine CRIs. There were:

  - two CRIs with established workforce planning systems;
  - five CRIs with developing workforce planning systems; and
  - two CRIs with early-stage workforce planning systems.

2.2   Good practice guidance notes that it can take several attempts to establish systems and strategies that support an organisation in effectively managing the mix of skills and knowledge in its workforce.

2.3   An organisation's ability to establish effective workforce planning systems is affected by a range of internal and external influences (see Appendix 1, Figure 13). We acknowledge that CRIs operate in an environment where science research priorities can change and funding is uncertain. Workforce planning in this context is difficult. However, when used strategically, workforce planning can help organisations to adapt effectively to changes in their environment.

Assessing Crown Research Institutes against our expectations

2.4   Each CRI met our audit expectations at least in part. They had identified their workforce needs, were establishing training, recruitment, and retention strategies to meet those needs, and were monitoring and evaluating their activities. However, the maturity of those activities differed between CRIs. Figure 3 describes the different levels of workforce planning maturity in the CRIs.

Figure 3
Workforce planning maturity in Crown Research Institutes

Maturity	Description	Number of CRIs
Early stages	Aware of need for workforce planning. Had some systems, or were establishing systems, to support workforce planning. Focused on improving workforce data to support comprehensive, co-ordinated workforce planning.	2
Developing	Embedding workforce planning systems. Collecting and analysing data to identify needs, and inform and improve workforce strategies. Carrying out some monitoring and measuring of strategies and progress.	5
Established	Had comprehensive workforce planning systems that were integrated with other aspects of business planning. Collecting and analysing data from a range of sources to identify needs, and inform and improve workforce strategies. Monitoring and measuring progress to improve and refine strategies as needs changed.	2

Two Crown Research Institutes with established workforce planning systems

2.5   Two CRIs had established systems for gathering and analysing workforce data. These CRIs were using information from different sources to understand their workforce needs and how internal and external factors might affect those needs. These CRIs were considering and using a range of initiatives to develop or attain the skills and knowledge they needed, and had a mix of short- and long-term initiatives based on their analysis of their workforce needs.

2.6   In these CRIs, creating systems or measures to evaluate effectiveness was an integral part of establishing a workforce initiative. This integration enabled the CRIs to make refinements and feed information back into assessments of their workforce needs. These CRIs were aiming to use workforce planning strategically and position themselves to adapt to changing workforce needs.

2.7   We were pleased to see the level of progress in these CRIs, and their use of workforce planning as a tool to support reaching their organisational goals.

Five Crown Research Institutes with developing workforce planning systems

2.8   Five of the CRIs we visited were developing their workforce planning systems. Of these CRIs, two had more advanced workforce planning than the others. They had some established workforce planning systems that were working well and providing information for new initiatives or improvements. The three CRIs at the lower end of this developmental phase had some workforce planning systems, often with one or two initiatives that were working well. With these initiatives now established, they planned to improve their workforce planning information and expand their workforce planning activities.

2.9   Each CRI recognised that effective workforce planning was a useful strategic tool, and was working to establish workforce planning systems to support this. In our view, it is important for the CRIs in this developmental phase to continue their improvement activities to support a comprehensive and co-ordinated approach to workforce planning. We have conveyed this directly to the CRIs.

Two Crown Research Institutes with early-stage workforce planning systems

2.10   Two CRIs were still in the early stages of establishing workforce planning systems. These CRIs had a narrower view of their workforce needs, and initiatives to train, recruit, or retain staff with the required skills and knowledge usually had a short-term focus.

2.11   The ability of these CRIs to form a broader and long-term view was limited by the available data about their workforce, and the CRIs' capacity to analyse this data. Data quality also limited their ability to effectively monitor their training, recruitment, or retention activities. However, these CRIs were considering ways to improve their data. They acknowledged the need for a more strategic approach to workforce planning because this could help them manage the workforce challenges they face.

2.12   While these CRIs' workforce planning initiatives were not as established as in the other CRIs, it was encouraging to see that they were considering how workforce planning could support better capability management. In our view, improving the range and quality of data about their workforce is essential to support better analysis of their needs and enable them to consider their needs in a more strategic way. We have conveyed this directly to the CRIs.

