

Review of the Australia New Zealand Biotechnology Partnership Fund

Sector Development Team

Industry and Regional Development Branch

MINISTRY OF ECONOMIC DEVELOPMENT

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Ministry of Economic Development
Industry and Regional Development
Sector Development
Level 10, 33 Bowen Street
P O Box 1473
Wellington
New Zealand

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This report was prepared by Amelia Sharman.

Executive Summary

The Australia New Zealand Biotechnology Partnership Fund (ANZBPF) was established in 2003 in response to recommendations from the Growth and Innovation Framework (GIF) Biotechnology Taskforce (EDC Min (03) 22/4 refers). Apart from the first year, when \$0.888 million was set aside for set up costs, \$0.444 million per annum is allocated towards operational expenditure, with the remaining majority allocated towards project expenditure (Table 1)¹.

Table 1: ANZBPF funding allocation

Vote Economic, Industry and Regional Development	NZ\$ million (GST exclusive)				
	2003/04	2004/05	2005/06	2006/07	2007/08 and out years
<i>Non-Departmental Output Class: Enabling Services – Facilitating the Development and Implementation of Sector and Regional Strategies</i>	0.888	0.444	0.444	0.444	0.444
<i>Other Expenses to the Incurred by the Crown: International Biotechnology Partnerships</i>	-	2.222	2.222	4.000	4.000
Total	0.888	2.666	2.666	4.444	4.444

The ANZBPF is delivered by New Zealand Trade and Enterprise (NZTE), with technical and other support provided on an as required basis by the Ministry of Research, Science and Technology (MoRST) and the Foundation for Research, Science and Technology (FRST).

Programme rationale

The ANZBPF was established in response to a number of particular challenges affecting the biotechnology industry, namely the substantial amounts of capital required and the inherently long development and commercialisation timeframes. It was intended to provide assistance specifically targeted to support the commercialisation of biotechnology firms, in particular, to provide a larger regional hub as a platform for growth and internationalisation of New Zealand firms.

Programme objective

The overarching objective of the ANZBPF is to:

“Accelerate the rate at which New Zealand biotechnology companies (including the commercial arms of Crown Research Institutes (CRIs) and Tertiary Education Institutes (TEIs)) build strategic commercial alliances with Australian companies or entities with the view to improving the sustained profitability and global competitiveness of New Zealand’s biotechnology sector.”

Programme delivery

There are four categories under which the ANZBPF can provide funding:

- **Large scale collaborative trans-Tasman projects:** up to NZ\$0.888 million per company per grant per annum to contribute to the costs of new commercial ventures between eligible New Zealand and Australian companies. This area of the fund is intended to support

¹ All figures in this report are GST exclusive unless otherwise stated.

significant strategic alliances that contribute to developing greater regional strength, sustained profitability, access to, and competitiveness in, international markets.

- **Market acceptance:** up to NZ\$111,111 per company per annum where an applied research area needs to be developed further to meet market needs and is able to attract private investment.
- **People and skills development:** up to NZ\$8,889 per applicant per annum to support commercial skill development.
- **Bio-market development:** up to NZ\$44,444 per company per annum to assist New Zealand companies establish collaborations with business in Australia that open up new, third market opportunities.

In addition to providing direct assistance via these four categories, the fund also supports the Australia New Zealand Biotech Alliance (ANZBA). This alliance undertakes joint marketing and investment promotion activities for Australia and New Zealand in global markets. The ANZBPF has also provided support to New Zealand's presence at a number of offshore events and market development missions.

Programme spend

The ANZBPF has been awarded a total of \$10.666 million between 2003/04 and 2006/07 (refer Table 3). Of that, \$9.874 million has been spent, leaving \$0.792 million to be committed by 30 June 2007 (Table 2).

Table 2: ANZBPF programme spend, 2003/04 - 2006/07

	2003/04	2004/05	2005/06	2006/07	Totals
Operational expenditure	\$448,000	\$943,000	\$388,000	\$453,000	\$2,232,000
Fixed costs and fund administration	\$80,000	\$565,000	\$205,000	\$310,000	\$1,160,000
Offshore events/market development missions	\$368,000	\$378,000	\$183,000	\$143,000	\$1,072,000
Grant expenditure	\$0	\$2,186,667	\$2,222,222	\$3,233,334	\$7,642,223
Large scale collaborative trans-Tasman projects	\$0	\$2,177,778	\$2,131,112	\$3,217,778	\$7,526,668
Market acceptance	\$0	\$0	\$0	\$0	\$0
People and skills development	\$0	\$8,889	\$2,222	\$6,667	\$17,778
Bio-market development	\$0	\$0	\$88,888	\$8,889	\$97,777

Budget					
Budget (operational)	\$888,889	\$444,444	\$444,444	\$444,444	\$2,222,221
Budget (grants)	\$0	\$2,222,222	\$2,222,222	\$4,000,000	\$8,444,444
Total budget	\$888,889	\$2,666,666	\$2,666,666	\$4,444,444	\$10,666,665

Actual spend					
Actual spend (operational)	\$448,000	\$943,000	\$388,000	\$453,000	\$2,232,000
Actual spend (grants)	\$0	\$2,186,667	\$2,222,222	\$3,233,334	\$7,642,223
Total actual spend	\$448,000	\$3,129,667	\$2,610,222	\$3,686,334	\$9,874,223
Under or overspend	-\$440,889	\$463,001	-\$56,444	-\$758,110	-\$792,442
Principal reason for under or overspend	Operational expenditure	Operational expenditure	Operational and grant expenditure	Grant expenditure	Grant expenditure

As at 1st December 2006, NZTE has approved and either intend to allocate, or have allocated funding towards six Large-scale collaborative trans-Tasman projects (total value of \$7.53 million and a further five grants for People and skills development and Bio-market development totalling \$115,555 (Table 3). Converted into percentages, this means that 98.49% of allocated funding to date has been for Large-scale collaborative trans-Tasman projects, 0.23% for People and skills development and 1.28% to Bio-market development.²

NZTE aim to allocate the balance of both operational and grant budgets (\$0.792 million) by 30 June 2007. The 2006/07 grant funding process has recommended for funding three Large-scale collaborative trans-Tasman projects, one People and skills development grant and one Bio-market development grant. These recommendations are to be submitted for approval by various delegated authorities including the NZTE Board.

Table 3: ANZBPF grant funding approved 2004-2006

Type of activity	Name of firm	Date approved	Grant total
Large-scale collaborative trans-Tasman projects	Industrial Research Ltd	February 2005	\$780,000
	Wrightson Ltd		\$2,576,667
	Proacta Therapeutics Ltd		\$1,866,667
	Neuren Pharmaceuticals Ltd		\$525,556
	Keratec Ltd	March 2006	\$888,889
	Livestock Improvement Corporation		\$888,889
People and skills development	AgResearch	December 2004	\$8,889
	Biomatters	June 2006	\$8,889
Bio-market development	AgResearch	June 2006	\$44,444
	Ovita ³	August 2006	\$44,444
	NIWA		\$8,889
			\$7,642,223

Conclusions – programme effectiveness

In its first three years of existence, the ANZBPF appears to be fulfilling an important role in providing a catalyst, and degree of funding for, collaborative commercialisation biotechnology projects between Australia and New Zealand.

Large-scale collaborative trans-Tasman projects

The information gathered during this review indicates that the Large-scale collaborative trans-Tasman projects are accelerating the rate at which New Zealand biotechnology companies are building strategic commercial alliances with Australian companies or entities. It also suggests that the ANZBPF is making a significant difference to the opportunities New Zealand biotechnology firms are able to capture. Where projects would have been undertaken without funding, the ANZBPF is contributing towards the greater likelihood of project success in terms of durability against shock and speed to market.

Benefits observed as a result of participation in Large-scale collaborative trans-Tasman projects include:

² A \$44,444 Bio-market development grant was awarded to Brainz in June 2005, but this grant was not allocated because company did not claim the funding before the offer expired in late 2006.

³ This grant was initially allocated to Ovita, but due to changes in company structure, the final company recipient is awaiting confirmation.

- The **financial incentive** is encouraging Australian firms to contemplate partnering with a New Zealand firm before looking to the United States or Asia.
- The grant is leading companies to **think more creatively** about what they could possibly do and who they could partner with to grow their business and realise new opportunities.
- Funded projects are proving to the Australian biotechnology industry that New Zealand biotechnology firms have the **scale and expertise** required to make a valuable contribution to strategic activities, with an ongoing effect of including the New Zealand firms in strategy and/or subsequent projects.
- The size of the funding is such that New Zealand firms (which are often smaller than their Australian counterparts) are able to enter into **projects of scale which are truly collaborative** (e.g. with IP sharing agreements as opposed to straight fee for contract deals).

A key focus of the ANZBPF (and the Large-scale collaborative trans-Tasman projects in particular) is the creation of spillovers to the wider New Zealand biotechnology sector. The intention is for the alliances created to directly improve the sustained profitability and global competitiveness of the New Zealand biotechnology sector as a whole. An indication of the potential benefits to New Zealand was established for the purposes of this review; however, it is too early in the implementation of the ANZBPF to make any firm conclusions regarding the direct attribution of spillover benefits. Furthermore, quantitative measures of both individual firm performance and wider spillover benefits were not suitable due to the time period involved. At future evaluations of the ANZBPF, work would be required to devise appropriate quantitative measures for these factors.

Benefits to New Zealand observed include:

- The activities undertaken are contributing to the **increased international profile** of New Zealand's biotechnology industry.
- Financial support to participant firms helps to build **individual firm and industry-wide confidence** so that participant firms are more likely to consider New Zealand as a viable location for expansion and growth as opposed to moving offshore.
- Projects are contributing to an **increase in the level of skill and expertise** regarding the commercialisation process (an increase in business and management capability which is able to be transferred to other projects in the future).
- The scale and type of projects undertaken are increasing the **credibility of New Zealand as a location for a greater number of clinical trials** (clinical trials lead to spillover benefits such as learning passed amongst the science community and the development of ancillary services).

Other findings of this review are that:

- **Commercialisation is a core focus** for the ANZBPF. It will be critical that NZTE retain this focus to avoid overlap with other public funding of biotechnology in New Zealand.
- The **scale of funding allocated is of a suitable level** to achieve programme goals.
- The ANZBPF is a good example of where firms in **Australia and New Zealand are working well together** to increase the profile of both countries' biotechnology industries as the 5th largest biotechnology hub in the world.

