

Submission to the Productivity Commission's Review of Rural Research and Development Corporations

Australian Wool Innovation

June 2010

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Executive summary

Introduction

1. The Assistant Treasurer announced a wide ranging review by the Productivity Commission of Rural Research Development Corporations (RRDC) in December 2009.
2. As part of that review the Productivity Commission is to assess:
 - the economic and policy rationale for Government investment in rural research and development;
 - the effectiveness of the current RDC model – the strengths and weaknesses of the RDC model;
 - the appropriateness of current funding levels, levy arrangements and the balance between public and private investment; and
 - ways of improving the RDC model – governance, administrative efficiency, project evaluation, and levy arrangements.
3. This submission has been prepared by Australian Wool Innovation (AWI).
4. AWI welcomes the Productivity Commission review of the Rural RDCs. Its timing coincides with the consultation and development of AWI's 2010-11 Annual Operating Plan, three year Strategic Plan 2010-11 to 2012-13, negotiation with the Australian Government of the 2010-13 Statutory Funding Agreement, and the implementation of a number of efficiency and operational measures following internal and external feedback.

Context

5. Australia is the world's leading producer of Merino wool.
6. However, Australian wool production has been in decline since 1990 because of changes in fibre market share (compounded by an increasing fashion trends towards casualisation); declining wool prices; increasing prices for lamb meat; and prolonged drought conditions.
7. AWI recognises that specific strategies need to be in place to address these challenges to improve the viability of the industry. AWI will play a key role developing those strategies.
8. AWI, through its roles in promoting and supporting research and development and wool marketing, has the objectives of:
 - increasing information and knowledge through the targeted investment in on-farm and off-farm research and development to enhance the profitability, international competitiveness and sustainability of the Australian wool industry;
 - increasing demand and market access for Australian wool through targeted investments in marketing and promotion; and

- providing a range of industry services to support the broader wool industry and building human, leadership and technical capacity.

The role of research and development in securing the Australian wool industry's future

9. AWI recently finalised its three-year Strategic Plan for 2010-11 to 2012-13.
10. This Plan promotes research and development as a mechanism to drive improvements in:
 - farm productivity and profitability,
 - the sustainability of wool production, manufacturing, use and disposal, and
 - wool's relative market share in key segments (particularly casual wear).
11. Significant funding is required to drive the research and development investments outlined in AWI's Strategic Plan.
12. AWI receives funding for its R&D activities from woolgrowers (collected through a levy on all wool sold in Australia) and the Australian Government. The value of the wool levy in 2008-09 was \$34.3 million. The government's contribution to wool industry research and development is \$11 million – or approximately \$400 per woolgrower.
13. AWI currently invests, on behalf of the wool industry, approximately \$23 million in research and development.
14. As a primary beneficiary of the likely benefits that will be generated by the research and development programs, the Australian wool industry has the responsibility to provide a considerable share of this funding — a responsibility that the industry has the capacity (and willingness) to meet through the current levy arrangements.
15. However, a strong case exists for government funding support to assist the Australian wool industry in realising the benefits from AWI's on-farm and off-farm research and development.

Rationale for Government funding support of wool industry research and development

16. There are considerable public or spillover benefits generated by the research and development identified in AWI's Strategic Plan. The beneficiaries, include:
 - the Australian community;
 - rural and regional Australia;
 - other participants in the wool supply chain;
 - consumers of woollen products; and

- sheep meat and other livestock industries;
17. Any reduction in Government support would undermine woolgrower support for the current levy arrangements and, in turn, the general supply of funds available for wool-related R&D.
 18. AWI notes that the current Government funding arrangement, where the level of Government funding is capped against a falling GVP of wool, means that the level of research and development funding is not efficient.
 19. Therefore, while there is a strong rationale for continued government funding support, there is scope to adjust the underlying mechanism by which the level of government funding support is determined. AWI is willing to work with government to develop a more efficient and responsive funding mechanism for rural R&D.

Rationale for AWI's continued role in research and development

20. The Australian wool industry has experienced significant institutional change over the last 20 years. History has shown that there are natural synergies between wool marketing and research and development. Indeed, government facilitated institutional change in the past has supported the joint administration of marketing and research and development.
21. AWI therefore believes that the current model of housing wool R&D and marketing in one organisation has demonstrated benefits and synergies. Most importantly, AWI currently operates as a conduit between R&D and the marketplace — allowing the efficient extension and delivery of research outcomes both to growers and off-farm stakeholders along the supply chain, as well as providing two-way feedback to guide selection of ongoing R&D priority target areas.
22. AWI believes that the RDC model is fundamentally sound:
 - the model is a proven mechanism for delivering R&D that is responsive to industry and government needs;
 - the model enhances woolgrower awareness and adoption of the important relationship between R&D and on-farm productivity and off-farm retail success; and
 - the model ensures that the costs of generating industry and wider benefits are equitably shared across woolgrowers and government.
23. Stakeholder engagement is an integral element of the RDC model. It ensures that R&D investments are responsive to industry and governments needs, and generated benefits match the expected value of levy payers and government. AWI's stakeholder strategy focuses on nurturing an extensive network of industry and commercial partners, who value and support AWI, its business strategies and mutual benefits through partnering. These relationships provide AWI with effective conduits to deliver

market information, research and development and marketing outcomes for the Australian wool industry.

24. The level of collaboration between RDCs is high. AWI invests over \$20 million a year in on-farm and off-farm R&D each year and is largely directed towards government research bodies, including:
 - CSIRO;
 - various state primary industry departments;
 - Cooperative Research Centres; and
 - various universities.
25. AWI has also a demonstrated history of collaborating on R&D projects with other members of the RDC family. A significant proportion of AWI's R&D expenditure in 2008-09 was directed at projects involving at least one other RDC.
26. The benefits of collaboration between RDCs are clear and this does not need to be further promoted through institutional change.

Other matters raised in the Productivity Commission's Issue Paper

Efficiency

27. AWI's objective is to be as responsive and efficient as possible in delivering R&D outcomes.
28. AWI represents an efficient vehicle for the investment of public R&D funds. The organisation's costs in delivering publicly funded on-farm R&D has reduced over time and the organisation is committed to further enhancing its efficiency.
29. AWI has the required project evaluation frameworks in place to provide confidence that public funds will be invested in projects which are reflective of the priorities of the wool industry.

Governance

30. AWI welcomes the Productivity Commission's inquiry into the operational and organisational performance of the RDCs. AWI takes its responsibilities as a conduit for woolgrower and taxpayer funds seriously, and strives to ensure that its governance, management and administrative practices match industry and community expectations.
31. AWI is discussing a new Statutory Funding Agreement (SFA) with the Australian Government. The SFA provides a mechanism for AWI to address the government's rural R&D priorities, and allow government to engage directly with AWI with reference to its operational performance.

32. AWI has also undertaken a number of important steps to enhance the organisation's performance and strengthen its governance reputation with key stakeholder groups.
33. In 2009, AWI commissioned an independent review of the organisation's performance over the period July 2006 to June 2009. On completion, a number of recommendations were made relating to its corporate planning, engagement with key stakeholders and governance arrangements. AWI is in the process of implementing these recommendations.
34. AWI has committed to conducting a further review of performance in 2010.