Part 3
Identifying workforce needs

3.1   In this Part, we discuss the importance of identifying workforce needs. We then set out our findings on how the CRIs were:

- considering the relationship between their workforce and their strategic direction;
- understanding their workforce – its characteristics, and the current mix of skills and knowledge; and
- analysing workforce data to assess their workforce needs.

3.2   We also present our views on how the CRIs were identifying their workforce needs.

Importance of effectively identifying workforce needs

3.3   Effective workforce planning is underpinned by a solid understanding of an organisation's current workforce capability and characteristics, the skills and knowledge required for the future, and how external factors might affect the supply and demand of workers. A comprehensive assessment of workforce needs allows an organisation to identify risks and establish workforce strategies that can deliver the right mix of skills at the right time. Figure 4 outlines some factors that organisations should consider when identifying their workforce needs.

Figure 4
Considerations in identifying workforce needs

Data	Profiling the workforce
Relevance – what data is needed? Is the right data being collected? Collection systems – are there systems to collect data needed for analysis? Quality – is data current and accurate? Baselines – is a baseline required so progress can be measured?	What are the demographics of the organisation – by age, gender, diversity, length of service? What is the current mix of skills (technical as well as skills such as leadership or mentoring)? What motivates the workforce (variety of work, contribution to society, recognition and reward)? Are there roles critical to reaching organisational goals?
Supply and demand	**Future direction**
What is the internal demand for skills? How do external factors affect supply and demand (labour market information, external demographic profiles)? Where will required skills be sourced (internally, or local or international labour markets)? Is support required to establish supply?	What skills will be needed to achieve future goals? How will changes in the future work environment affect skill supply and demand?

Source: adapted from Australian National Audit Office (2001), *Planning for the workforce of the future: a better practice guide for managers.*

Considering the relationship between workforce planning and strategic direction

All CRIs acknowledged that staffing challenges and identifying workforce needs were strategic issues. However, only a small number of CRIs had comprehensively related their workforce needs to their overall strategic direction.

3.4   Identifying how an organisation's strategic direction relates to its workforce needs is part of effective workforce planning. It allows an organisation to understand clearly where, and whether, it needs to enhance or change the skills and knowledge of its workforce to reach the organisation's goals. With this understanding, the organisation can then consider targeted plans for developing its workforce.

3.5   Through their strategic planning processes, all CRIs had linked their ability to attract and retain staff to reaching their organisational goals. They were aware that not having the necessary skills and knowledge in their workforce could affect their ability to reach those goals. Staffing challenges and ways of addressing these challenges were a feature in most strategic documents. A few of these documents acknowledged that building and maintaining the right mix of skills and knowledge was challenging because of factors like the global competition for science skills and the ability to offer competitive pay. These factors were recurring themes in our discussions with the CRIs. In response to these challenges, most CRIs were aiming to attract and retain staff by creating an attractive work environment.

3.6   While workforce challenges and needs were a strategic issue for all CRIs, only a small number of CRIs had comprehensively related their workforce needs to their strategic direction. In one of the best examples we saw, the CRI outlined a mix of workforce initiatives focused on long-term retention, attracting staff, and ensuring that important knowledge was retained within the organisation. These workforce initiatives were set out against a time line with specific goals that the initiatives were intended to deliver. It also identified which initiatives were underway, which were still to be funded, and which ones needed some form of external involvement to reach the overall goals. The CRI had also identified the existing mix of skills and knowledge within its workforce, where new skills and knowledge were needed, and whether they would be sourced internally or externally. It was clear that this CRI was planning its workforce with a well-rounded, long-term view.

3.7   In comparison, another CRI had outlined workforce initiatives with little indication of time lines or resources needed to deliver these initiatives. This CRI recognised

the need for a more structured approach to its workforce planning. It intended to produce a plan that would identify the skills and knowledge it would need and establish targeted initiatives to support the organisation in attracting and retaining suitable staff.

Understanding workforce capability and characteristics

The CRIs had clear profiles of their organisational capability, but were less likely to be using what they knew about individual employees' skills and knowledge, or the collective characteristics of their staff, to inform their workforce planning.

3.8   Understanding the existing mix of skills and knowledge and the characteristics of the workforce is an important part of identifying workforce needs. It enables an organisation to see where there are gaps and to identify trends that could pose a risk to long-term organisational capability. It also helps the organisation to establish baselines against which it can evaluate its progress. We discuss data and evaluation further in Part 5.