Other ANZBPF grant categories

While the Large-scale collaborative trans-Tasman projects component of the ANZBPF appears to be effective in meeting its objectives, it is difficult to make similar judgements for the other components of the fund due to the very small number of projects that have been approved (and completed) to date. Only two of the five approved projects under the smaller grant categories had been completed as at December 2006.

However, initial evidence suggests that increasing the frequency of contact between researchers and private sector firms is a valuable contribution to the development of New Zealand's innovation system. The People and skills development category in particular is of real value to the development of the New Zealand biotechnology industry and its ability to connect with opportunities in other parts of the world. Communicating the feedback of lessons learnt to other New Zealand biotechnology firms and firms in other sectors where applicable will be necessary to spread the benefits of these secondments more widely.

There has been limited publicity surrounding the smaller grant components of the ANZBPF. NZTE have expressed their intention to publicise these more heavily from the 2007/08 funding round onwards.

The Australia New Zealand Biotechnology Alliance

The review considers that it is worthwhile for New Zealand to remain a member of the ANZBA as it is a visual symbol of cooperation between the two countries and lends support to the aim of the ANZBPF to increase global recognition of Australasia as a centre of global biotechnology expertise and activity.

Conclusions – programme efficiency

The ANZBPF has encountered some efficiency problems in its first years of operation. These were caused by three main issues:

- **Criteria (in particular, the requirement for matching funding):** A lack of clarity regarding the interpretation of eligible areas for funding (such as in-kind contributions). This has been addressed by NZTE's Business Process Improvement Project.
- **Contracting process:** NZTE did not initially allocate adequate resources to the administration of the fund which led to delays in processing contracts. They also did not provide adequate information to applicant firms regarding the contracting and claims process; and
- **Complexity of relationships between the entities involved:** Firms often require complex contractual relationships with their Australian partner and NZTE is only able to fund the project once these contracts are finalised. Firms are taking up to 12 months to develop their contractual arrangements with their Australian partner. In addition, NZTE did not adequately manage firm expectations around this process.

NZTE is aware of the significance of all these issues and the negative impact that efficiency problems are having on the reputation of the ANZBPF. Recommendations are listed in the following section to address these problems, the majority of which were independently identified by NZTE during the course of its own review of the issues. NZTE have already made significant progress on improving the efficiency of ANZBPF processes.

Recommendations

The recommendations of this review are:

1. The scheduled out years funding for the continued operation of the ANZBPF be confirmed.
2. MED, MoRST and MFAT undertake policy work to investigate any potential future expansion of the fund (such as increasing the budget of the fund and its geographical focus, both within Australia and internationally, and the possible role of the ANZBA in this expansion).
3. NZTE devote more effort towards publicising the smaller elements of the fund (such as People and skills development or Bio-market development) to existing and potential NZTE clients.
4. NZTE use their client relationship system to communicate the lessons learnt from all ANZBPF grant recipients to other firms within the New Zealand biotechnology industry and other industry sectors.
5. NZTE ensure that client expectations regarding the grant process are managed effectively (including providing adequate information to applicants regarding the likely time scale, potential contractual hurdles, and the amount available for funding at each round etc.).
6. NZTE ensure that information is collected on the firms receiving ANZBPF grants under NZTE's client impact and client value surveys in order to make longitudinal judgements regarding programme effectiveness and efficiency for the next review.
7. MED and MoRST review the ANZBPF by December 2012 and incorporate quantitative measures of participant firm performance into this review.

1. Programme policy and objectives

1.1 Programme background

The Australia New Zealand Biotechnology Partnership Fund (ANZBPF) was established in 2003 in response to recommendations from the Growth and Innovation Framework (GIF) Biotechnology Taskforce (EDC Min (03) 22/4 refers). It was funded at \$0.888 million during the scoping and development stage, with an increase to \$2.666 million for its first two years. From 2006/07 onwards it was funded at \$4.444 million per annum (Table 4⁴). Of the total funding allocation, \$0.44 million per annum is allocated towards operational expenditure, with the remaining majority allocated towards project expenditure.

Table 4: ANZBPF funding allocation

Vote Economic, Industry and Regional Development	NZ\$ million (GST exclusive)				
	2003/04	2004/05	2005/06	2006/07	2007/08 and out years
<i>Non-Departmental Output Class: Enabling Services – Facilitating the Development and Implementation of Sector and Regional Strategies</i>	0.888	0.444	0.444	0.444	0.444
<i>Other Expenses to the Incurred by the Crown: International Biotechnology Partnerships</i>	-	2.222	2.222	4.000	4.000
Total	0.888	2.666	2.666	4.444	4.444

The ANZBPF is delivered by New Zealand Trade and Enterprise (NZTE), with technical and other support provided on an as required basis by the Ministry of Research, Science and Technology (MoRST) and the Foundation for Research, Science and Technology (FRST). As at December 2006, NZTE allocated two FTE to the operation of the ANZBPF, with additional resources added where needed e.g. during the assessment phase of applications.

In April 2004 a final terms of reference and criteria for the fund were submitted to the Economic Development Ministers Group and the fund began operations soon after. The first round of applications was approved in February 2005 and the second in March 2006. The third round is currently under consideration and will be approved later in 2007.

1.2 Programme rationale

The ANZBPF was established in response to a number of particular challenges affecting the biotechnology industry, namely the substantial amounts of capital required and the inherently long development and commercialisation timeframes. The ANZBPF was intended to provide assistance specifically targeted to support the commercialisation of New Zealand biotechnology firms. In particular, to provide a larger regional hub as a platform for growth and internationalisation of New Zealand firms, and to develop the agglomeration and knowledge spillovers to the wider biotechnology industry.

The fund's terms of reference identifies the following specific barriers to development of the biotechnology industry in New Zealand:

⁴ Note that the original allocation was listed as GST inclusive and GST not applicable. After the amendments to the Public Finance Act, both of these allocations have become GST exclusive, hence the current GST exclusive presentation. All figures in this report are GST exclusive unless otherwise specified.

- **Lack of scale:** It is widely acknowledged that New Zealand's biotechnology companies lack the critical mass or scale to 'go it alone'. Combining efforts with Australia provides the scale required to access global market opportunities and the necessary capital to commercialise biotechnology research.
- **Lack of commercialisation expertise and specialist skills:** To date, New Zealand biotechnology companies and institutes have built strong global research-to-research links, but not translated this into commercial opportunities. This reflects a lack of experience in commercialisation of biotechnology research in New Zealand. Through this fund, NZTE will support New Zealand's biotechnology companies to form strong international partnerships with the Australian biotechnology industry, and gain greater exposure to best practise in the management and marketing of biotechnology and access to capital.

1.3 Programme objective

The overarching objective of the ANZBPF is to:

“Accelerate the rate at which New Zealand biotechnology companies (including the commercial arms of Crown Research Institutes (CRIs) and Tertiary Education Institutes (TEIs)) build strategic commercial alliances with Australian companies or entities with the view to improving the sustained profitability and global competitiveness of New Zealand's biotechnology sector.”

The sub-goals of the ANZBPF are to:

- Improve commercialisation skills and expertise within the New Zealand biotechnology sector;
- Increase the foreign investment (non-Australian and Australian) in New Zealand's biotechnology sector; and
- Increase global recognition of Australasia as a centre of global biotechnology expertise and activity.

The terms of reference for the ANZBPF identified that these objectives would be achieved by:

- Drawing attention to New Zealand and Australia as an area of regional critical mass and capability in the global biotechnology market and raising awareness of the region's biotechnology capability to international investors;
- Providing a mechanism to leverage significant investment by the Australian government and private sources;
- Expanding international linkages and exposure to best practise in the management, development and marketing of biotechnology;
- Supporting skill development where the need has been identified such as science commercialisation, intellectual property management and project management; and
- Focusing the fund on companies and individuals that have established trans-Tasman relationships and are moving towards commercial ventures.

2. Australia New Zealand Biotechnology Partnership Fund (ANZBPF)

This section describes the ANZBPF, including the categories of assistance, basic information on eligibility criteria, and information on the programme participants as at December 2006. Further detail on the specifics of the funding categories, eligibility criteria, and co-funding requirements and restrictions can be found on the NZTE website at <http://www.nzte.govt.nz/anzbpf>.

2.1 Programme delivery

There are four categories under which the ANZBPF can provide funding:

- **Large scale collaborative trans-Tasman projects:** up to NZ\$0.888 million per company per grant per annum (up to three years) to contribute to the costs of new commercial ventures between eligible New Zealand and Australian companies. This area of the fund is intended to support significant strategic alliances that contribute to developing greater regional strength, sustained profitability, access to, and competitiveness in, international markets. The New Zealand partner must meet at least 25% of the costs and the Australian partner the remaining 50%. NZTE will contribute up to 25% or a maximum of \$1 million (GST inclusive); whichever is the lesser, creating a ratio of 25:25:50.
- **Market acceptance:** up to NZ\$111,111 per company per annum where an applied research area needs to be developed further to meet market needs and is able to attract private investment. The 25:25:50 ratio (New Zealand partner: NZTE: Australian partner) is the same as for the Large-scale collaborative trans-Tasman projects category.
- **People and skills development:** up to NZ\$8,889 per applicant per annum to support commercial skill development.
- **Bio-market development:** up to NZ\$44,444 per company per annum to assist New Zealand companies establish collaborations with business in Australia that open up new, third market opportunities. Funding is offered as 50: 50 co-funding between the New Zealand firm and NZTE.

These four categories are based on a scoping report for the ANZBPF commissioned by NZTE in 2003. The category of 'Market acceptance' was a sub-category of the Large-scale collaborative trans-Tasman projects category for the first two rounds of funding (February 2005 and March 2006) but was promoted as an independent category in the 2007 round.

2.1.1 The Australia New Zealand Biotech Alliance

In addition to providing direct assistance via these four categories, the fund has also provided support to the Australia New Zealand Biotech Alliance (ANZBA). This alliance undertakes joint marketing and investment promotion activities for Australia and New Zealand in global markets.

The ANZBA was established via a memorandum of understanding (MOU) signed by the Governments of New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia, the Australian Capital Territory, the Northern Territory and New Zealand. The MOU was developed to ensure a collaborative Australasian effort towards the developing of leading edge and sustainable biotechnology industries in both countries. All signatories used to contribute an equal amount of funding to the alliance to support a half-time secretariat position based in Melbourne; however, this support now comes exclusively from Victoria. There is no funding currently directed to the ANZBA from New Zealand.