Conclusions

35. The Australian wool industry is at a pivotal moment in its history.
36. AWI is a key organisation that drives future change in the industry.
37. Well targeted research and development is a central plank in AWI's strategic plan to drive better outcomes for the wool industry.
38. The delivery of effective R&D can be achieved through an enhanced partnership between AWI, the wool industry and Government.
39. The public good nature of R&D means that there is a continuing role for Government financial support. The support for increased R&D funding from wool growers will be dependent on Government's continuing support.
40. Because AWI works in partnership with industry, it is in a strong position to ensure that R&D best reflects industry demands. The relationship between R&D and marketing is essential to grow the demand for wool product, particularly in new markets and product lines.

2 The challenges facing the Australian wool industry

This section provides an overview of the current state of the Australian wool industry, as well as the challenges facing the industry.

2.1 Australia's position in the global wool market

Australia is the world's leading producer of wool. ABARE (2009a) estimates that the national flock numbered 71.6 million in 2008-09, and total greasy wool production equalled 404 kilotons (kt). Australia accounts for approximately 24 per cent of the world's total wool production, followed by China (18 per cent), New Zealand (10 per cent), the Russian Federation (7 per cent), and Argentina (3 per cent) (see Figure 1).¹

Australia is the world's leading producer of Merino wool. The value of wool exports in 2008-09 was \$2.3 billion or 7 per cent of total farm exports.

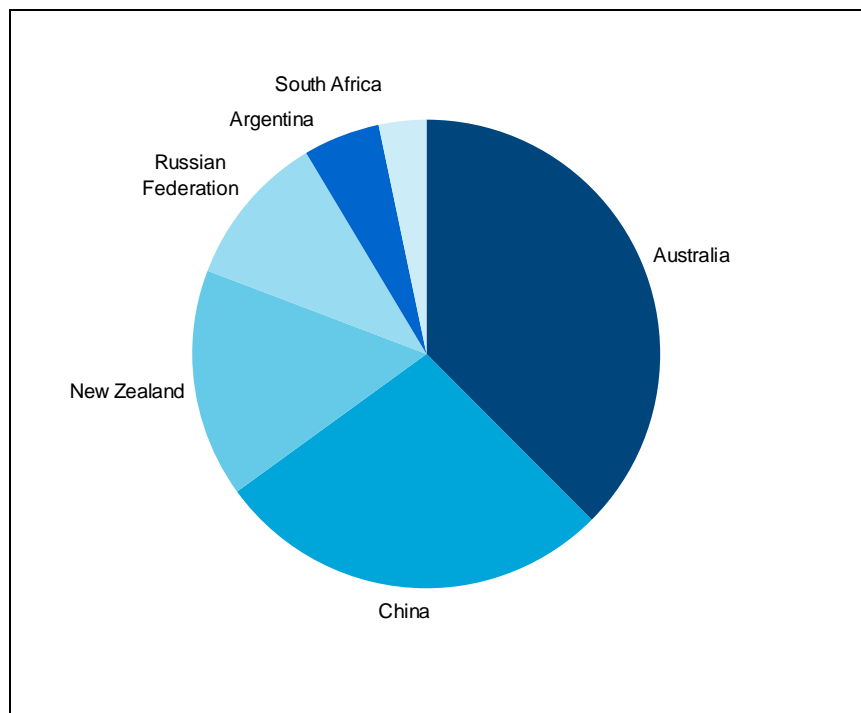


Figure 1: Selected country share of world wool production, 2008-09 (ABARE 2009a)

¹ ABARE's most recent estimates of world wool production are from 2006-07. These percentages (and the percentages in the associated pie chart) represent the average of each country's share of world wool production over the five-year period 2002-03 to 2006-07 (ABARE 2009a).

Australia is also the world's leading exporter of Merino wool. ABARE (2009a) estimates that Australia exported 439 kt of greasy equivalent (ge) wool in 2008-09, and accounts for two thirds of the world's wool exports, from major producing countries.² These exports had a value of \$2.3 billion, and represented 7 per cent of the value of Australia's total farm exports. Australia's primary wool export markets are China (accounting for 72 per cent of exports), the European Union (8 per cent), and India (6 per cent) (see Figure 2).

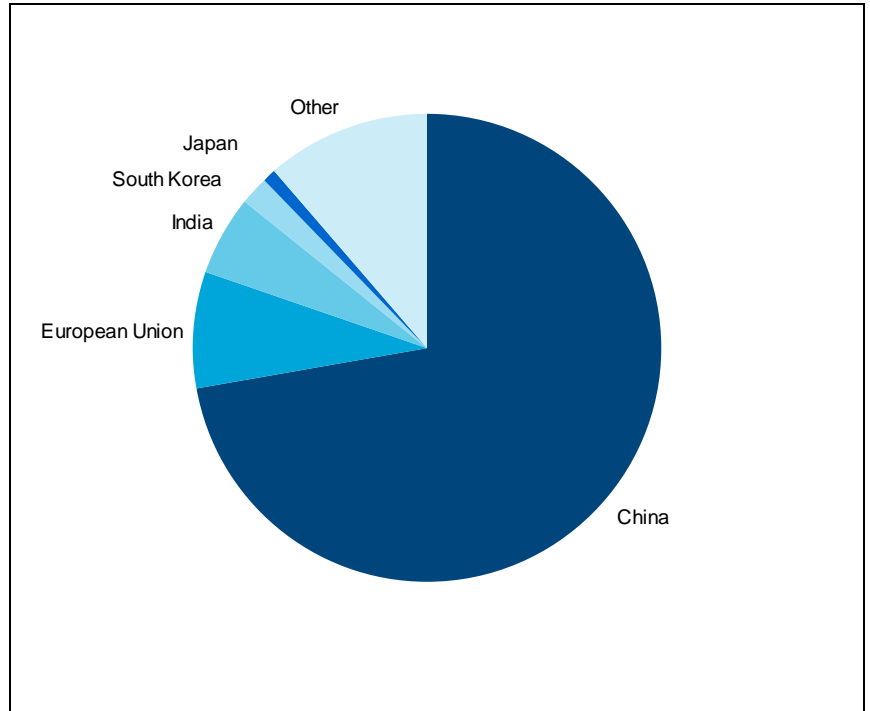


Figure 2: Proportion of Australian wool exports, by selected country, 2008-09 (ABARE 2009a)

The Australian flock is predominately Merino, producing fine wool. Australian wool is primarily used in the manufacture of tailored apparel.

In 2008-09, the Gross Value of Production (GVP) of Australian wool was over \$2 billion, or 0.16 per cent of Australia's Gross Domestic Product (\$1.3 trillion) (ABARE 2009b; ABS 2009). Wool's share of the value of Australia's total exports, however, was more than five times greater—0.82 per cent of \$285 billion (ABARE 2009b; ABS 2009).

It is important to note that the Australian flock is overwhelming Merino (88 per cent), with the remainder a mixture of crossbreds (9 per cent) and other breeds (3 per cent). Given that Merinos typically produce a finer wool than other breeds (between 15 and 24 microns), the vast majority of Australian wool is used in the manufacture of fashion apparel.