3.9   Each CRI had identified its organisational capabilities. Six CRIs had profiled individual skills and knowledge or workforce characteristics to inform their workforce planning. Figure 5 outlines how some CRIs were using what they knew about their employees' skills and knowledge, and the characteristics of their workforce, in their workforce planning.

Figure 5
Collecting and using information about workforce capability and characteristics

Identifying skills and demand

Landcare Research was establishing a model to record its workforce skills and estimate the likely demand for these in the future. The model included identifying each employee's primary skills as well as other skills like negotiating, mentoring, or measurement analysis. Having this model to collect information on employees' skills helps the organisation to think strategically about its workforce development. It can use the model to identify employees who can be trained in areas that will meet organisational needs, and where the organisation needs to recruit staff with the required skills and knowledge.

Demographic profiling

IRL had profiled its workforce by age group and distribution of staff in different career stages. This revealed that about one third of the CRIs' staff were approaching retirement in the next 10 to 15 years, representing a potential loss of organisational knowledge. The CRI identified a need to develop staff in the early to mid-career stages to ensure that staff had the knowledge and skills to maintain organisational capability.

3.10   Four CRIs commented that their ability to use data about their employees' capabilities and characteristics in workforce planning was limited by:

- inadequate systems to collect and record data;
- data that was not current; or
- a lack of capacity to analyse the data.

3.11   These CRIs planned to address these limitations with information technology projects or by reviewing data to ensure that the necessary information was being collected.

Assessing workforce needs

All the CRIs had systems to assess their current and future workforce needs but not all were analysing those needs in a comprehensive way. This was usually because their data was not current or because of shortcomings in their analytical tools.

3.12   An essential part of identifying workforce needs is having a broad set of workforce information to analyse. Each CRI had a range of systems to gather internal and external data for workforce planning. These systems included collecting demographic and capability data, turnover data, entry and exit interview data, and information from staff surveys and external pay surveys. Business planning and performance review processes were used to get workforce information. Another mechanism for collecting workforce information was through periodic meetings with other CRIs' human resources managers. Figure 6 gives more detail about the rationale and benefits of these meetings.

Figure 6
Sharing workforce information

For several years, human resources managers from each CRI have met informally as a group to share information, insights, and knowledge about their workforce. The group exists because the human resources managers recognised that CRIs face similar issues in their workforce planning, and that it would be useful to work together where possible. The group provides an important collegial support network and enables continuity of human resources knowledge across CRIs.

The group helps CRIs in assessing their workforce needs because the human resources managers discuss common problems, benchmarking, and sharing data. Participants can learn from others' experiences, as they share information on initiatives that have worked well or things that have not worked quite so well.

3.13   Most CRIs' mix of systems to gather workforce information provided a good base for gathering data from which to assess workforce needs. In the better examples we saw, CRIs used a range of internal and external information to assess their

existing needs and how these might change over time as the internal and external environment changed.

3.14   However, not all CRIs were using this breadth of information to analyse and establish their workforce needs thoroughly. This was usually because the data was not current or their systems needed improving to enable the analysis.

3.15   Figure 7 provides examples of some ways CRIs assessed their workforce needs. These examples take a broad view, considering current and future needs, gaps between current and future needs, demographic trends, the demand for skills, and external influences on the demand for skills.

Figure 7
Ways to assess workforce needs

Capability matrix

ESR used a capability matrix to assess its capability needs. The matrix set out the mix of skills its employees had against the organisation's science disciplines. The matrix identified which skill sets needed to be maintained or enhanced as well as areas where capability might need to expand in the future.

Strategic planning workshops

NIWA used its strategic planning workshop to consider internal and external workforce challenges, recruitment and retention needs, and ideas to address these. As part of the workshop, capability profiles of science groups were prepared. These included assessments of constraints and growth trends.

Business planning

AgResearch included a people and capability template as part of its science group business planning. The template prompts science managers to consider:

· demographic trends, such as the age groups of their staff;

· current science capabilities and other skills, future needs, and any gaps;

· ways to address gaps, such as recruitment or internal development;

· team culture;

· reward and recognition; and

· any internal and external factors that are risks for capability.