The ANZBA has three guiding principles:

- The Alliance recognises the critical mass and competitive strengths in biotechnology of its member jurisdictions and agrees through collaborative effort to further strengthen and globally market these competitive advantages.
- The Alliance will operate flexibly allowing for further development of its objectives and activities over time.
- The Alliance will develop productive working relations with appropriate industry, government and research organisations in the member jurisdictions.

2.1.2 Offshore events and market development missions

The ANZBPF has also provided support to New Zealand's presence at a number of offshore events and market development missions. These include the annual AusBiotech conference, the Agricultural Biotechnology International Conference (Melbourne 2006), roadshows in Victoria and Queensland, and Biofutures which is a week-long conference for students interested in biotechnology careers and is held in Queensland. The ANZBPF also supported joint Australia-New Zealand networking and trans-Tasman promotion at BIO, the largest annual biotechnology conference held annually in the United States.

Further information on the activities undertaken is detailed in Section 2.2 (Programme spend).

2.2 Eligibility criteria

The 2004 terms of reference for the ANZBPF outlined two principal eligibility criteria:

- Applicant companies and individuals must be operating in the biotechnology industry and have a clear objective to establish commercial trans-Tasman partnerships.
- Applicants must demonstrate how funding will lead to a net economic benefit (i.e. beyond private benefits to the applying firm alone). This may be in the form of, for example, new jobs created or spill over benefits to other firms.

Several other, more technical, criteria were listed, such as requirements for applicants to prove their ability to carry out their part of the joint project and its development. The criteria were intended to ensure applications were approved on their ability to develop new initiatives and directions aimed at building strong partnerships and regional capability between the Australian and New Zealand biotechnology sectors. It was not intended to assist with 'business as usual' activities.

Note that the ANZBPF is open to the commercial arms of Crown Research Institutes and Tertiary Education Institutes as well as other, private sector, biotechnology entities.

2.3 Programme spend

The ANZBPF has been awarded a total of \$10.666 million between 2003/04 and 2006/07 (refer Table 3). Of that, \$9.874 million has been spent, leaving \$0.792 million to be committed by 30 June 2007 (Table 5).

Table 5: ANZBPF programme spend, 2003/04 - 2006/07

	2003/04	2004/05	2005/06	2006/07	Totals
Operational expenditure	\$448,000	\$943,000	\$388,000	\$453,000	\$2,232,000
Fixed costs and fund administration	\$80,000	\$565,000	\$205,000	\$310,000	\$1,160,000
Offshore events/market development missions	\$368,000	\$378,000	\$183,000	\$143,000	\$1,072,000
Grant expenditure	\$0	\$2,186,667	\$2,222,222	\$3,233,334	\$7,642,223
Large scale collaborative trans-Tasman projects	\$0	\$2,177,778	\$2,131,112	\$3,217,778	\$7,526,668
Market acceptance	\$0	\$0	\$0	\$0	\$0
People and skills development	\$0	\$8,889	\$2,222	\$6,667	\$17,778
Bio-market development	\$0	\$0	\$88,888	\$8,889	\$97,777

Budget					
Budget (operational)	\$888,889	\$444,444	\$444,444	\$444,444	\$2,222,221
Budget (grants)	\$0	\$2,222,222	\$2,222,222	\$4,000,000	\$8,444,444
Total budget	\$888,889	\$2,666,666	\$2,666,666	\$4,444,444	\$10,666,665

Actual spend					
Actual spend (operational)	\$448,000	\$943,000	\$388,000	\$453,000	\$2,232,000
Actual spend (grants)	\$0	\$2,186,667	\$2,222,222	\$3,233,334	\$7,642,223
Total actual spend	\$448,000	\$3,129,667	\$2,610,222	\$3,686,334	\$9,874,223
Under or overspend	-\$440,889	\$463,001	-\$56,444	-\$758,110	-\$792,442
Principal reason for under or overspend	Operational expenditure	Operational expenditure	Operational and grant expenditure	Grant expenditure	Grant expenditure (to be committed by 30 June 2007)

Table 5 shows that there has been variation in the level of both operational and grants expenditure over the previous four years. There was considerable underspend in the category of fund administration in 2003/04 in particular, with the majority of operational expenditure going towards offshore events and market development missions. NZTE have stated that they underestimated the administration requirements to establish the fund at this time and that this underspend resulted in some of the efficiency issues that will be discussed in Section 3.4. Since 2003/04 however, NZTE have allocated the majority of the operational expenditure to fixed costs and administration instead of offshore events and market development missions. This has enabled the ANZBPF to employ more staff to administer the fund and reduce some of the efficiency issues faced by the early fund applicants in particular.

NZTE intend to allocate the remaining \$0.792 million by 30 June 2007. Grant applications for this round of funding are currently being assessed, as detailed in the following section.

2.3.1 ANZBPF operational expenditure

As the above section noted, there has been some variation in the allocation of funding across the category of operational expenditure. Table 6 shows the breakdown of operational expenditure for 2003/04 to 2006/07.

Table 6: ANZBPF operational expenditure, 2003/04 - 2006/07

	2003/04	2004/05	2005/06	2006/07	Totals
Fixed costs and fund administration					
NZTE fund administration and overheads	\$80,000	\$150,000	\$180,000	\$250,000	\$660,000
Due diligence		\$10,000	\$10,000	\$20,000	440,000
Project assistance		\$380,000			\$380,000
Legal fees		\$20,000	\$10,000	\$30,000	\$60,000
Panel costs		\$5,000	\$5,000	\$10,000	\$20,000
Totals	<i>\$80,000</i>	<i>\$565,000</i>	<i>\$205,000</i>	<i>\$310,000</i>	<i>\$1,160,000</i>
Offshore events/market development missions					
AusBiotech conference (Aus)	\$150,000	\$200,000	\$80,000	\$80,000	\$510,000
CEO Forum (Aus)	\$35,000	\$35,000			\$70,000
ABIC 2006 (Aus)			\$30,000	\$30,000	\$60,000
VIC & QLD mission and 'NZ biotech' roadshow (Aus)	\$100,000	\$50,000	\$10,000		\$160,000
ANZBA activities (NZ and Aus)	\$50,000	\$10,000	\$10,000	\$20,000	\$90,000
BIO conference (USA)	\$30,000	\$80,000	\$20,000		\$130,000
Biofutures secondary school event (Aus)	\$3,000	\$3,000	\$3,000	\$3,000	\$12,000
Synthesis report (NZ and Aus)			\$30,000	\$10,000	\$40,000
Totals	<i>\$368,000</i>	<i>\$378,000</i>	<i>\$183,000</i>	<i>\$143,000</i>	<i>\$1,072,000</i>
Grand totals	\$448,000	\$943,000	\$388,000	\$453,000	\$2,232,000

A number of offshore events and missions have been undertaken, with the AusBiotech conference, ANZBA activities and Biofutures secondary school event receiving funding across all four years. No further information was collected by MED on the funding allocated towards these activities as they fall under the operational expenditure of the fund and are at the discretion of NZTE. However, as all these activities are all contributing towards improving the awareness of opportunities within the New Zealand biotechnology industry in Australia (and also, to visitors to Australian events, such as the AusBiotech conference) it is likely they are making a useful contribution towards achieving the aims of the ANZBPF.

2.3.2 ANZBPF grants expenditure

As at 1st December 2006, NZTE has approved six Large-scale collaborative trans-Tasman projects (total value of \$7.642 million) and a further five grants for People and skills development and Bio-market development totalling \$115,555 (see Table 7 and Annex 1 for a more detailed spreadsheet of all grant recipients activities and funding including project descriptions). The Large-scale collaborative trans-Tasman projects were approved by the NZTE Board in two major funding rounds of February 2005 and March 2006. The smaller People and skills development and Bio-market development grants were approved as they arose by the NZTE CEO, the NZTE Group General Manager Biotechnology/ICT/Americas, and the NZTE Biotechnology Sector Director.

Table 7: ANZBPF grant funding approved 2004-2006

Type of activity	Name of firm	Date approved	Grant total
Large-scale collaborative trans-Tasman projects	Industrial Research Ltd	February 2005	\$780,000
	Wrightson Ltd		\$2,576,667
	Proacta Therapeutics Ltd		\$1,866,667
	Neuren Pharmaceuticals Ltd		\$525,556
	Keratec Ltd	March 2006	\$888,889
	Livestock Improvement Corporation		\$888,889
People and skills development	AgResearch	December 2004	\$8,889
	Biomatters	June 2006	\$8,889
Bio-market development	AgResearch	June 2006	\$44,444
	Ovita ³	August 2006	\$44,444
	NIWA		\$8,889
			\$7,642,223

Of the total \$7.642 million approved thus far, \$2.2 million in claims has been paid out as of the 1st of December 2006. A further \$1.43 million is anticipated to be paid out by the close of the 2006/07 financial year. The remaining funding will be paid out as milestones are achieved according to the contracts drawn up between NZTE and the entities involved.

NZTE recently closed the third major round of applications and received 21 written expressions of interests from 17 companies totalling \$10.4 million. From these 21, 13 final applications were received from 11 companies totalling \$4.8 million. As a result, one People and skills grant and one Bio-development grant have been recommended for funding. In addition, four Large-scale collaborative trans-Tasman project applications were invited to take place in a second and final, more detailed, assessment process. Three of the four invited into this latter process accepted this invitation by deadline and these applications were assessed by the ANZBPF assessment panel on 26 February 2007. All three, totalling \$1.28 million, were recommended for funding. These recommendations will be considered for approval by the NZTE Board in May 2007. Following approval, these grants will be funded from the remaining \$0.792 million from the 2006/07 budget allocation and the 2007/08 allocation.

2.3.2.1 Large-scale collaborative trans-Tasman projects

Four Large-scale collaborative trans-Tasman projects were approved in February 2005, with a combined grant value of \$5.749 million (Table 8). The largest single grant was a \$2.576 million grant over three years to Wrightson Ltd (now PGG Wrightson) for a project entitled *Designer Ryegrass Development and Commercialisation Programme*. Two further Large-scale collaborative trans-Tasman projects were approved in March 2006 with a combined value of \$1.7 million.