In contrast, other wool producing countries (such as New Zealand) tend to have greater proportions of crossbreds and other breeds relative to

² This figure includes raw, semi processed and wool on skins. The production figure quoted in the previous paragraph does not include semi processed wool.

Merino.³ As a consequence, they generally produce strong wools, more suitable for interior applications, such as carpets, upholstery and furnishings and not suited to the fine apparel market.

2.1.1 Woolgrower profile

As of the 2008-09 financial year, AWI had 29,754 shareholders from Australia's wool growing industry. As Figure 3 illustrates, Australia's woolgrowers are dispersed across Australia. The largest number of shareholders in 2008-09 were located in New South Wales; followed by Victoria, Western Australia and South Australia.

State / Territory	Number Shareholders	of	Percentage of Total
New South Wales	10,890		36.6
Victoria	6,798		22.8
Western Australia	5,238		17.6
South Australia	4,876		16.4
Queensland	1,064		3.6
Tasmania	775		2.6
Northern Territory	3		0.0
Total	29,754		100.0

Figure 3: AWI shareholder numbers, by State/Territory

2.2 Wool's changing market environment

The Australian wool industry currently faces an evolving market environment. As Figure 4 illustrates, Australian wool production has been declining since 1990, as has the national flock, dropping from 174 million in 1989-90 to 71.6 million in 2008-09 (ABARE 2009a). Australia is not alone in experiencing this trend — global wool

Australian wool production has fallen since 1990. Factors which have contributed to this have included:

- a change in fibre market share;
- declining wool prices;
- increasing prices for lamb meat; and
- prolonged drought conditions.

³ According to Meat and Wool New Zealand (2010), Merinos only make up 5.5 per cent of New Zealand's sheep flock.

production has also decreased from 2,923 kt ge in 1992-93 to 2,122 kt ge in 2006-07 (ABARE 2000; 2009a). Factors that have contributed to the decline in Australian wool production include: changes in fibre market share; declining wool prices; increasing prices for lamb meat; and prolonged drought conditions. These factors are discussed in turn below.

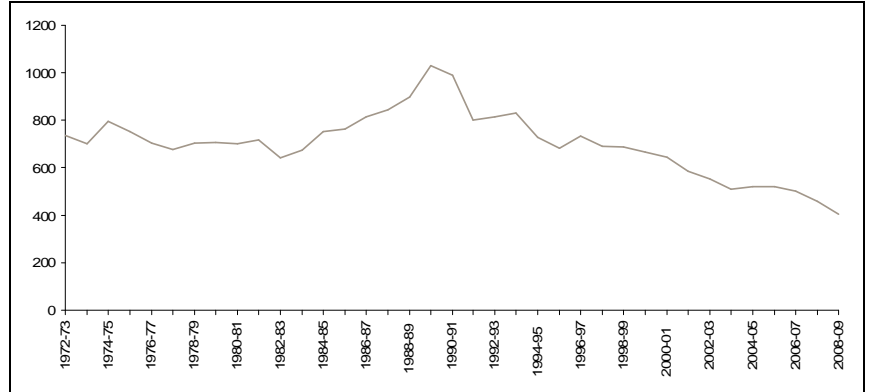


Figure 4: Australian total wool production (kilotons) (ABARE 2009a)

Consumption of wool has fallen over the last 60 years whilst the consumption of all textile fabrics has grown

2.2.1 Changes in fibre market share and use

Over the past six decades, global consumption of textile fibres grew by more than 500 per cent — increasing from approximately 12.9 million tons in 1957 to 70.8 million tons in 2008 (Bureau of Agricultural Economics 1958; Plastina 2010; Textiles Intelligence 2010). As Figure 5 illustrates, however, global consumption of wool declined in both absolute and relative terms over this period — from 1.4 million tons, or 10.6 per cent of global consumption, in 1957 to 1.1 million tons, or 1.6 per cent of global consumption, in 2008 (Bureau of Agricultural Economics 1958; Textiles Intelligence 2010).

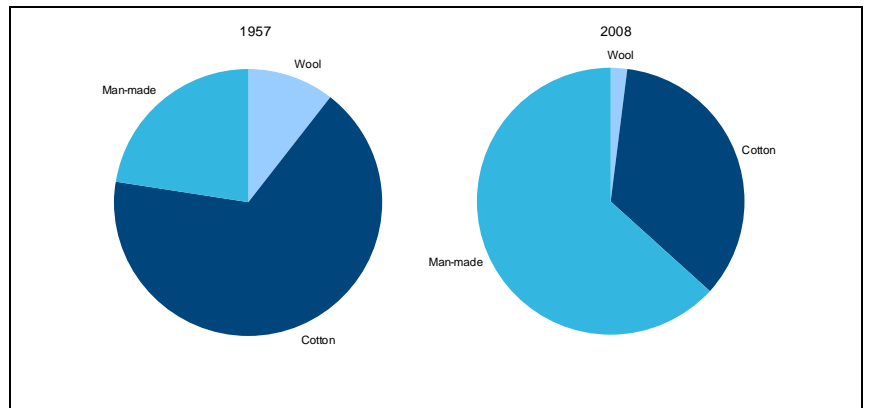


Figure 5: Global consumption of textile fibre, 1957 and 2008

This decline in wool's share of textile fibre consumption has been driven by:

This decline is partly due to the price advantage enjoyed by other fibres.....

The price differential between wool and other fibres. In the textile market, wool is in competition with other natural fibres (such as cotton) and manmade fibres (e.g. acrylic and polyester). These competing fibres have historically enjoyed a strong price advantage over wool. As Figure 6 illustrates with reference to the price ratios of wool to competing fibres, the price of acrylic over the past two years has typically been one third of that of wool, while the prices of cotton and polyester have roughly been one quarter of that of wool.

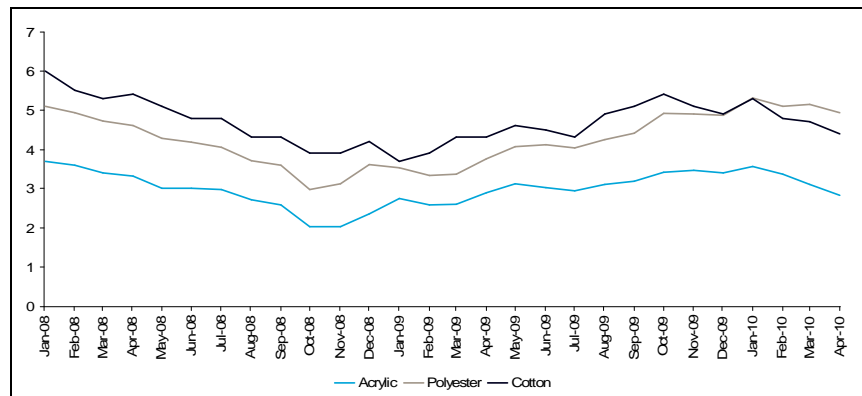


Figure 6: Wool to competing fibre price ratios (AWI Market Data)

.....and a shift in the apparel market towards casualisation

The shift in the apparel market towards greater casualisation. The past two decades have witnessed a shift in consumer preference away from tailored apparel (such as business suits) to greater 'casualisation' in apparel choices (such as jeans, T-shirts and sportswear). The casual wear market is now estimated to account for 60% of the total apparel market. The shift towards casualisation has had a negative impact on wool, as it is primarily used in the manufacture of tailored apparel and has yet to develop a significant presence in the casual wear market.