Our views on the effectiveness of identifying workforce needs

3.16   In our view, it is not surprising that CRIs were at different stages in identifying their workforce needs. Workforce planning is a continuous process and can require several attempts to establish effective systems and strategies. The CRIs that were

using workforce information from a range of internal and external sources were in a good position to identify specific workforce needs and risks. They were able to plan their workforces in an informed way, decide whether the needs or risks require a solution, and find out which solutions were most appropriate.

3.17   The CRIs that did not have a broad understanding of their workforce needs were at risk of making uninformed decisions about their capability. Without a comprehensive assessment of workforce needs, organisations cannot be sure that they are targeting workforce initiatives and resources effectively and efficiently. This is critically important for CRIs because of the funding uncertainty they face. We were encouraged to see that the CRIs with a less comprehensive identification of their workforce needs were planning work and introducing systems to enable them to form a broader and more detailed understanding of their workforce needs. We have told these CRIs that we consider it important that they continue their efforts in this area.

Part 4
Improving workforce capability

4.1 In this Part, we set out our findings on how CRIs were establishing workforce initiatives to improve their organisational capability. We discuss how the CRIs were:

- addressing workforce risks;
- considering the role of development opportunities and the working environment; and
- assessing resource implications and incorporating workforce planning into their business planning processes.

4.2 We also set out our views on the CRIs' approach to improving their organisational capability.

4.3 We do not have a set view on the systems or methods that CRIs should be using to improve their capability. We do consider that, as a matter of good practice, organisations should be following a planning process that enables them to examine their needs and risks and establish the most appropriate response to these. Figure 8 outlines some factors that organisations should consider when establishing workforce planning initiatives.

Figure 8
Considerations in establishing workforce planning initiatives

Interpret needs and risks	Consider the options
What do workforce assessments show? • existing/potential skill gaps • potential loss of critical skills/knowledge • existing/potential risks arising from skill supply and demand • recruitment/retention risks.	What needs to be done? • gather more detailed information • internal/external skill development • collaboration • targeted recruitment/retention • different ways of working • better use of technology/information systems.
Does something need to be done?	What will be needed to establish the initiatives?
What are the consequences of doing nothing?	Which initiatives are best suited to the organisation's situation?

Addressing workforce risks

Each CRI identified similar workforce risks such as skill shortages, increasing competition for skills, loss of critical staff, and the ability to provide competitive pay. Most CRIs were establishing initiatives to address these risks.

4.4 All CRIs had initiatives designed to improve their workforce capability. Some common initiatives were:

- building skills with leadership programmes, mentoring, and internal development opportunities;

- establishing arrangements to ensure that crucial knowledge and skills were kept within the organisation;
- using organisation structures to create development opportunities and establish career options;
- promoting science as a career through student summer programmes, scholarships, participation in career days, and encouraging student visits;
- taking a proactive approach to recruitment; and
- establishing relationships with universities.

4.5   Five CRIs with more established or developing workforce planning were using a mix of these initiatives to ensure that they could find staff with the required skills and knowledge now and in the future. Their initiatives had a short- and long-term focus. The two CRIs in the early stages of their workforce planning and the two CRIs with developing workforce planning did not have a similar mix of initiatives or were just starting to set initiatives up. They recognised that they needed to consider options other than recruiting to improve their workforce capability. They were beginning to establish systems to support this.

Initiatives to develop leadership skills

4.6   Most of the CRIs were using leadership development programmes to some extent. Few scientists have exposure to leadership concepts through their science training so it can be difficult to find the combination of science and leadership skills needed in some CRI roles. Providing leadership development programmes helps staff to develop these skills and creates a pool of talent from which to recruit. Figure 9 outlines how one CRI, HortResearch, had established an effective leadership development programme.

Figure 9
HortResearch's leadership development programme

HortResearch identified that many of its staff were highly qualified but had little exposure to leadership concepts. It considered that effective leadership was important in an organisation's success. So it introduced a programme of modules, practical assignments, coaching, and peer assessments to help improve leadership skills.

The programme first targeted senior positions but has evolved to include team leaders and other staff with leadership potential. Focusing on the latter group allows these staff to develop leadership strengths before they progress to more senior roles.

Important elements in establishing the programme

A robust research base for its leadership programme

Internal workshops and literature reviews were used to identify characteristics that contribute to great leadership and were relevant to HortResearch. These characteristics formed the programme framework.