Table 8: Large-scale collaborative trans-Tasman projects grants approved, 2004-2006

New Zealand partner	Type	Date approved	Project completed	Total ANZBPF grant (ex GST)	Project duration	Australian partner
Industrial Research Ltd	CRI	Feb-2005	Yes	\$780,000	2 years	Starpharma (Victoria)
Wrightson	Company	Feb-2005	No	\$2,576,667	3 years	Molecular Plant Breeding Cooperative Research Centre (National)
Proacta Therapeutics	Company	Feb-2005	No	\$1,866,667	3 years	GBS Ventures (Victoria)
Neuren Pharmaceuticals	Company	Feb-2005	No	\$525,556	2 years	Metabolic Pharmaceuticals (Victoria)
Keratec	Company	Mar-2006	No	\$888,889	3 years	Australian Biotechnologies (NSW)
Livestock Improvement Corporation	Company	Mar-2006	No	\$888,889	3 years	Innovative Dairy Products Pty Ltd (Victoria)

Large-scale collaborative trans-Tasman projects have received 98.49% of allocated ANZBPF grants to date. The majority of the relationships are with entities based in Victoria. NZTE consider that this is because the Victorian biotechnology industry is the most commercially advanced in Australia and has excellent industry coordination and support.

2.3.2.2 *People and skills development*

Two People and skills development grants have been approved to date (Table 9). These two \$8,889 grants involved secondments of 6-12 months to a variety of Australian partners to gain knowledge, experience and contacts. People and skills development grants have received 0.23% of allocated ANZBPF funding to date.

Table 9: People and skills development grants approved, 2004-2006

New Zealand partner	Type	Date approved	Project completed	Total ANZBPF grant (ex GST)	Project duration	Australian partner
AgResearch	CRI	Dec-04	Yes	\$8,889	1 year	IMBCom – Institute of Molecular Biosciences' commercialisation division (Queensland)
Biomatters	Company	Jan-06	Yes	\$8,889	6 months	Fisher Biotech (WA), Howard Florey Institute (Victoria), and Phylogica (WA)

2.3.2.3 *Bio-market development*

Three Bio-market development grants have been approved to date, with a combined total value of \$97,777 (Table 10). A \$44,444 Bio-market development grant was awarded to Brainz in June 2005, but this grant was not allocated because company did not claim the funding before the offer expired in late 2006. Bio-market development grants have received 1.28% of allocated ANZBPF funding to date and have been with partners located in either Queensland or Victoria. NZTE

referred to the Queensland biotechnology industry as second only to Victoria in strength and coordination.

Table 10: Bio-market development grants approved, 2004-2006

New Zealand partner	Type	Date approved	Project completed	Total ANZBPF grant (ex GST)	Project duration	Australian partner
AgResearch	CRI	Jun-06	No	\$44,444	3 years	Cleveland Biosensors (Queensland)
Ovita	Company	Jun-06	No	\$44,444	3 years	Diatech Pty Ltd (Queensland)
NIWA	CRI	Aug-06	No	\$8,889	2 years	No specific Australian partner (project is to establish a New Zealand bioactives network with trans-Tasman connections)

3. Findings: effectiveness and efficiency

This section outlines the method and the findings of the review.

3.1 Method

This review is in response to the directive of EDC Min (03) 22/4 to “evaluate the effectiveness of, and ongoing funding requirements for, the Australia / New Zealand Biotechnology Development fund for 2007/08 and out years”.

Qualitative research interviews were undertaken with all six Large-scale collaborative trans-Tasman projects grant recipients from the February 2005 and March 2006 approval rounds. Analysis of application forms, NZTE Board papers and other related documentation was also carried out for these six projects. Completion reports and other material regarding the remaining five People and skills development and Bio-market development grants were also analysed.

NZTE staff involved in the administration of the ANZBPF were heavily involved in the review process and participated in both formal and informal interviews. Other documentation related to the ANZBPF, such as external and internal guidelines and criteria, were analysed.

A further four interviews were conducted with industry and government representatives involved with the biotechnology industry or trans-Tasman relations. These interviews served to inform the research process and identify areas for programme improvement.

This review did not make a quantitative assessment of the effectiveness of the programme (e.g. in terms of revenue gained for participant firms). Quantitative measures were not deemed suitable for this review due to the short time since project approvals. The type of projects undertaken under the Large-scale collaborative trans-Tasman projects category in particular are generally of long-term focus and as such, assessing revenue changes in as little as nine months was not appropriate.

Furthermore, a key focus of the ANZBPF (and the Large-scale collaborative trans-Tasman projects in particular) is the creation of spillovers to the wider New Zealand biotechnology sector. This relates to the intention for the alliances created to directly improve the sustained profitability and global competitiveness of the New Zealand biotechnology sector as a whole. An early indication of benefits to New Zealand was gathered for the purposes of this review; however, it is too early in the implementation of the ANZBPF to make any firm conclusions regarding the direct attribution of spillover benefits.

In addition to not using quantitative measures of revenue gained due to the short time period, quantitative measures of wider spillover benefits were also not deemed suitable. At future evaluations of the ANZBPF, work may be required to devise appropriate quantitative measures for these factors.

3.2 Effectiveness

In its first three years of existence, the ANZBPF appears to be fulfilling an important role in providing a catalyst, and degree of funding for, collaborative commercialisation biotechnology projects between Australia and New Zealand. The following three sections outline the effectiveness of the three different components of the ANZBPF under which funding has been granted to date.

3.2.1 Large-scale collaborative trans-Tasman projects

The ANZBPF is most well known for the Large-scale collaborative trans-Tasman projects. It is also important to note that the majority of the findings and conclusions of this review are related to

these ventures as they have captured the vast majority of funding and comprise the greatest number of completed projects to date.

The grant recipients interviewed identified the following as benefits they saw as a result of ANZBPF involvement:

- The **financial incentive** is encouraging Australian firms to contemplate partnering with a New Zealand firm instead of looking to the United States or Asia;
- The grant leading companies to **think more creatively** about what they could possibly do and who they could partner with to grow their business and realise new opportunities;
- Funded projects proving to the Australian biotechnology industry that New Zealand biotechnology firms have the **scale and expertise** required to make a valuable contribution to strategic activities, with an ongoing effect of including the New Zealand firms in strategy and/or subsequent projects; and
- The size of the funding is such that New Zealand firms (which are often smaller than their Australian counterparts) are able to enter into **projects of scale that are truly collaborative** (e.g. with IP sharing agreements as opposed to straight fee for contract deals).

“It meant we could go to our partner offering some sort of benefit. New Zealand faces Australia, but Australia basically faces the US, then elsewhere, then finally New Zealand. So having some incentive for them to work with us is great.” (David Clarke, Neuren Pharmaceuticals)

“The project is going according to our – very bold – plan. The ANZBPF grant allowed the project to accelerate the manufacturing part of the business and has helped us lock into Starpharma’s strategic process.” (Richard Furneaux, Industrial Research Ltd)

Information from Statistics New Zealand shows that in 2004, New Zealand biotechnology organisations had 12 partnerships or alliances with Australian entities other than universities, but that in 2005, this figure had risen to 90. For the two years, there were approximately 140 agreements reached between entities (including universities) in Australia and New Zealand, meaning that a significant proportion of relationships between the two countries are of a commercial nature. While it is unclear the impact of the ANZBPF in the creation of these deals, the latest New Zealand Biotechnology Industry Growth Report does list the creation of the ANZBPF as an important catalyst in the development of the biotechnology industry in New Zealand⁵.

3.2.1.1 *Benefits to New Zealand as a whole*

In addition to these outcomes which were often directly related to benefits to the individual firm, interviewees were asked how they saw the value coming back to New Zealand as a whole from ANZBPF projects. This is an important point, because investments in biotechnology commercialisation generally require vast sums of money, leading to many firms to sell or licence IP to larger (often US or European-based) firms. Therefore, it is necessary to examine when and where benefits to New Zealand would be likely to occur. Benefits to the New Zealand biotechnology industry as a result of ANZBPF-funded projects included:

⁵ Statistics NZ, *Biotechnology in New Zealand 2004* (July 2005), Table 9; Statistics NZ, *Biotechnology in New Zealand 2005* (July 2006), Table 10; and LEK, *New Zealand Biotechnology Industry Growth Report 2006*, pg 48.

- The activities undertaken are contributing to the **increased international profile** of New Zealand's biotechnology industry (as well as also providing significant benefit to Australia as the ANZBPF is contributing to the awareness of New Zealand and Australia as the 5th largest biotechnology hub in the world).
- Financial support to participant firms helps to build **individual firm and industry-wide confidence** so that participant firms are more likely to consider New Zealand as a viable location for expansion and growth as opposed to moving offshore.
- Projects are contributing to an **increase in the level of skill and expertise** relating to the commercialisation process (an increase in business and management capability that can be transferred to other projects in the future).
- The scale and type of projects undertaken are increasing the **credibility of New Zealand as a location for a greater number of clinical trials** (clinical trials lead to spillover benefits such as learning passed amongst the science community and the development of ancillary services).

"If you look at the difference it's made to us, I think the importance of the fund is hugely underestimated. The funding has allowed us to develop pathways that other companies now want to follow – this shows that the model is right." (Colin Ansell, PGG Wrightson)

3.2.1.2 Commercialisation fund

The specific nature of the ANZBPF (with particular regard to the Large-scale collaborative trans-Tasman projects) as a commercialisation fund is seen as an absolutely core reason behind its success.

"It is very important; it is the key component of this grant. There are too many funds solely for research. We need to get better at the commercialisation side of things, get into clinical trials because that's where the dollars and the returns are." (David Clarke, Neuren Pharmaceuticals Ltd)

"Commercialisation is everything for us." (Colin Ansell, PGG Wrightson)

This is due to the fund filling a gap between other grants which are research focused, and private equity deals that may be out of reach for a number of New Zealand firms. A commercialisation focus develops the capability of the New Zealand industry to analyse and pre-empt market needs. The focus on the commercial element has also led to benefits such as reducing the time to market for participant firms:

"As a result of this project, learning about the market, and working with the materials we have been able to work with a US supplier of demineralised technology – we could never have done that without the experience of this project. It has completely cut the time to market by a number of years and as a result, we should probably get to the US just as quick as we will to Australia." (Bruce Foulds, Keratec Ltd)

It is important to note that while some Australian firms are larger than those found in New Zealand, particularly in areas such as pharmaceuticals, they are often still early stage entities by global standards. Therefore, it is likely that offering commercialisation funding which is attractive to Australian entities may increase the possibility of them choosing to work with New Zealand partners, as opposed to others.