2.2.2 The decline in wool prices

According to ABARE (2009a), the average price for greasy wool in Australia peaked at 1,117.4 cents a kilogram in 1987-88. In the decade that followed, wool prices suffered a serious decline, dropping by more than half compared to their 1987-88 high (see Figure 7). Since 2000, wool prices have begun to trend slightly upwards. Feedback from woolgrowers suggests, however, that discrepancies still exist between the average Eastern Market Indicator (EMI) price of wool and costs of production.

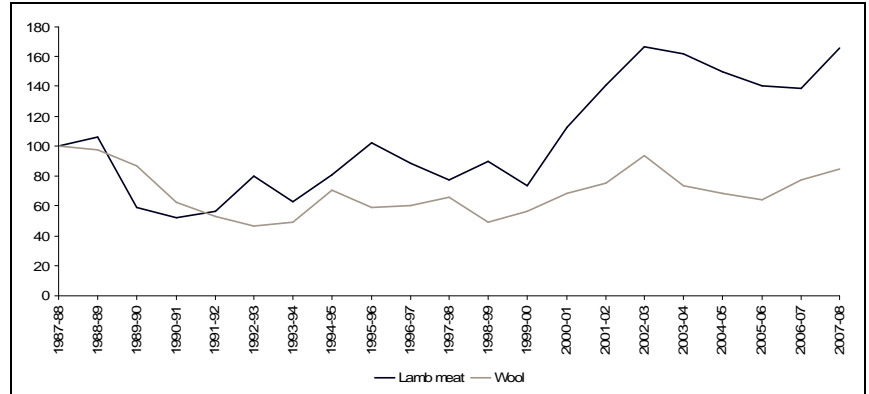


Figure 7: Index of wool and lamb meat prices (1987-88 = 100) (ABARE 2009a)

2.2.3 Increasing prices for lamb meat

While the price for wool remains low compared to its 1987-88 peak, the price for lambs slaughtered reached historic highs over the past decade (Figure 7). As ABARE (2010) states, this increase “is a result of strong growth in international demand for Australian lamb meat and constrained growth in supplies because of falling sheep numbers and adverse seasonal conditions.” As prices have increased, so has production — ABARE (2010) estimates that lamb meat production has grown 37 per cent over the past decade (from 319 kt in 1999 to 438 kt in 2009) (Figure 8).

A consequence of the increase in lamb meat prices is that sheep producers are increasingly shifting their focus from wool to meat production.

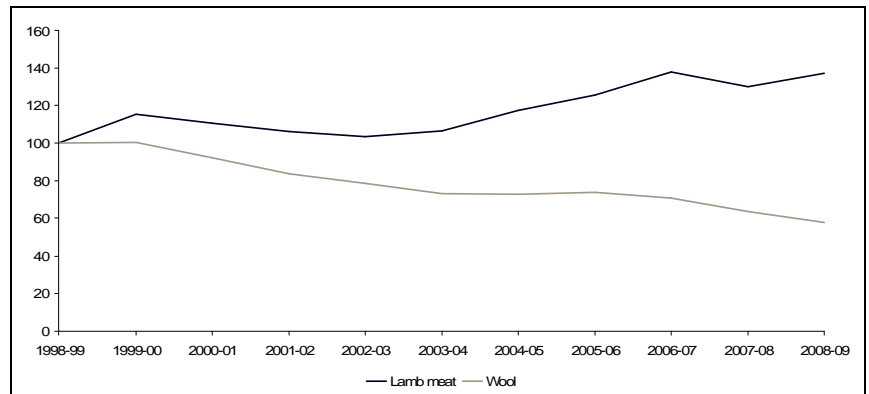


Figure 8: Index of wool and lamb meat production (1988-89 = 100) (ABARE 2009a; 2010)

A consequence of the increase in lamb meat prices, and the comparatively low prices for wool, is that sheep producers are increasingly shifting their focus from wool to meat production. This does not necessarily mean that sheep producers are abandoning wool; but rather, they are moving from a sole wool focus, to mixed farming enterprises, with wool being just one of their diversified product lines. Greater diversification has implications for the future demographics and management of the national flock — lamb meat production generally requires a greater proportion of ewes and a different genetic focus than wool production.

2.2.4 Prolonged drought conditions

As the Bureau of Meteorology (2010) notes, much of southeast and southwest Australia has experienced below average rainfall since 1997, while central and southern areas of the Murray-Darling Basin have experienced below average rainfall since 2002. As pasture growth and feedgrain prices were affected by these prolonged drought conditions, many livestock producers de-stocked their properties as a means of managing their way through the drought (ABARE 2007).

2.3 Conclusion

This section has highlighted both the valuable contribution that the wool industry makes to the Australian economy (particularly in terms of export revenue) and the changing market conditions facing the Australian wool industry. Wool production has declined, as the industry has experienced a shift in fibre market share and use, increased competition from meat production, and prolonged drought conditions.

The Australian wool industry is aware of its evolving market environment. As the industry's R&D and marketing body, AWI is particularly aware of the challenges facing the Australian wool industry. AWI has spent the past twelve months engaged in a comprehensive strategic planning process — involving woolgrowers and other major stakeholders — to develop a roadmap that will allow the Australian wool industry to best navigate these evolving market conditions. A key element of AWI's new Strategic Plan is the use of on-farm and off-farm R&D to:

- Build a sustainable Australian wool industry;
- Maximise woolgrower profitability and productivity; and
- Increase demand for Australian Merino wool.

The Australian wool industry is currently at the cusp of a new product development and innovation cycle. AWI's Strategic Plan provides a mechanism to address these evolving market conditions.

The following section provides greater detail about AWI, its three-year Strategic Plan for 2010-11 to 2012-13, and other steps AWI has undertaken to enhance its institutional processes.

The Australian wool industry is currently at the cusp of a new product development and innovation cycle.

AWI's Strategic Plan provides a mechanism to address these evolving market conditions.

2.4 Key findings

Australia is the world's largest producer and exporter of Merino wool; accounts for one quarter of global wool production, and two thirds of the world's wool exports, from major producing countries.

However, the Australian wool industry faces a number of challenges. National and international wool production is trending downwards, driven by:

- Wool's loss of market share relative to other fibres;
- A shift in the price differential between wool and lamb meat (leading to a greater focus on the latter at the expense of the former); and
- At least in the Australian context, prolonged drought conditions.

The wool industry is currently at the cusp of a new product development and innovation cycle, requiring more so than ever, a concerted R&D strategy.

3 The role of AWI in underpinning the future of the wool industry

This section provides an overview of AWI's history and organisational predecessors, its structure and financial information, and the steps AWI has undertaken to ensure that Australia's woolgrowers are best placed to overcome the challenges facing the industry over the coming decades.

3.1 History of AWI and its predecessor organisations

The Australian wool industry has experienced significant institutional change over the last 20 years.