A programme focused on improving existing leadership strengths

HortResearch's research showed that improving three or four leadership characteristics that were existing strengths could improve a person's effectiveness as a leader. Improving existing strengths gives the programme a positive focus. A pre-programme assessment enables participants to identify areas that will be easiest for them to develop as well as any characteristics that may detract from their leadership abilities.

Programme content structured for easy and practical delivery

The programme content was delivered through short modules. The course content has practical applications and participants were encouraged to use everyday examples from their work. After completing a module, participants continued with periodic feedback and coaching sessions to encourage behavioural change.

A measurement framework for the programme

HortResearch collected data about the programme so it could evaluate progress and show the return on its investment in the programme.

Evaluation on a continuing basis

Programme evaluations allowed HortResearch to show improvements in performance and the value of the programme. As more people participated in the programme, the data base grew. Proving benefits using one's own data is more meaningful for staff.

Using mentoring to develop skills

4.7   Seven CRIs were using mentoring to help improve their organisational capability. Formal and informal arrangements were being used to develop staff in the early stages of their careers so that knowledge and skills central to the CRI's business would not be lost as older staff retired. Four CRIs reported using transition-to-retirement arrangements to keep skills within the organisation and encourage staff to pass on their knowledge.

4.8   Figure 10 describes some other initiatives to improve the organisations' capability.

Figure 10
Initiatives to improve capability

Organisational flexibility

Scion had established a model to distribute leadership across different roles. Under this model, a scientist could be a project leader in one area and a team leader in another. This approach exposes staff to different roles, helps skill development, and provides opportunities for career development. It helps to share and spread knowledge through the organisation, developing capability from within, and ensuring that knowledge and skills are not concentrated in one person.

A summer student programme

HortResearch offered summer studentships, where students apply to work on projects at the CRI. The programme was intended to be more than just a workplace experience, with students receiving an induction, career advice, coaching, and guidance. The programme focused on development and establishing a connection with students.

HortResearch created the programme to get students enthusiastic about science training, improve the students' knowledge of the science industry, and regard the CRI as a potential employer.

Recruitment

A few CRIs were considering how their recruitment systems could be used more strategically to improve the organisation's capability. NIWA was considering:

- raising its profile as a potential employer through advertisements promoting the organisation rather than specific vacancies;
- establishing an alumni organisation to maintain contact with former employees and use their connections in the international science community; and
- establishing a database to record expressions of interest generated through these activities, so that when a vacancy arose suitable candidates could be notified and invited to apply.

Recognition and reward

4.9   Recognition and reward are important factors in attracting and retaining staff, and therefore in improving organisational capability. Most CRIs considered that it was difficult to provide competitive pay because they had limited funding. However, they acknowledged that pay was important in attracting and retaining staff. Eight CRIs had initiatives designed to reduce, within the available resources, pay disparities with the wider labour market. For example, one of these CRIs had established a group to review pay options after staff surveys showed that this was a retention risk.

Development opportunities and the working environment

To attract and retain staff, CRIs were aiming to provide development opportunities and an attractive working environment with a good workplace culture.

4.10   The CRIs considered that, while they might be unable to offer competitive pay to attract and retain staff, they could compete by offering development opportunities and an attractive working environment. All CRIs were providing staff with development opportunities and had initiatives designed to create an attractive working environment.

4.11   As well as leadership programmes and mentoring arrangements, common development opportunities were secondments, coaching, sabbaticals, study and conference leave, and individual performance development. Five CRIs had established internal programmes to support staff development by involving them in special projects. Staff benefited by gaining experience in project management, getting new skills, and by being able to establish their research reputation. CRIs benefited by improving capability and positioning themselves to have a mix of skills and experience that would attract funding. The CRIs were also using internal programmes to provide scientists with opportunities to pursue new ideas. We could see that some CRIs were aiming to provide initiatives that would support staff in different stages of their careers.

4.12   Many CRIs viewed establishing a good workplace culture as an important way of attracting and retaining staff. These CRIs were considering how to create an attractive working environment through organisational culture and the physical environment. All CRIs were offering a range of wellness initiatives, flexible working arrangements, family-friendly policies, and other benefits such as insurance, as part of their aim to provide a good workplace.

4.13   Figure 11 provides an example of how Scion uses its work environment as a way of attracting and retaining staff.

Figure 11
Scion's approach to promoting work-life balance

Scion views work-life balance as critical in its ability to attract and retain staff. It actively promotes work-life balance as an important part of its workplace culture. The CRI offers a mix of flexible working arrangements, health and well-being programmes, and support for staff with community commitments.