However, some difficulties have been encountered by New Zealand firms when establishing partnership arrangements with Australian entities due to the different foci the two countries place on their biotechnology funds. Whereas the ANZBPF is a strictly commercial fund (to fill the niche

left by other research funds operated by agencies such as FRST), the majority of Australian funding appears to be for biotechnology research:

“We have found it difficult in terms of the funding requirements being different in New Zealand and Australia. The ANZBPF is all about the D component of R&D while the Australian funding is generally about the R aspect. Bringing the project together to accommodate the two perspectives/funding requirements has been difficult. However, NZTE understand this difficulty and realise that it may mean that some of the Australian contribution to the research may be outside the scope of the ANZBPF.” (Bruce Foulds, Keratec Ltd)

Moreover, the nature of the funding sourced by the Australian partner is not dictated by the ANZBPF. The Australian partner has freedom to source funding from sources as diverse as shareholders, venture capital, retained earnings, or government or other grants. This means that the Australian component of the ANZBPF project could be to undertake more research-focused work, with the commercialisation element carried out by the New Zealand partner (as the latter is the ANZBPF applicant complying with ANZBPF requirements).

While it may be challenge to mesh the priorities of the two countries biotechnology agendas together, it does not negate the benefit that the ANZBPF provides as a commercialisation fund for New Zealand biotechnology firms. It will be critical for NZTE to continue to ensure the ANZBPF remains focused on commercialisation and bringing products to market.

3.2.1.3 Would the projects have gone ahead without funding?

All recipients of Large-scale collaborative trans-Tasman projects funding were asked whether they believed their project would have gone ahead without ANZBPF funding. The majority believed that their projects would either definitely not have gone ahead, or it would have been very unlikely to proceed (Table 11).

Table 11: Effect of ANZBPF grant on Large-scale collaborative trans-Tasman projects

New Zealand partner	Would the project have gone ahead anyway?	Significant difference funding made
Industrial Research Ltd	Unlikely	The speed at which the project developed was the principal difference as the grant made the project move at a faster rate than it would have naturally. IRL believe they would have probably lost their business with their Australian partner without the grant.
Wrightson	Yes	The funding enabled the project to remain on track and succeed despite uncertainty surrounding the merger with PGG.
Proacta Therapeutics Ltd	Yes	Had the science Proacta was developing been applicable for commercialisation, they believe the level of financial confidence would have been helpful for the project.
Neuren Pharmaceuticals Ltd	Unlikely	The funding gave the Australian partner an incentive to turn to New Zealand and work with Neuren, as opposed to working with a US partner. They believe it gave them a comparative advantage.
Keratec Ltd	No	The grant gave Keratec critical mass at a critical time in the business' development and meant the company could move quickly to market. Without the funding they consider it would have probably remained an interesting idea that would have just sat there. The backing of NZTE also gave the firm credibility.
Livestock Improvement Corporation	No	Having the specifically Australia-New Zealand funding arrangement created the right momentum to get the project underway. LIC would have been unlikely to discuss the project with Australia if the neutral ground of the ANZBPF hadn't presented itself.

The remaining two companies that believed their projects would most likely have gone ahead anyway, Wrightson Ltd and Proacta Therapeutics Ltd, nevertheless identified a number of impediments to their projects had funding been unavailable. These included:

- Projects would have been of a smaller scale and of a shorter duration
- Projects may not have survived changes in firm structure or withstood other shocks (e.g. the PGG Wrightson merger)

“I can’t tell you how useful this fund has been. It helped provide focus to the project and provided protection and certainty against external influences. The funding provided continuity to the project during the merger between PGG and Wrightson. We were able to stick to targets and able to continue delivering results.” (Colin Ansell, PGG Wrightson)

- Speed at which products were able to be moved through the commercialisation process

These delay and scale issues lend credence to the view that the ANZBPF is making an important difference to these commercial biotechnology projects. In the biotechnology industry, speed to market is critical, particularly due to issues of patent life where the quicker a company is to market, the quicker it can recoup value. It can also recoup value over a longer term or negotiate a far more favourable licensing agreement. As some of these projects have projected market valuations of upwards of NZ\$1 billion, anything which assists firms capture first mover advantage is of value.

“Drug companies that develop and launch new products faster than their peers perform consistently better across a number of dimensions, earn higher revenues, and have lower development costs.” (Tufts Center for the Study of Drug Development, September 2006)

3.2.1.4 Scale of funding

The majority of interview participants considered that the present scale of funding (\$1 million per annum, GST inclusive) was a suitable level of funding. At the time of the review, there was a three year cap on the number of years a project could run, meaning that very substantial projects could be funded. For example, a \$1 million per annum grant over three years would mean a \$12 million minimum project according to the 25:25:50 matching funding requirement. Applicants are able to re-apply for subsequent funding rounds for different projects so it does not disadvantage the likelihood of developing different components of an applicant’s business.

Figure 1 shows that the Large-scale collaborative trans-Tasman projects that are funded by the ANZBPF are generally larger than the minimum required under the 25:25:50 criteria and that none have surpassed the 25% threshold⁶. For example, the grant offered to Wrightson Ltd only comprised 12.5% of the total cost of the project undertaken. This could suggest that the scale of funding is suitable as either project partners are capable of obtaining funding from other sources to meet their needs or projects are being created near to the minimum ratio of the fund. It could also suggest that projects are being put forward to meet the maximum cap of the fund and there are larger opportunities that are not being catered for. However, as one of the aims of the ANZBPF is to stimulate the Australia New Zealand biotechnology market, these larger opportunities should be able to be addressed by private sector capital making the first scenario more likely.

⁶ This information is presented in a GST inclusive format because the total project value figures (which include Australian and New Zealand funding) include GST from both countries.

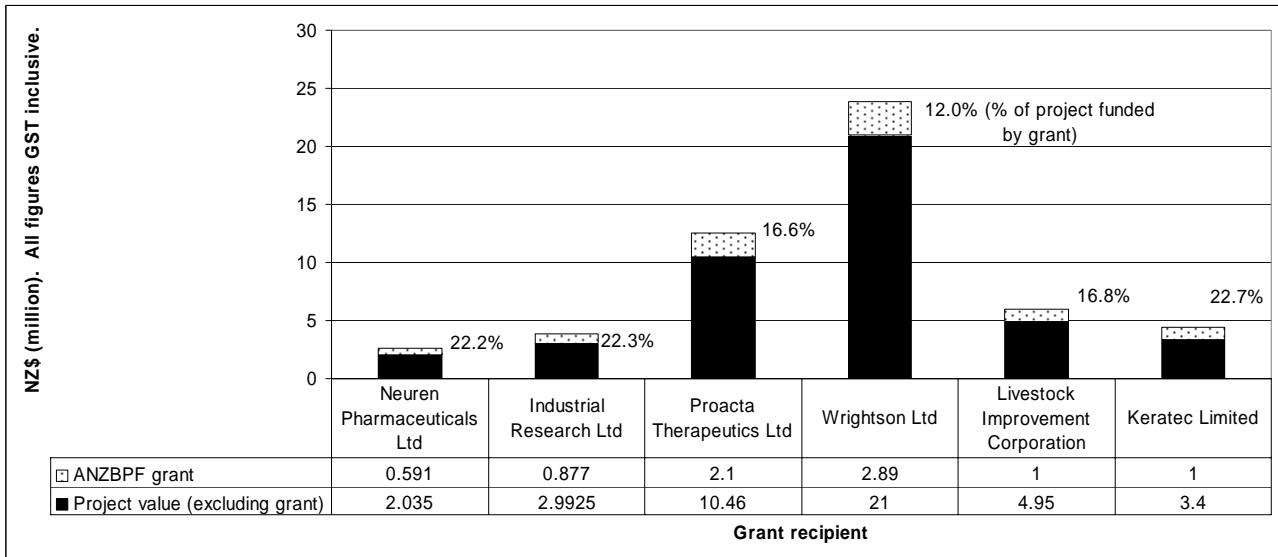


Figure 1: ANZBPF Large-scale collaborative trans-Tasman projects funding

There was some uncertainty among interviewees as to the scale of funding that is able to be applied for. While some recipients received grants of \$1 million per year for a number of years, others were told that grants of over \$1 million would not be allowed, regardless of the time period:

“We bid for \$2 million over two years, but were told that wasn’t allowed. You could very easily misread the instructions. But then again, Wrightson got a grant of that size so it’s very strange.” (Richard Furneaux, Industrial Research Ltd)

The reason behind the variation in funding offered is due to the way NZTE interpreted the funding. Much of the early documentation for the ANZBPF explains it as a \$12 million (GST inclusive) fund with a four year duration. This incorporates the funding from 2003/04 to 2006/07. NZTE released the amount of funding per round according to what remained following the subsequent years approval (Figure 2).

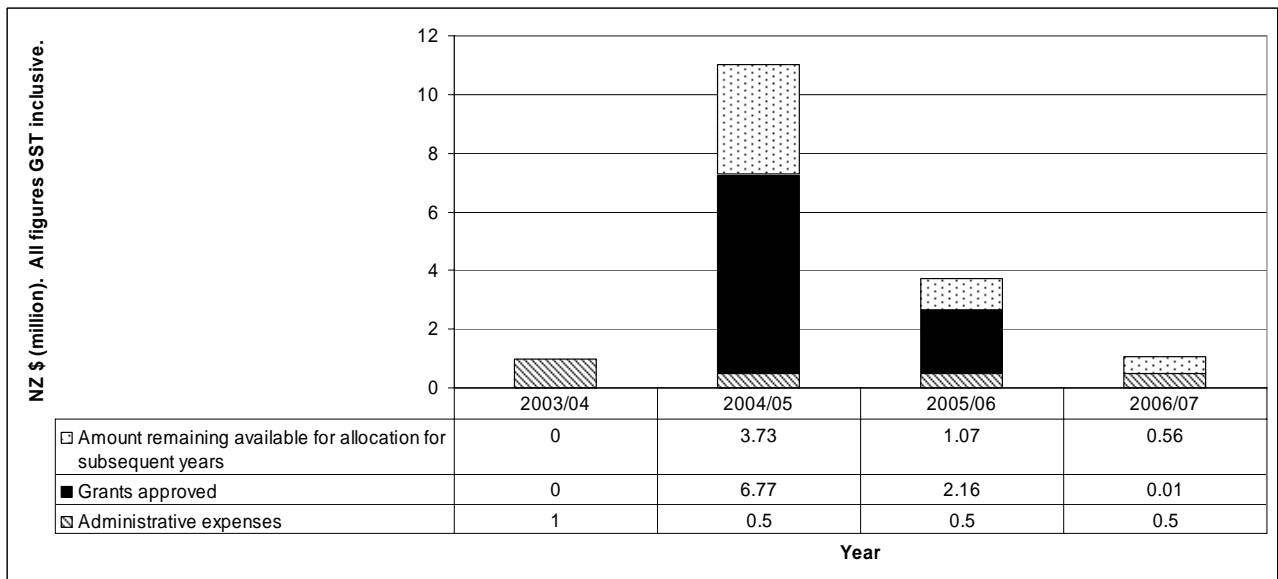


Figure 2: ANZBPF funding allocation 2003/04 - 2006/07

Figure 2 shows that as a result of a large amount of funding granted in 2004/05 in particular (and a lesser extent, granted in 2005/06), just over \$1 million (GST inclusive) remained available for allocation in the 2006/07 year. However, because a further \$5 million (GST inclusive) of funding is to be allocated to the ANZBPF for 2007/08 and out years, NZTE should be able to continue to approve significant projects.