Over the past two decades, the Australian wool industry has experienced significant institutional change. In the mid-1990s, the Australian Government created the Australian Wool Research and Promotions Organisation (AWRAP), subsuming the Australian Wool Corporation and the International Wool Secretariat (initially founded in 1937).

A key objective of AWRAP was to identify and evaluate the R&D needs of the Australian wool industry, and to invest in research, development and extension (RD&E) projects. AWRAP also created a corporate vehicle — IWS International, later The Woolmark Company (TWC) — to promote Australian wool internationally and manage use of the Woolmark.

Since 2007 wool research and development and marketing activities have resided in one organisation, AWI.

In 2001, responding to industry concerns about the performance of AWRAP, the Australian Government created Australian Wool Services (AWS), a corporations law holding company. AWS had two main subsidiary companies:

- The Woolmark Company (TWC), which was then tasked with the promotion of Australian wool and the commercial development of the Woolmark and other associated brands; and
- Australian Wool Innovation (AWI), which was then tasked with identifying the industry's R&D needs and investing in suitable R&D projects, as well as undertaking a range of industry services (e.g. shearer handling and training, and the provision of market information).⁴

In 2002, AWI separated from AWS to become a fully independent company. Both AWI and TWC retained their initial responsibilities.

⁴ Industry Services does not include industry representation, which is the role of agri-political organisations representing woolgrowers and other parts of the domestic wool industry.

History has shown that there are natural synergies between wool marketing and research and development.

Institutional change in the industry has supported the joint administration of both marketing and research and development, culminating in the formation of AWI as the wool industry's research and development, marketing and services body.

In 2007 AWI purchased TWC and the Woolmark brand from AWS. The Australian Government assisted with this process by providing AWI with a one-off grant of \$15 million. Since then, AWI has had responsibility for R&D, marketing and the provision of industry services.

Figure 9 illustrates the significant organisational change experienced by the Australian wool industry in recent decades. The R&D, marketing and industry services functions required by the industry have been "housed" and performed in a range of business models and combinations. History has shown that change is inherent in the wool industry and the three functions (R&D, marketing and industry services) are best housed under the one roof.

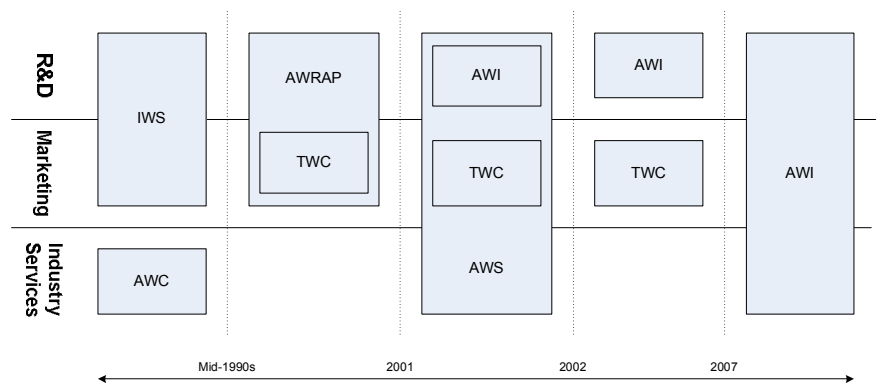


Figure 9: Evolution of organisational responsibility for R&D, marketing and industry services in the Australian wool industry

3.2 AWI's role in research and development

The objective of AWI is to increase the demand for wool. Targeted R&D is used to achieve this objective.

AWI is the wool industry's R&D, marketing and industry services body. The goal of AWI is to help increase demand for Australian wool. It seeks to achieve this goal through the following key activities:

- Increasing information and knowledge through the targeted investment in on-farm and off-farm R&D to enhance the profitability, international competitiveness and sustainability of the Australian wool industry;
- Increasing demand and market access for Australian wool through targeted investments in marketing and promotion; and
- Providing a range of industry services to support the broader wool industry, to build human, leadership and technical capacity, and to ensure market access.

AWI's head office is in Sydney, with offices located in key markets including China, France, Germany, Hong Kong, India, Italy, Japan, South Korea, Spain, Taiwan, Turkey, the United Kingdom, and the United States.

AWI generates income from a levy on woolgrowers, a co-contribution from the Australian Government and income from licensing Woolmark.

Currently 50 per cent of the wool levy and the Government co-contribution is used to fund research and development.

3.2.1 Research and development funding

AWI receives the majority of its income through three sources, two of which are used to fund its R&D activities. The organisation's revenue sources include:

- a levy paid by woolgrowers in Australia on the sale price they receive for shorn greasy wool;
- a contribution to the wool levy from the Australian government (capped at 0.5 per cent of gross value of national wool production); and
- sales of the Woolmark license (this revenue source is used to support AWI's Global Sales Network, not its R&D role).

The government contribution and half of the woolgrower levy is used to fund AWI's R&D activities. Figure 10 outlines the revenue AWI has received from the wool levy and the government contribution to fund its R&D activities from 2004-05 to 2008-09. Both revenue sources have declined, due to the reduction in Australian wool production over the same period.

	2004-05	2005-06	2006-07	2007-08	2008-09
Wool levy	21,418	19,180	23,263	22,555	17,154
Government contribution	13,513	11,048	11,572	12,312	11,395
Total	34,931	30,228	34,835	34,867	28,549

Figure 10: AWI revenue (\$ '000s)

Levy mechanics

The rate of the wool levy is determined by a triennial ballot of eligible woolgrowers — known as WoolPoll. Woolgrowers (or associated legal, business entities) are eligible to vote in WoolPoll if they have paid a wool levy totalling at least \$100 during the three financial years prior to the ballot. WoolPoll is voluntary ballot.

As part of WoolPoll, and in accordance with the *Wool Services Privatisation Act 2000* and its regulations, AWI must present woolgrowers with three to five different rates of wool levy for them to choose between. One of these options must be a zero rate.

The most recent WoolPoll was held in 2009. Eligible woolgrowers voted in favour of retaining a 2 per cent levy. As Figure 11 highlights, nearly a supermajority of voters endorsed the 2 per cent levy rate, and over 73 per cent were in favour of a levy rate of 2 per cent or more. Participation for WoolPoll 2009 was high — 53.7 per cent of available votes were cast and 32.7 per cent of voting papers were returned. The results of the ballot were independently certified by Link Market Services Ltd.

Woolgrowers have supported a two per cent levy in every WoolPoll since the first in 2000.

Proposed rate of levy (%)	Proportion of votes in favour (%)
3	4.43
2.5	3.72
2	64.98
1	12.33
0	14.54

Figure 11: Results of WoolPoll 2009

At WoolPoll 2009 the funding split of AWI's investment was changed from 60% off-farm:40% on-farm, to 70:30

Prior to WoolPoll 2009, AWI invested 60 per cent of levy funds in off-farm projects and the remaining 40 per cent in on-farm R&D. At WoolPoll 2009, AWI sought woolgrower endorsement to change this funding split from 60:40 to 70:30. That is,

- 70 per cent of levy funds would be invested in off-farm projects (50 per cent marketing and 20 per cent off-farm R&D), and
- 30 per cent in on-farm R&D (Figure 12).