Elements in Scion's approach

A culture that supports work-life balance

Trust and openness are important for flexible working arrangements. Staff need to feel that they are trusted to manage their time and deliver results without unnecessary scrutiny.

Management shows its support for work-life balance and is open to trialling new initiatives. Senior support is important to keep the right balance between organisational needs and staff needs.

A focus on productivity rather than compliance

If flexible working arrangements are to work well, it is important to ensure job outcomes are still being met. The focus should be on productivity and reaching job outcomes rather than focusing on the specifics of employees' timesheets.

A system to support productivity

A bottom line focus on productivity necessitates systems to ensure that productivity is being maintained.

The benefits

Scion considers that supporting staff to achieve work-life balance benefits the organisation. The right balance allows people to be more productive and feel more positive about their working life. Flexible hours are a central part of the CRI's approach to work-life balance and is an alternative way for Scion to recognise the efforts of its staff.

Promoting work-life balance as part of a recruitment package is a way to compete with organisations that can offer better pay. With skills being sourced increasingly from overseas, it can be an important part of the recruitment package because people often consider the move to New Zealand for lifestyle reasons.

Assessing resources and integrating planning

CRIs were identifying the resources required to introduce workforce initiatives, and most CRIs' workforce planning was integrated with business planning processes.

4.14   Most CRIs' strategic documents had clear commitments to workforce initiatives as a way to support reaching the organisation's business goals. The CRIs with developing or established workforce planning had integrated this with business planning processes. The best examples of integrated planning had links between strategic plans, business plans, team plans, and individual development plans.

We were able to see how particular workforce initiatives linked to organisational capability development and reaching the organisation's goals. CRIs in the early stages of their workforce planning had planning and initiatives that were less connected. However, these CRIs were starting to consider their workforce from a broader perspective and to set up systems to support this.

Our views on improving workforce capability

4.15   Improving an organisation's capability is supported by workforce strategies based on a thorough assessment of workforce needs and risks, and well-considered options for addressing those needs and risks. This enables organisations to invest resources more effectively by designing targeted initiatives.

4.16   In the best examples of workforce planning, CRIs were establishing initiatives to address skill shortages, create a supply of skills, and improve their organisational capability. We were encouraged to see that they were considering different options to deliver the mix of skills and knowledge they needed.

4.17   Because some CRIs did not have robust workforce information, there was a risk that their workforce initiatives did not effectively meet their workforce needs and improve their organisation's capability. As we note in paragraph 3.17, improving the range and quality of workforce information will help ensure that workforce initiatives can be targeted effectively and efficiently.

Part 5
Monitoring and evaluating workforce planning activities

5.1 In this Part, we:

- discuss the importance of monitoring and evaluation;
- outline the systems CRIs were using to monitor and evaluate their workforce planning activities; and
- provide our views on the CRIs' systems for monitoring and evaluating their activities.

Importance of monitoring and evaluation

5.2 We consider that it is critical to have systems to monitor and evaluate workforce strategies, and to feed this information back into overall workforce planning. Information gathered through monitoring and evaluation systems enables organisations to make effective decisions about the success of workforce planning activities. Monitoring and evaluation allows organisations to:

- track progress when establishing initiatives;
- check whether initiatives are achieving desired outcomes;
- examine organisational health;
- identify new risks; and
- adapt to changing needs.

5.3 In Figure 12, we list some points that organisations should consider to ensure that monitoring and evaluation activities contribute to effective workforce planning.

Figure 12

Considerations for monitoring and evaluation

Establishing the framework	Evaluating effectiveness
What is the intended outcome of the strategy?	Is the strategy delivering the intended outcome?
How will outcomes will be measured?	Has the environment changed and are modifications needed?
What information is needed to assess progress?	Are there new risks that require a different approach?
How often should progress be reviewed?	

Source: Adapted from Australian National Audit Office (2001), *Planning for the workforce of the future: a better practice guide for managers*.

Systems for monitoring and evaluating workforce planning activities

All CRIs had systems to monitor and evaluate workforce planning activities. However, the extent of monitoring and evaluation varied between CRIs.