NZTE will approve projects of merit when they appear even if it means reducing the amount of funding available for subsequent years. This had led to bold and substantial projects being funded so it is a direction which is worth continuing. NZTE have recognised the need to make it clearer to potential applicants the amount available for funding and why at the opening of each funding round.

3.2.2 Other ANZBPF grant categories

According to the funding allocated to date, 98.49% has been for Large-scale collaborative trans-Tasman projects, 0.23% for People and skills development and 1.28% to Bio-market development. Therefore it is unsurprising that it is for the large-scale funding for which the ANZBPF is most well known. When asked about the importance of the other elements of the grant (such as People and skills development or Bio-market development), the majority of Large-scale collaborative trans-Tasman projects interviewees replied that they were not even aware that these components existed. This suggests that the market targeted for the Large-scale collaborative trans-Tasman projects may be different to that which would need to be targeted for the other categories. What is certain is that NZTE have undertaken more limited publicity for the other three categories of grant funding.

NZTE also operate a three tiered system for identifying and working with biotechnology companies. Ensuring that firms on all three tiers are aware of the fund and its components would increase the profile of the other categories and would help to ensure the best possible applications are being received. Undertaking publicity to firms that may not be involved with NZTE may also be beneficial in attracting new projects to take place. While it is unsurprising that NZTE would focus on developing the large-scale component in the initial years of the programme (in order to get the ANZBPF well off the ground), it is expected that the smaller components will comprise a greater proportion of funding in the future. NZTE have expressed an intention to publicise these components more heavily. This could take the form of a campaign involving NZBio, university commercialisation groups and CRIs. Publicising these components could also act as a feeder to the Large-scale collaborative trans-Tasman projects as more potential applicants understood the aims of the fund, and in particular, its commercialisation focus.

3.2.2.1 People and skills development

Two People and skills development projects have been approved as at December 2006. The first, Dr. Warren Parker's 10 month secondment from AgResearch Ltd to IMBcom Pty Ltd, Queensland Bioscience Precinct, was to build trans-Tasman links in biotechnology by:

- Connecting scientists/science teams with common or complementary project interests;
- Introducing venture capital to investment opportunities in Queensland;
- Linking technology/IP to New Zealand start-up entities;
- Arranging schedules and hosting representatives of New Zealand biotechnology to Queensland;
- Working with Queensland Department of State Development and Innovation to develop opportunities and support budget proposals for new funding;

- Presenting (and participating in) seminars and lectures outlining New Zealand biotechnology capabilities and achievements; and
- Visiting organisations involved in biotechnology with high potential for collaboration with New Zealand.

The objectives of the secondment were achieved in full; however, details of some of the project development outcomes are unable to be discussed here due to commercial confidentiality purposes. What is able to be discussed are the lessons learnt from the exchange. These include the:

- Advantage of an 'on-the-ground' presence to build contact and information networks about policy, industry and research;
- Importance of engaging senior people in organisations who can influence decision-making;
- Timeframe to 'lock-in' new business collaboration occurs in stages (discovery 4-6 weeks, engaging the parties 4-12 weeks, deal proposal 8+ weeks) so a portfolio of work at various stages of the pipeline needs to be established and sustained. (A corollary is that traction in building business requires a minimum secondment period of six months);
- Need to maintain regular communication to keep up with developments in the supporting New Zealand organisation and also the New Zealand economy so the person on secondment is not 'left behind'; and
- Challenge of forming a collaborative paradigm in science-business when most past behaviour has been insular and highly contestable.

These lessons show that this type of activity is of real value to the development of the New Zealand biotechnology industry and its ability to connect with opportunities in other parts of the world. Communicating the feedback of lessons learnt to other New Zealand biotechnology firms would also be beneficial to spread the benefits of these secondments to the wider industry. Increasing the frequency of contact between researchers and private sector firms is a valuable contribution to the development of New Zealand's innovation system and this component of the ANZBPF deserves greater prominence in the future.

"The skills transfer component has been important...as it helps get a broader understanding across the wider organisation as opposed to one type of person mixing with another type of person (e.g. scientists with scientists, CEs with CEs etc.)." (Colin Ansell, PGG Wrightson)

The Biomatters secondment consisted of a six-month (October 2005 – April 2006) relocation of their Product Development Manager to increase Biomatters' skills, knowledge and contacts with the Australian biotechnology sector in order to penetrate the market and develop collaborative opportunities for further product development. Biomatters developed significant relationships with the Howard Florey Institute in Melbourne and with Fisher Biotech, and a greater understanding of the needs and requirements of the Australian market. The physical, in-market presence that the secondment allowed has also encouraged the development of ongoing relationships between Biomatters and the Australian hosts.

3.2.2.2 *Bio-market development*

As Table 10 shows, none of the projects for which the three Bio-market development grants were approved have been completed. Therefore, no effectiveness information is available for this review. Further grants are anticipated to be awarded in this category in the future and information should be available for future evaluation purposes.

3.2.2.3 Market acceptance

For the first two years of the fund's operation, the category of Market acceptance (grants up to \$0.111 million) was included as a category within the Large-scale trans-Tasman collaborative projects (up to \$0.888 million). Explicit listing of Market acceptance as a separate grant category in the 2006/07 funding round led to receipt of three applications of this magnitude (although none were approved). NZTE intend to continue to market this category separately in the future.

3.2.3 The Australia New Zealand Biotechnology Alliance

New Zealand's participation in the Australia New Zealand Biotechnology Alliance (ANZBA) was viewed by NZTE representatives in Melbourne as a "*good and bold gesture*" as it enables New Zealand's perspective and attributes to be well represented across the Tasman. However, because the ANZBA is a very small initiative and receives minimal funding, NZTE Melbourne considered that it was not actually producing much in the way of demonstrative results. Much of the work between the two countries regarding biotechnology occurs outside the ambit of the ANZBA, for instance, between New Zealand and particular states. NZTE Melbourne emphasised the strong rivalry that still exists between Australian states and territories (for funding, investment opportunities etc.) and the fact that this high degree of competition means gaining consensus via the ANZBA has been difficult.

Despite these challenges, and the fact that New Zealand membership of the ANZBA would by no means be solely dependent on the findings of this review, it appears worthwhile for New Zealand to remain a member of the ANZBA. This is because it provides a strategic umbrella under which New Zealand can engage with the Australian states and territories and is also the only Australian state organisation that New Zealand is a member (without the Australian federal government also being involved). It provides a basis for future expansion of the relationship between and two countries either with regard to developing the ANZBPF further or via other mechanisms. It is also a visual symbol of cooperation between the two countries and lends support to the aim of the ANZBPF to increase global recognition of Australasia as a centre of global biotechnology expertise and activity.

3.3 Fit with other biotechnology funding sources

While there is significant funding available to the biotechnology industry in New Zealand (for instance, through the Technology for Business Growth grants offered by TechNZ or via the International Investment Opportunities Fund offered by the Foundation for Research, Science and Technology), the ANZBPF appears to be capturing an important niche not covered by other funds. The ANZBPF's main point of difference is that it is a fund for biotechnology commercialisation, rather than research.

The review asked all interviewees how important they considered the commercialisation focus of the ANZBPF to be. As seen in Section 3.2.1.1, all claimed that it was one of, if not the most, important elements of the fund.

"It is absolutely critical – we don't often appreciate the difficulty of turning research into something saleable and it's not easy to get private sector money into the area because of the high technical risk." (Brian Ward, NZ Bio)

While some funds do offer funding for biotechnology commercialisation, such as FRST's Pre-seed accelerator fund (PSAF), they operate in a very different arena to the ANZBPF. In the case of the PSAF, it is only open to public-sector research organisations and only provides funding of up to \$250,000 per annum (GST inclusive) for up to two years. This is significantly less than is available under the ANZBPF and its public-sector focus is more limited than what is possible under the ANZBPF. Therefore, the ANZBPF appears to be filling an important niche and does not overlap significantly with any other sources of public biotechnology funding in New Zealand.

3.3.1 Awareness of New Zealand and Australia as a biotechnology hub

One of the goals of the ANZBPF is to increase the awareness of New Zealand and Australia as a biotechnology hub via collaboration between entities from the two countries. All interview participants believed that the perception of Australia and New Zealand as a source of credible biotechnology applications had increased markedly over the previous few years. While a number of other activities have also contributed to this outcome (such as the creation of NZBio, the creation of the SciTech index by the New Zealand Stock Exchange or significant successes in the industry such as three companies raising funds on the Australian Stock Exchange⁷) the activities funded by the ANZBPF have also played a part.

“There is no question it has increased. There is a palpable sense of excitement around New Zealand and Australia in the investment community. Bonding New Zealand and Australia together gives us a real presence; it looks good for all parties.” (Richard Furneaux, Industrial Research Ltd)

The increased awareness to which the ANZBPF is contributing is also of benefit to Australia. The ANZBPF is a good example of an initiative where firms in both countries are working well together and this is lending greater credibility to the industries in both countries.

3.4 Efficiency

The review process uncovered significant concerns around the efficiency of the ANZBPF process with all interview participants independently raising issues of contract efficiency, in particular, the time taken between grant approval and contract finalisation.

“It was a huge struggle going through the claims process and I am aware that other grant recipients are having this problem too. I estimate we spent between 2-300 hours on this claim. The Proacta board are even beginning to ask whether it is worth applying the energy to this grant because of all the hassle the company has gone through. When it is a grant of this magnitude and these questions are beginning to be asked, then you know the transaction costs are getting far too high.” (Nicole Fowler, Proacta Therapeutics Ltd)

The review uncovered two principal reasons for significant time delays experienced by applicants regarding the contractual process. The first are delays on behalf of NZTE. Several interviewees (including government representatives) considered that NZTE did not allocate an adequate proportion of the funding available to establish the fund to its administration in its first few years of existence. These claims are also backed up by the expenditure information outlined in Section 2.3.1. This resulted in inadequate information being provided to applicant firms and delays in grant placement and in the processing of grant claims.