Research and Development 50%		Marketing 50%
On Farm R&D 30%	Off Farm R&D 20%	Off Farm Marketing 50%
On Farm Activities 30%		Off Farm Activities 70%

Figure 12: AWI's 70:30 funding split

Recognising the challenges facing the Australian wool industry (particularly the growing trend towards casualisation and wool's price disadvantage relative to other fibres), woolgrowers at WoolPoll 2009 endorsed AWI's proposed 70:30 funding split and greater focus on off-farm R&D.

Information about the history of the wool levy is provided in Appendix B.

Government contribution

The Australian Government provides AWI with an annual contribution to support wool industry R&D. The government generally aims to match AWI's eligible expenditure on R&D, though its contribution is capped (as it is for all RDCs) at 0.5 per cent of industry Gross Value of Production (GVP).

Since 2002-03 AWI's expenditure on R&D has continued to exceed the Government's contribution, capped at 0.5% GVP.

In 2008-09, the government contribution to wool industry R&D was just over \$11 million, or less than \$400 for each of Australia's 29,800 woolgrowers.

In 2008-09 the Government contribution for R&D was less than \$400 per woolgrower.

AWI estimates that if the government contribution had matched AWI's eligible expenditure on R&D, the Australian Government would have spent an additional \$51.1 million on wool industry R&D over the period 2004-05 to 2008-09.

3.2.2 Research and development expenditure

In 2008-09 AWI invested approximately \$23m in research and development.

In 2008-09, AWI's expenditure totalled \$78.6 million; \$23.3 million of which was related to the organisation's on-farm and off-farm R&D investments (see Figure 13).

	2004-05	2005-06	2006-07	2007-08	2008-09
On-farm R&D	37,858	29,303	24,637	21,911	17,980
Off-farm R&D	15,342	21,749	13,349	6,612	5,288
Total R&D	53,200	51,052	37,986	28,523	23,268

Figure 13: AWI expenditure (\$ '000s)

It is important to note that the expenditure data in Figure 13 only includes direct costs. It does not include costs associated with corporate services and AWI's integration/restructuring following the merger of AWI and The Woolmark Company in late-2007.

AWI's research and development expenditure comprises a wide range of initiatives, including:

- Productivity
- supply chain
- natural resource management
- climate change
- biosecurity

Figure 14 outlines AWI's R&D expenditure against the Australian Government's Rural Research and Development Priorities (RRDPs). Supporting the RRDPs through investing in Skills and Technology accounts for the largest share of AWI's R&D expenditure (39 per cent), followed by Productivity and Adding Value (33 per cent) and Supply Chain and Markets (12 per cent).

Rural Research and Development Priorities	2008-09
Productivity and Adding Value	7,718
Supply Chain and Markets	2,704
Natural Resource Management	2,600
Climate Variability and Climate Change	508
Biosecurity	733
Supporting the RRDs (through investing in Skills and Technology)	9,005
Total	23,268

Figure 14: AWI R&D expenditure against the RRDs (\$ '000s)

Thirty per cent of AWI's R&D expenditure was directed towards research organisations — primarily Cooperative Research Centres (CRCs) and CSIRO (accounting for \$3.1 million and \$2 million in R&D expenditure, respectively).

Over \$3.3 million, or 14 per cent, of AWI's R&D expenditure in 2008-09 was invested in universities — the vast majority of which (97 per cent) were Australian universities. In all, AWI invested in 13 Australian universities. The median investment was \$155,000, with a maximum of \$667,000 and a minimum of just under \$3,000.

AWI invested just under \$3 million, or 13 per cent, of its R&D expenditure in government agencies at the Federal and State level; though State Government agencies accounted for most (93 per cent) of this investment.

Vendor type	2008-09
Research organisation	7,005
<i>CRCs (Sheep CRC, CRC for Plant Based Management of Dryland Salinity, Invasive Animals CRC and Future Farms CRC)</i>	3,107
<i>CSIRO (Livestock Industry, Textile and Fibre, Plant Industry, Land and Water, Entomology, and Manufacturing and Material Technology)</i>	2,070
University	3,362
<i>Australian universities</i>	3,263
Registered Training Organisation (RTO)	875
Australian Government agency	179
State Government agency	2,741
Natural Resources Management (NRM) agency	99
Commercial partner	1,463

Figure 15: AWI R&D expenditure, by vendor (\$ '000s)

3.3 AWI's Strategic Plan 2010-11 to 2012-13

AWI has recently finalised its 2010-2013 strategic plan. This plan sets out initiatives which are focussed on increasing demand for wool and improve productivity and profitability on-farm.

The 2010-13 Strategic Plan is the wool industry's "investment plan" for the next three years.

As detailed in the previous section, the Australian wool industry currently faces an evolving market environment. Recognising these challenges and aiming to best position the Australian wool industry moving forward, AWI has recently finalised its Strategic Plan for 2010-11 to 2012-13. The Strategic Plan provides a framework for AWI to achieve five key objectives over the next three years:

- Help build a sustainable Australian wool industry through improvements in productivity and profitability on-farm.
- Help increase demand for Australian Merino wool by recognising and addressing through off-farm R&D the product and process barriers to consumption at trade level through consumer-driven, targeted research, development and innovation programs.
- Help increase demand for Australian Merino wool by recognising and addressing the information barriers to consumption at consumer and trade level, and informing people the Merino wool fibre story.

- Review the role and value of the Woolmark brand, revitalise it and, where markets and partners permit, maximise the presence and income streams of the brand.
- Define threats and opportunities facing the Wool industry, and build strategies and programs to ensure market access, sustainable production and improved trading environment across the supply chain.

A central element of the strategic plan is on-farm and off-farm R&D – on-farm R&D focussing on building a sustainable wool industry and off-farm focussing on increasing the demand for wool.

Research, development and extension are integral to AWI's new Strategic Plan and its future for the Australian wool industry. AWI will use its on-farm R&D investments to build and maintain a sustainable wool industry. It will focus its off-farm R&D, meanwhile, on increasing demand for Australian Merino wool through addressing the product and process barriers to consumption at trade level. Greater detail about AWI's Strategic Framework for on-farm and off-farm R&D is provided below.

3.3.1 On-farm RD&E

The focus of AWI's on-farm RD&E efforts will be on building and maintaining a sustainable and profitable wool industry. To achieve this objective, the Strategic Plan outlines four on-farm RD&E priority themes:

- Sheep Health, Wealth and Productivity;
- Wool Harvesting and Clip Quality;
- The Environment and Climate Change; and
- Education and Extension.

Sheep Health, Wealth and Productivity

This theme aims to increase farm productivity and profitability by driving improvements in:

Animal Health and Welfare, particularly in relation to:

- Reducing the impact of flystrike and lice and worms — these parasites cost the sheep industry respectively an estimated \$290 million, \$125 million and \$369 million each year;
- Increasing reproductive efficiency;
- Reducing the impact of dog predation — which is estimated to cost sheep producers \$20.97 million annually; and
- Exploring possible commercialisation opportunities of anti-inflammatory agents in sheep.

Genetics, through:

- Effective genetic benchmarking — to enable growers to better target specific wool markets;
- The commercialisation of DNA tools; and
- Matching genotypes to environments to identify commercially valuable traits.