5.4   The most common monitoring and evaluation systems were:

- analysis of climate or culture surveys; and
- analysis of human resources data (for example, turnover data or exit interview responses).

5.5   These systems provided for periodic review of workforce needs, progress with workforce initiatives, and identification of emerging risks.

5.6   Climate or culture surveys were an important way for CRIs to evaluate workforce strategies, and identify areas for improvement or new risks. Six CRIs held data from previous surveys so themes and trends could be tracked over time. Because most CRIs were aiming to provide development opportunities and provide an attractive working environment to attract and retain staff, surveys were a useful mechanism to measure staff satisfaction and identify concerns.

5.7   Most of the nine CRIs analysed the survey results for themes and trends, and established projects to respond to those themes and trends. For example, one CRI's survey showed that staff were concerned about their pay levels. The CRI recognised that this dissatisfaction was a retention risk so it set up a project to investigate options to address it. Another CRI identified staff concerns about inadequate systems for managing difficult behaviours. It introduced training for this, and feedback on the training suggested that it was meeting the needs of staff. This became core training for all staff.

Internal reporting

5.8   Internal reporting on workforce initiatives and the state of the workforce can be an effective way of regularly monitoring workforce planning and the state of the workforce. Senior support for workforce planning activities is an important factor in their success. Regular reporting to senior management is a useful tool to keep workforce issues on their agenda.

5.9   Members of the CRIs' senior management teams were commonly receiving regular internal reports about the workforce planning initiatives. Staff we spoke with told us that there was a lot of support from senior management for workforce initiatives.

5.10   Most CRIs had internal reporting systems to advise senior management of progress with workforce planning activities. Reports covered basic information such as the number of full-time equivalent staff, progress with recruitment, turnover, or training, or updates on workforce projects. The best examples of internal reporting added to the information in reports by providing an analysis and discussion of important workforce issues, turnover, or demographic profiling.

5.11   Most CRIs carried out some basic analysis of human resources data but CRIs with developing or established workforce planning were doing more sophisticated analysis of workforce information and relating the results back to workforce strategies. For CRIs in the early stages of establishing their workforce planning systems, poorer data quality and the inability to analyse information easily were limiting their monitoring and evaluation activities. However, these CRIs had identified these limitations and were planning to address them with information technology projects or by reviewing the types of measures they used.

Our views on monitoring and evaluating workforce planning activities

5.12   Robust workforce data and analysis of it is essential in establishing meaningful measures from which to monitor and evaluate. We were pleased to see that monitoring and evaluation initiatives were an integral part of workforce planning for the CRIs with established workforce planning systems, and for three of the five CRIs with developing workforce planning systems.

5.13   Because some CRIs had poor workforce data or limited capacity for analysis, it was difficult for them to know whether their workforce needs and risks were being addressed. Without robust systems to monitor and evaluate workforce planning activities, organisations cannot be sure that they are targeting their resources most effectively to improve their capability.

5.14   As a matter of good practice, CRIs should ensure that their monitoring and evaluation activities are supported by relevant data collection, analysis, and measures.

Appendix 1
About workforce planning

Workforce planning, in general, encompasses a range of activities. These include:

- identifying current and future workforce needs;
- creating both short- and long-term recruitment and retention strategies;
- developing the existing workforce to meet organisational needs through training, education, and mentoring; and
- establishing new ways of working – for example, distance working, flexible working, or using technology to support better ways of working.

Some factors to consider when workforce planning

Because each organisation is unique, the particular factors influencing workplace planning will vary between organisations. The following is a sample of factors that organisations should consider when workplace planning.

Changing workforce demographics

Demographic trends should be considered in workforce planning, while recognising that demographic trends will fluctuate over time. Current long-term demographic trends suggest a large group of workers approaching retirement. With this scenario, there will be fewer younger workers, and middle-aged/older workers will make up a greater proportion of the workforce. This means that initiatives to develop staff and share skills, as well as considering different ways of working, are critical to ensure that institutional knowledge is retained.

Recruitment and retention

Recruiting and retaining workers is a critical aspect of workforce planning. Good recruitment policies ensure that the right people are employed, while retention strategies mitigate the risk of losing institutional knowledge. Recruitment and retention contribute to the capability and capacity of an organisation. Recruitment and retention can be affected by factors such as work environment, opportunities available within the organisation, pay, and working arrangements.