“We found it a bit difficult with NZTE as they were passive in their management of the fund. It was very difficult to get a clear direction as to the process of the grant. We never got any written directions; it was only verbal and quite vague. We went to NZTE to clarify and came back with hand-written notes which were never clear enough; we had to keep going back to get more information about what was needed.” (Suzanne Bertrand, Livestock Improvement Corporation)

“We had huge difficulties in getting the documentation right as there was no clear signal from NZTE as to what was needed.” (Nicole Fowler, Proacta Therapeutics Ltd)

⁷ The *New Zealand Biotechnology Industry Growth Report 2006* contains a vast amount of detail on recent successes and capabilities in the industry.

The second are delays on behalf of the applicant firms as they finalised their own complex contractual arrangements with their Australian partner before arranging the contract for funding with NZTE. While NZTE first confirms grant funding with the New Zealand partner, this is conditional on seeing an Australia/New Zealand partnership agreement that is satisfactory to the ANZBPF assessment panel. This is because the Australia/New Zealand agreement will contain intellectual property (IP) clauses that determine where financial benefits will flow and thus confirm the net economic benefit argument on which the grant was confirmed. NZTE are then in a position to process grant claims.

“We developed a memorandum of understanding to create a joint venture to enable the companies to use the fund and it isn’t done yet. It has taken longer than expected because Innovative Dairy Products had to secure their own funding from their partners. Now a third party has entered the project and we need to re-write the memorandum with them. So it has been a very long process of getting the ANZBPF contract re-drawn and finalised.” (Suzanne Bertrand, Livestock Improvement Corporation)

NZTE are aware that there are significant issues in terms of managing client expectations around the time and effort required to approve an ANZBPF grant (and particularly, for the Large-scale collaborative trans-Tasman projects). While there were minimal comments regarding the efficiency of the application process, the significant number of comments concerning contractual processes indicates that work needs to be done in this area.

“NZTE need to make it more obvious up front what the costs of accepting an ANZBPF grant would be. It took three solid weeks of my time to report on what the money was spent on as the standard of proof is too high. This is a huge waste of money, particularly considering it would be at least that much work for NZTE as well.” (Richard Furneaux, Industrial Research Ltd)

Therefore, in terms of the contracting process, NZTE needs to manage the expectations of applicant firms more effectively. They also need to provide more information and resource the administration of the grant adequately to reduce time delays. NZTE have increased the personnel allocated to the ANZBPF, for example, a lawyer has been appointed as the full-time operations manager of the ANZBPF team and a legal representative has been incorporated onto the assessment panel to help identify potential legal complications before they arise.

In terms of the complexity of relationships, this will likely always remain an unavoidable part of such large deals between entities located in different countries. No constraints are applied to the form of collaboration, other than it must be legal and operate to best meet the objectives of the fund. Ensuring that there is an adequate supply of information about the nature of the ANZBPF process and potential contractual hurdles should help minimise some of the frustration felt by applicants.

3.4.1 Business Process Improvement Project

In addition to managing client expectations of accountability requirements, it is also necessary to ensure that these requirements are not outweighing potential benefits (whilst recognising that it is important to ensure that public funds are used in a prudent and accountable manner). As a part of NZTE’s Business Process Improvement (BPI) project, there have already been some changes to the criteria and contractual arrangements for the ANZBPF, with more lined up for final approval. The BPI project is assessing all NZTE grant and some operational programmes against its grants and programmes administration framework which incorporates the recommendations contained within the 2004 Office of the Auditor General report on NZTE’s administration of grant programmes.

The BPI project identified three central efficiency issues facing the fund:

- Criteria (in particular, the lack of definition of eligible matching funding categories);

- Contracting process; and
- Complexity of relationships between the entities involved.

The issues surrounding the contracting process and complexity of relationships are discussed in the section above, but the issue of criteria and matching funding has been addressed through a paper to the Ministers of Economic Development, Research, Science and Technology, Trade and Finance. The requirement for matching funding (25% New Zealand partner, 25% NZTE, 50% Australian partner) is considered a sound basis for developing partnerships, as it ensures that all project partners have a stake in the success of the project. While the funding contribution is specified, the structure of the commercialisation partnerships has not been. This enables commercial drivers to determine the best partnership model in each case.

Assessing the requirement for matching funding in strict accounting terms would not be possible for the majority of the Large-scale collaborative trans-Tasman projects arrangements particularly as they often involve activities which are difficult to quantify (such as eligible in-kind contributions including wages and associated overheads). NZTE has interpreted the nature of project contributions in a flexible manner on a case-by-case basis to accommodate the very divergent nature of projects and collaborative structures. While, for example, flexibility in terms of in-kind projects costs is desired so that applications which meet the intent of the fund are able to be funded, a clear distinction will remain between project specific costs and business-as-usual costs.

The paper sought formalisation of this flexible approach to matching cost definitions and included the requirement that the proportionality of funding contributions is applied to the initial project structure and for the life of the contract. It also recommended that further partners that are not from Australia or New Zealand may join the partnership for the purposes of improving its commercial potential at any time after the project is approved without affecting the partnerships eligibility, provided the original 25:25:50 project proportions are not compromised.

With this approach approved, the BPI project considers that delays as a result of criteria ambiguity should be largely eliminated from future ANZBPF funding rounds. NZTE have also indicated that whereas some contracts were taking upwards of 18 months to finalise, they are aiming to reduce this time for the present round of funding.

Another important point to note on the topic of efficiency is that the ANZBPF is providing funding for particular projects, and not to the companies to use as they see fit across their business. As is sometimes the case in the biotechnology industry, the results of the science undertaken may mean that the project is not commercially viable. Should this occur, the ANZBPF funding would not be transferable to other projects without re-approval by the ANZBPF assessment panel (or in the case of the smaller grants, the NZTE representative that approved the grant) or via another application to a subsequent round of funding. Making this requirement clear to potential applicants should, again, help to manage client expectations of the fund.

3.5 Future options

A number of future options for the development of the ANZBPF were suggested by interviewees during the review process. This section outlines the main options proposed as well as detailing the risks and benefits associated with each and the context in which any developments would sit. These options are designed to provide input into any future policy work undertaken on the ANZBPF.

3.5.1 Creating a matching fund with Australia

Some interview participants believed that creating a matching fund with Australia would make it easier to establish true working partnerships between entities in the two countries. The possibility exists for NZTE to work with either Australia at the federal level, or with a particular state such as

Victoria or Queensland, to establish a matching ANZBPF. Alternatively, the ANZBPF as it presently exists could be disestablished and a single fund established supported by both countries.

The benefits could include:

- Firms in both countries having a clearer expectation of how the process works (with matching goals, objectives, and criteria for both countries);
- A larger fund able to support either more projects or a similar number at a greater scale; and
- Greater publicity in Australia of the benefits of working with New Zealand firms and so more collaborations occurring between the two countries.
- A boost to the efforts to create a Single Economic Market (SEM) between Australia and New Zealand with greater levels of industry cooperation to enhance the region's competitiveness and influence globally.

However, several risks must be kept in mind when thinking of creating a matching or joint fund. These include:

- Administrative challenges of establishing and running a fund between two countries with different accounting systems and requirements;
- Establishing new policy and operational frameworks (such as criteria) in such a way so that firms in both countries are benefiting in a relatively equal manner from participation;
- Reduction in flexibility in partner choice for the New Zealand firm if the Australian partner is obligated to seek government funding, for which some preferred Australian partners may be ineligible; and
- Loss of timeliness of grant placement due to need for greater consultation (Australian state and federal level) on funding decisions.

It is also important to note that programmes exist in Australia which are complementary to the ANZBPF. For example, Queensland operates a National and International Research Alliances Program which has as its first aim to “*provide support for Queensland industry and research organisations/institutions to participate in the State's national and international alliance programs such as the Queensland-New Zealand Biotechnology Alliance*”. While some of the specifics differ (the programme is more focused towards research and discovery (although does provide for commercialisation via funding for ‘innovation’), provides matching funding on a 1:1 ratio, and requires no less than 25% of the matched contribution to be from the alliance partner), it is designed along very similar lines to the ANZBPF⁸. Developing stronger connections between funds such as these may be the most administratively straightforward way to jointly fund projects between the two countries.

Further discussions would be required between officials and industry in both countries to determine whether there is the desire for creating matching or joint funds. Decisions regarding operational and administrative aspects would also be critical to discuss early. However, it does appear vital to keep some of the ANZBPF directly focused on Australia. As David Clarke from Neuren Pharmaceuticals Ltd argues,

⁸ This fund was modelled heavily on the ANZBPF and NZTE officials held discussions with Queensland state officials regarding the funding framework prior to the Queensland programme being established.

“New Zealand is small, so building the right collaborations and getting the right capital is critical. Australian deals are not as lucrative and there are potentially less strategic opportunities compared to a big US pharma, but collaborations with Australia are extremely worthwhile, particularly for fledgling companies. Australians recognise good opportunities here and see us more attractively than do the US or Asia. Distance does matter!”

3.5.2 Expanding the ANZBPF internationally

Another possibility for the future of the ANZBPF is to expand the scope beyond Australia. In the Growth and Innovation Framework cabinet papers that established the ANZBPF, the funding was originally allocated for *International Biotechnology Partnerships*, of which the Australia/New Zealand partnership was the first. The fund could be extended to other areas where New Zealand biotechnology firms have interests, such as the United States (including Iowa where NZTE recently signed a memorandum of understanding, or the West Coast which is a key market for pharmaceutical ventures), Asia, or South America.

It could operate on a very flexible basis, whereby the New Zealand partner could apply with any other partner, regardless of their location. This would enable firms to make partnership and investment decisions at the location most suitable for their stage of development. It would not contribute to the goal of increasing the perception of Australasia as a biotechnology hub, but this could be circumvented by allocating a proportion of the fund towards Australia-focused activities.

Research identifying market opportunities for the New Zealand biotechnology industry would be required in order to provide the rationale for expanding the ANZBPF model further.

- Using the fund to increase New Zealand's profile in previously unknown areas of expertise/comparative advantage such as clinical trials or medical devices; and
- Looking carefully at the different components of the fund and identifying which are likely to contribute the most value to the industry as a whole.

Again, policy work supported by adequate market research on opportunities for New Zealand firms would need to be undertaken in order to analyse the benefits of potential future expansion. The ANZBPF would also need to be resourced adequately should its scope be extended.