Wool Harvesting and Clip Quality

This theme will aim to enhance wool production efficiencies and quality assurance processes through:

- Investments in shearing and wool handling training — to ensure shearers and wool handlers have the capacity to meet the needs of industry (in terms of harvesting skills and the number of new entrants); and
- Improving and testing quality assurance processes.

The Environment and Climate Change

The purpose of this theme is to better position the Australian wool industry to:

Mitigate the potential of climate change — primarily through investments in carbon sequestration, and reducing the sheep industry's contribution of methane to Australia's greenhouse gas account (through the identification of efficient feed use strategies, understanding the underlying genetic mechanisms of methane production, and exploring measurement technology).

Manage Australia's natural resources — primarily through:

- Identifying and modelling potential adaptation response options;
- Identifying improved farming systems and management strategies; and
- Reducing on-farm pesticide use.

Promote the wool industry's footprint in terms of carbon, water and energy (through the completion of a credible lifecycle analysis), and develop demonstration and verification methods to enable woolgrowers to fully participate in carbon trading markets.

Education and Extension

AWI will seek to provide a range of education and training solutions to the wool industry to ensure that:

- Woolgrowers have robust and sustainable farm and business management practices in place; and
- The wool industry has sufficient forecasting processes in place to underpin effective decision-making.

Summary

Figure 17 provides a summary of AWI's strategic framework for on-farm RD&E.

Objective	Through careful investment in R&D projects address opportunities to help improve productivity and build demand for Australian wool.			
Approach	Invest in On-Farm R&D programs that improve profitability, competitiveness and sustainability of the Australian Wool Industry			
Outcomes On Farm R&D Sub Program	The generation of information and knowledge to foster the viability, productivity and sustainability of the Wool Industry through investment in On-Farm R&D, education and extension			
	1. Foster Sustainable, Profitable and Ethical Animal Care and Wool Production		2. Foster Sustainable Profitable and Ethical Land and Resource Management	3. Industry Resilience, Confidence and Growth
Strategies	Sheep Health, Welfare and Productivity	Wool Harvesting and Clip Quality	The Environment, Climate Change and Carbon	Education and Extension – "Two Way"
	Program 1: Sheep Health, Welfare and Productivity Program 2: Provenance, Verification and Promotion of Welfare Credentials	Program 1: Shearer and Wool Handler Training Program 2: Wool Clip Quality Assurance	Program 1 : The Environment and Climate Change Program 2: Carbon Program 3: Provenance, Verification and Promotion of Wool Carbon Eco-Credentials	Program 1: Grower Education and Extension Program 2: Education and Extension to Stakeholders and the Marketplace Program 3: Wool Forecasting and Market Feedback

Figure 16: Summary of AWI's on-farm RD&E Strategic Framework

3.3.2 Off-farm RD&E

The focus of AWI's off-farm RD&E efforts will be on addressing the product and process barriers to wool consumption. To achieve this objective, the Strategic Plan outlines a range of off-farm RD&E themes:

- Fibre Quality, Innovation and Textile Management;
- Performance Apparel; and
- Quality Assurance, Environment and Carbon Management.

Fibre Quality, Innovation and Textile Management

This theme will use off-farm RD&E to:

- expand wool's potential in the casual wear market (primarily through the development of new casual effects in wool to compete with cotton in the medium to up-market segment);
- build wool's market share relative to other luxury fibres (through the optimisation of softness and drape),
- drive innovation in key market segments (such as womenswear, and the use of Merino Cool in spring and summer), and
- improve wool's performance in terms of whiteness and colour absorbency.

Performance Apparel

This theme will aim to build wool's market share in the performance apparel market by:

- Developing bespoke moisture management systems for yarns and fabrics;
- Improving the quality and performance of circular knits and seamless knits;
- Developing comparative data with other fibres about the anti-odour characteristics of wool; and
- Optimising manufacturing procedures using Sheep CRC developments to measure next to skin comfort and softness.

Quality Assurance, Environment and Carbon Management

This theme will aim to improve the environmental performance of wool manufacturing, aftercare and disposal. Specifically, by:

- Reducing the usage of energy and water during manufacturing (particularly in relation to raw wool sourcing and dyeing and finishing);
- Reducing carbon use during garment care, through low temperature machine washing, machine drying energy reduction, and minimum or no ironing;
- Reducing carbon use during garment disposal, through the facilitation of "end of garment life" recycling, and accelerated biodegradability; and
- Reducing chemical use during manufacturer, particularly in relation to processing and dyeing.

This theme will also aim to improve quality assurance processes, as well as increase global processing capacity.

Summary

Figure 17 provides a summary of AWI's strategic framework for off-farm RD&E.

Objective	Develop a range of product and process innovations that address opportunities to increase the use of wool in apparel and interiors.		
Approach	Using insights gained into the barriers to incremental consumption of Wool, AWI will implement six strategies that, in synergy with On-Farm strategies will help generate incremental demand for Australian wool.		
Outcomes Off Farm R&D Sub Program	The generation of information and knowledge to increase demand for wool and to foster the viability, productivity and sustainability of the Wool Industry through investment in Off-Farm R&D.		
Themes	Quality assurance, Environment and carbon management	Performance apparel and safety attributes.	Fibre quality, innovation and textile development
Programs	Program 1: Quality assurance Program 2: Sustainable and ecological processing – chemicals, dyes, water and energy Program 3: Off-Farm carbon footprint, garment care, decomposition and recycling Program 4: Increasing global processing capacity	Program 1: Consolidate, enhance and transfer knowledge regarding the performance, thermal, regulatory, odour and moisture management and fire safety attributes of wool	Program 1: Wool whiteness and colour absorbency Program 2: Next to skin comfort Program 3: Casualisation Program 4: Improved aesthetics Program 5: Womenswear Program 6: Wool for all seasons

Figure 17: Summary of AWI's off-farm RD&E Strategic Framework

3.4 Institutional reform and corporate governance

A key area of focus of the Productivity Commission’s review of Rural RDCs is the operational and organisational performance of the RDCs. In particular, the Productivity Commission is tasked with considering any impediments to the efficient and effective functioning of the RDC model and identify any scope for improvements, including in respect to governance, management and any administrative duplication.

AWI welcomes the Productivity Commission’s inquiry into the operational and organisational performance of the RDCs. AWI takes its responsibilities as a conduit for woolgrower and taxpayer funds seriously, and strives to ensure that its governance, management and administrative practices match industry and community expectations.

To this end, AWI has recently undertaken a number of important steps to enhance the organisation’s performance and strengthen its reputation with key stakeholder groups. The goal of this “organisational refresh” is to ensure that AWI is as responsive and efficient as possible in delivering R&D and marketing outcomes. Details of the steps that AWI has undertaken are provided in turn below.

AWI has taken steps to strengthen its performance in a wide range of areas – strategic planning, stakeholder consultation and project management

3.4.1 Implementation of the Arche Review recommendations

In 2009, AWI commissioned Arche Consulting to conduct a review of the organisation’s performance. On completion of the project, the consultants made a number of recommendations relating to its corporate planning, engagement with key stakeholders and governance arrangements. AWI is currently in the process of implementing many of these recommendations, specifically in relation to stakeholders and strategic planning, evaluation and measurement, processes and systems, and governance.