Career pathways/professional development

Increasingly, employers are expected to cater for a range of employees' career and development needs. An organisation's provision of different career options and professional opportunities contributes to its capability and capacity. It allows people to gain new skills to meet new demands and can help staff retention because people do not need to leave the organisation or sector to seek further opportunities. Additionally, professional development opportunities can make an organisation attractive to potential employees.

Work environment

Organisations with positive cultures attract, support, and retain their staff. Demonstrating that staff contributions are valued can create a sense of loyalty and commitment for employees, and encourage them to consider that they have a future with the organisation. A well-equipped, well-resourced work environment that provides opportunities for development and growth is also important in recruiting and retaining staff.

Broader influences to consider

Broader internal and external influences can also affect workplace planning. Figure 13 lists some of these influences.

Figure 13
Influences on workforce planning

Internal influences	External influences
commitment of organisation, senior management, and individuals to workforce planning	government legislation and policy
	funding and resources
funding and resources	professional registration requirements
abilities of the human resources team	skills of the available workforce
data quality	global trends

Appendix 2
Crown Research Institutes' operating environment

Each Crown Research Institute (CRI) is based around a productive sector of the economy or a group of natural resources. CRIs are expected to determine their own research priorities, while taking account of government research priorities or sector interests. They have common characteristics but also operate in different science and market areas, serve different customer groups, and have become commercialised to varying degrees. CRIs are not expected to maximise profits, but are expected to generate income from their research, science, and technology activities.

Funding

CRIs operate in a contestable funding environment. They compete for funding by tendering for research contracts from private companies, local bodies, or other state-owned agencies, or bid for contracts from the Foundation for Research, Science and Technology (FRST). Government funding consists primarily of contestable contracts from FRST, although there are some negotiated stable funding arrangements.

The main sources of income are:

- government research contracts;
- fee for service contracts; and
- sales and royalties.

CRIs also get funding from the CRI Capability Fund (administered by the Ministry of Research, Science and Technology) to retain and develop research capability.

In the 2007/08 financial year, FRST contracts and capability funding made up 46% of CRIs' total revenue.

Legislation

The main statutes for CRIs include:

- the Crown Research Institutes Act 1992;
- the Companies Act 1993; and
- the Crown Entities Act 2004.

The Crown Research Institutes Act 1992 sets out operating principles for CRIs. A CRI should:

- carry out research for the benefit of New Zealand;
- pursue excellence in all its activities;
- comply with all applicable ethical standards;

- promote the application of the results of research and technological developments;
- be a good employer; and
- exhibit a sense of social responsibility.

The Crown Entities Act 2004 also requires CRIs to act as good employers. This means that CRIs must have policies for the fair treatment of employees, provide for diversity, and enhance individuals' development.

Monitoring and governance arrangements

CRIs are Crown entity companies. They have shareholding Ministers who are responsible for overseeing and managing the Crown's interests in the CRIs. Shareholding Ministers appoint CRI directors and set out their expectations for CRIs in an annual operating framework.

The Crown Company Monitoring Advisory Unit monitors the Government's investment in CRIs, and provides performance and governance advice to shareholding Ministers.

The shareholding Ministers for CRIs are the responsible Minister and the Minister of Finance.

Publications by the Auditor-General

Other publications issued by the Auditor-General recently have been:

- Draft annual plan 2009/10
- Performance audits from 2007: Follow-up report
- Department of Corrections: Managing offenders on parole
- Housing New Zealand Corporation: Maintenance of state housing
- Annual Report 2007/08
- Ministry of Health: Monitoring the progress of the Primary Health Care Strategy
- Ministry of Education: Supporting professional development for teachers
- Inquiry into the West Coast Development Trust
- Maintaining and renewing the rail network
- Reporting the progress of defence acquisition projects
- Ministry of Education: Monitoring and supporting school boards of trustees
- Charging fees for public sector goods and services
- The Auditor-General's observations on the quality of performance reporting
- Local government: Results of the 2006/07 audits
- Procurement guidance for public entities
- Public sector purchases, grants, and gifts: Managing funding arrangements with external parties
- The Accident Compensation Corporation's leadership in the implementation of the national falls prevention strategy
- Ministry of Social Development: Preventing, detecting, and investigating benefit fraud
- Guardians of New Zealand Superannuation: Governance and management of the New Zealand Superannuation Fund

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