4. Conclusions and recommendations

This section outlines the conclusions of the review and recommendations for improving the effectiveness and efficiency of the ANZBPF.

4.1 Conclusions

The key conclusion of this review is that its first three years of existence, the ANZBPF appears to be fulfilling an important role in providing a catalyst, and degree of funding for, collaborative commercialisation biotechnology projects between Australia and New Zealand.

4.1.1 Effectiveness

4.1.1.1 *Large-scale collaborative trans-Tasman projects*

The information gathered during this review indicates that the Large-scale collaborative trans-Tasman projects approved are accelerating the rate at which New Zealand biotechnology companies are building strategic commercial alliances with Australian companies or entities. It also suggests that the ANZBPF is making a significant difference to the opportunities New Zealand biotechnology firms are able to capture. Where projects would have been undertaken without funding, the ANZBPF is contributing towards the greater likelihood of project success in terms of durability against shock and speed to market.

Benefits observed as a result of participation in Large-scale collaborative trans-Tasman projects include:

- The **financial incentive** is encouraging Australian firms to contemplate partnering with a New Zealand firm before looking to the United States or Asia.
- The grant is leading companies to **think more creatively** about what they could possibly do and who they could partner with to grow their business and realise new opportunities.
- Funded projects are proving to the Australian biotechnology industry that New Zealand biotechnology firms have the **scale and expertise** required to make a valuable contribution to strategic activities, with an ongoing effect of including the New Zealand firms in strategy and/or subsequent projects.
- The size of the funding is such that New Zealand firms (which are often smaller than their Australian counterparts) are able to enter into **projects of scale which are truly collaborative** (e.g. with IP sharing agreements as opposed to straight fee for contract deals).

A key focus of the ANZBPF (and the Large-scale collaborative trans-Tasman projects in particular) is the creation of spillovers to the wider New Zealand biotechnology sector. The intention is for the alliances created to directly improve the sustained profitability and global competitiveness of the New Zealand biotechnology sector as a whole. An indication of potential benefits to New Zealand was established for the purposes of this review; however, it is too early in the implementation of the ANZBPF to make any firm conclusions regarding the direct attribution of spillover benefits. Furthermore, quantitative measures of both individual firm performance and wider spillover benefits were not suitable due to the time period involved. At future evaluations of the ANZBPF, work would be required to devise appropriate quantitative measures for these factors.

Benefits to New Zealand include:

- The activities undertaken are contributing to the **increased international profile** of New Zealand's biotechnology industry.

- Financial support to participant firms helps to build **individual firm and industry-wide confidence** so that participant firms are more likely to consider New Zealand as a viable location for expansion and growth as opposed to moving offshore.
- Projects are contributing to an **increase in the level of skill and expertise** regarding the commercialisation process (an increase in business and management capability which is able to be transferred to other projects in the future).
- The scale and type of projects undertaken are increasing the **credibility of New Zealand as a location for a greater number of clinical trials** (clinical trials lead to spillover benefits such as learning passed amongst the science community and the development of ancillary services).

Other conclusions of this review are that:

- **Commercialisation is a core focus** for the ANZBPF. It will be critical that NZTE retain this focus to avoid overlap with other public funding of biotechnology in New Zealand.
- The **scale of funding allocated is of a suitable level** to achieve programme goals.
- The ANZBPF is a good example of where firms in **Australia and New Zealand are working well together** to increase the profile of both countries' biotechnology industries as the 5th largest biotechnology hub in the world.

4.1.1.2 *Other ANZBPF grant categories*

While the Large-scale collaborative trans-Tasman projects component of the ANZBPF appears to be effective in meeting its objectives, it is difficult to make similar judgements for the other components of the fund due to the very small number of projects that have been approved (and completed) to date. Only two of the five approved projects under the smaller grant categories had been completed as at December 2006.

However, initial evidence suggests that increasing the frequency of contact between researchers and private sector firms is a valuable contribution to the development of New Zealand's innovation system. The People and skills development category in particular is of real value to the development of the New Zealand biotechnology industry and its ability to connect with opportunities in other parts of the world. Communicating the feedback of lessons learnt to other New Zealand biotechnology firms will be necessary to spread the benefits of these secondments to the wider industry.

There has been limited publicity surrounding the smaller grant components of the ANZBPF. NZTE have expressed their intention to publicise these more heavily from the 2008 funding round onwards.

4.1.1.3 *The Australia New Zealand Biotechnology Alliance*

It appears worthwhile for New Zealand to remain a member of the ANZBA as it is a visual symbol of cooperation between the two countries and lends support to the aim of the ANZBPF to increase global recognition of Australasia as a centre of global biotechnology expertise and activity.

4.1.2 Efficiency

The ANZBPF has encountered some efficiency problems in its first years of operation. These were caused by three main issues:

- **Criteria (in particular, the requirement for matching funding):** A lack of clarity regarding the interpretation of eligible areas for funding (such as in-kind contributions). This has been addressed by NZTE's Business Process Improvement Project.
- **Contracting process:** NZTE did not initially allocate adequate resources to the administration of the fund which led to delays in processing contracts. They also did not provide adequate information to applicant firms regarding the contracting and claims process; and
- **Complexity of relationships between the entities involved:** Firms often require complex contractual relationships with their Australian partner and NZTE is only able to fund the project once these contracts are finalised. Firms are taking up to 12 months to develop their contractual arrangements with their Australian partner. In addition, NZTE did not adequately manage firm expectations around this process.

NZTE is aware of the significance of all these issues and the negative impact that efficiency problems are having on the reputation of the ANZBPF. Recommendations are listed in the following section to address these problems, the majority of which were independently identified by NZTE during the course of its own review of the issues. NZTE have already made significant progress on improving the efficiency of ANZBPF processes.

4.2 Recommendations

The recommendations of this review are:

1. The scheduled out years funding for the continued operation of the ANZBPF be confirmed.
2. MED, MoRST and MFAT undertake policy work to investigate any potential future expansion of the fund (such as increasing the budget of the fund and its geographical focus, both within Australia and internationally, and the possible role of the ANZBA in this expansion).
3. NZTE devote more effort towards publicising the smaller elements of the fund (such as People and skills development or Bio-market development) to existing and potential NZTE clients.
4. NZTE use their client relationship system to communicate the lessons learnt from all ANZBPF grant recipients to other firms within the New Zealand biotechnology industry and other industry sectors.
5. NZTE ensure that client expectations regarding the grant process are managed effectively (including providing adequate information to applicants regarding the likely time scale, potential contractual hurdles, and the amount available for funding at each round etc.).
6. NZTE ensure that information is collected on the firms receiving ANZBPF grants under NZTE's client impact and client value surveys in order to make longitudinal judgements regarding programme effectiveness and efficiency for the next review.
7. MED and MoRST review the ANZBPF by December 2012 and incorporate quantitative measures of participant firm performance into this review.

5. Annex – ANZBPF grants awarded 2004-2006

Table 12: Large-scale collaborative trans-Tasman projects

Name of firm	Firm category	Date approved	Contract signed?	Project completed?	Grant total (ex GST)	Period of funding	Australian partner	Objective of project
Industrial Research Ltd	CRI	Feb-2005	Yes	Yes	\$780,000	2 years	Starpharma	To develop new technologies for drug delivery for classes of drugs used to combat sexually transmitted diseases, cancer and glaucoma.
Wrightson Ltd	Company	Feb-2005	Yes	No	\$2,576,667	3 years	Molecular Plant Breeding Cooperative Research Centre	The development and commercialisation of genetically modified ryegrass. To develop forage for the international market that would boost the productivity of pastoral animals.
Proacta Therapeutics Ltd	Company	Feb-2005	Yes	No	\$1,866,667	3 years	GBS Ventures (Australian Venture Capital company)	To develop a second cancer treatment compound in parallel to its lead compound, dinitrobenzamide mustard PR-104.
Neuren Pharmaceuticals Ltd	Company	Feb-2005	Yes	No	\$525,556	2 years	Metabolic Pharmaceuticals	For the accelerated development and commercialisation of a drug targeted at spinal cord injury and multiple sclerosis.
Keratec Ltd	Company	Mar-2006	No	No	\$888,889	3 years	Australian Biotechnologies	To commercialise its patented bone graft technology that helps bones to heal faster, cleaner and more naturally than existing biomaterials on the market.
Livestock Improvement Corporation	Company	Mar-2006	No	No	\$888,889	3 years	Innovative Dairy Products Pty Ltd	To identify genetic traits in some dairy cows that give them more metabolic efficiency, which enables higher milk production.

Table 13: People and skills development

Name of firm	Firm category	Date approved	Contract signed?	Project completed?	Grant total (ex GST)	Period of funding	Australian partner	Objective of project
AgResearch	CRI	Jun-06	Yes	Yes	\$8,889	1 year	IMBCom - Queensland's Institute of Molecular Biosciences, commercialisation division	A 12 month secondment to IMBCom Pty Ltd, Queensland BioSciences Precinct: to 1) Gain knowledge and experience in commercialising life sciences biotechnology. 2) Establish executive-Director level networks with Queensland (Australia) biotechnology organisations within which science collaborations-business can be pursued. 3) Identify and bring to fruition trans-Tasman collaboration in research and licensing of technologies for commercialisation.
Biomatters	Company	Jan-06	Yes	Yes	\$8,889	6 months	Fisher Biotech, Howard Florey Institute, Phylogica	Relocate Jonathan Cowperthwaite for a period of 6 months to Australia to increase our skills, knowledge and contacts with the Australian Biotech sector in order to gain market share and collaborative opportunities for research and market expansion.

Table 14: Bio-market development

Name of firm	Firm category	Date approved	Contract signed?	Project completed?	Grant total (ex GST)	Period of funding	Australian partner	Objective of project
AgResearch	CRI	Jun-06	No	No	\$44,444	3 years	Cleveland Biosensors	The Development of a commercial biosensor for waterborne toxins
Ovita	Company	Jun-06	No	No	\$44,444	3 years	Diatech Pty Ltd	The aim of development project is to obtain peptide mimetic which when injected into ruminants, stimulate the production of antibodies that in effect neutralise nematodes. The selection of appropriate peptide will be the result of an interactive peptide screening validation process.
NIWA	CRI	Jun-06	Yes	No	\$8,889	2 years	No Australian partner	To establish a NZ bioactives network with Trans-Tasman connections that facilitates the exchange of extracts/compounds for screening, and screening capacity between research groups.