AWI commissioned Arche Consulting to conduct a review of AWI’s performance.

AWI is in the process of implementing these recommendations.

Stakeholders and strategic planning

The Arche review made a number of recommendations with reference to AWI's stakeholder engagement and strategic planning. Specifically:

Recommendation 1: AWI work with its industry stakeholders to clearly define the company's position and role in the industry. These should then be clearly communicated to AWI's stakeholders. The recommendations of this 3 year performance review should then be considered in light of this defined role.

Recommendation 2: Following WoolPoll 2009, AWI embark on an appropriately designed strategy setting process to provide a clear and detailed plan for the company.

Recommendation 4: AWI take steps to constructively engage shareholders and key stakeholders. AWI should work with stakeholders to establish a common understanding and shared expectations for involving the wider industry in strategy setting.

AWI has embarked on a comprehensive strategic planning process, involving the Board, senior management, independent advisers, and key stakeholder groups. The organisation's new Strategic Plan (2010-13) and Annual Operating Plan for 2011-11 is expected to be released in July 2010.

As an entity owned by Australian woolgrowers, AWI adopts a highly consultative approach to the development of its strategic priorities, and strategic and operating plans. Prior to the release of the Arche Review, AWI undertook an evaluation of its stakeholder engagement. The outcomes of this review reinforced the recommendations of the Arche Review, and have led AWI to adopt a more streamlined consultation process, focussing on:

- a Wool Growing Industry Consultation Committee to ensure that woolgrower representative groups are formally consulted at least twice annually. The Australian Government (represented by the Department of Agriculture, Fisheries and Forestry) is a member of this committee; and
- an Animal Welfare Forum, comprised of the Australian Veterinary Association, Compassion in World Farming, Animal Liberation, Animals Australia and the RSPCA.

As part of its stakeholder consultation plan for 2010, AWI will engage:

Woolgrowers through RD&E workshops in all wool growing areas, an Industry Workshop, and at least 50 face-to-face engagements at key regional events including shows, field days, forums and two industry workshops;

Retailers through quarterly reports to the British Retail Consortium and the National Retail Federation, formal consultations, and informal discussions on issues as they arise;

AWI has implemented a comprehensive stakeholder consultation process which informs its research and development program.

AWI's consultation program includes all stakeholders who are impacted by R&D outcomes – woolgrowers, retailers, government and R&D vendors.

Manufacturers and Brands, through an informal panel assembled by AWI and comprised of key operators in the manufacturing supply chain (in particular European fashion brands that set global fashion industry trends).

Fashion Designers, through a similar informal panel assembled by AWI, comprised of designers who influence both the form and content of fashion apparel.

Government through six monthly Ministerial meetings and reports to the Department of Agriculture, Forestry and Fisheries; and

R&D vendors through a conference (R&D Technical Update) and informal consultations on issues as they arise.

Figure 18 below illustrates AWI's new annual consultation cycle, and how the organisation's stakeholder engagement informs its strategic planning processes.¹

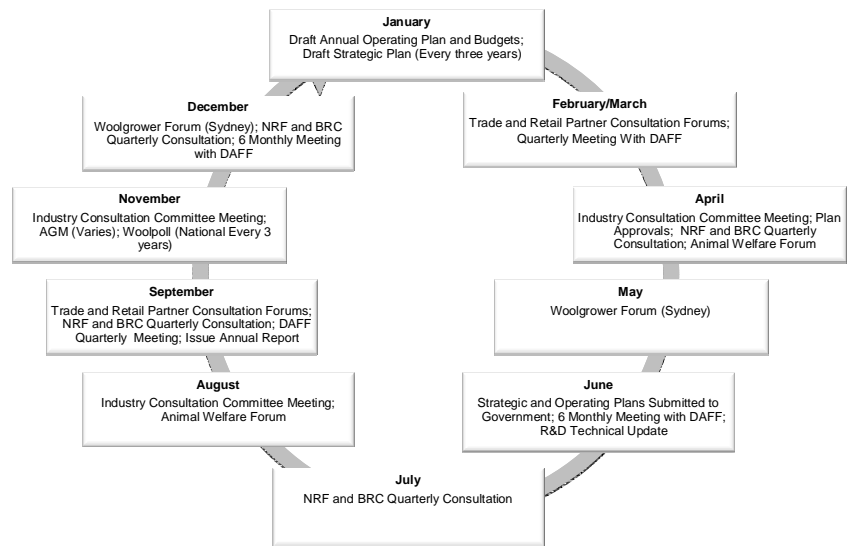


Figure 18 AWI's annual consultation cycle

Evaluation and measurement

AWI is introducing a robust project evaluation framework through which all significant R&D projects pass through.

This allows for an explicit consideration of the benefits of R&D and ensures that projects implemented are consistent with AWI's strategic and therefore reflective of industry's priorities.

The Arche Review recommended a number of changes to AWI's approach to evaluation and measurement. Specifically:

Recommendation 3: AWI consider establishing internal structures to support the development and consistent implementation of a planning and evaluation process that allows rigorous exploration and assessment of value to levy payers.

Recommendation 5: AWI, as part of its strategy setting process, establish a comprehensive framework to enable the clear measurement and reporting of performance and the value it delivers to levy payers.

Project outcomes are reported to the Board at regular intervals – in written monthly reports to Board meetings and every six months through a formal process of operational plan and project review and reporting.

In line with the Arche Review recommendations, AWI engaged PricewaterhouseCoopers (PwC) to develop a robust project evaluation framework that will provide the organisation with the ability to assess and compare projects (both *ex ante* and *ex post*) in terms of their value to the wool industry and the broader Australian community. This framework is based on economic, environmental and social criteria (Figure 19), and can generate such evaluation measures as:

- Internal Rate of Return;
- Net Present Value;
- Benefit Cost Ratio; and
- Projected Sales to Cost Ratio.

Economic	Environmental	Social
Increased sales	Improvements in natural resource management	Rural sustainability and job creation
Cost reductions (on-farm and off-farm)	Reduced impact from chemicals/pesticides	Building innovation and research skills for the industry (on-farm and off farm)
Productivity improvements (on-farm and off-farm)		Improved communication and understanding
Increased quality (on-farm and off-farm)		Improvements in animal welfare
Increased brand awareness		

Figure 19: Criteria underlying AWI's new evaluation framework

Processes and systems

The Arche Review made a number of recommendations with reference to AWI's internal processes and systems. These include:

Recommendation 6: AWI review the structures and processes that operate in similar industry-owned companies, as one means of considering improvements in its value creation to levy payers.

AWI has restructured its internal operations to become a leaner, more commercially oriented company with a sales and customer-focused culture – more appropriate to the particular profiles of the wool and textile industries. AWI has also simplified our support processes to take complexity and cost out of our business.

AWI's engagement with other industry-owned companies and research and development organisations is ongoing. AWI continues to monitor developments and improvements in their structures and processes, and to consider how those can contribute to a more efficient and effective AWI.

Recommendation 9: AWI comprehensively review its risk, fraud and IP plans and management processes. The company should ensure that there is a common understanding of, and responsibility for, the plans, and that they are embedded in company operations.

The AWI Board and senior management has reviewed and enhanced these plans with the assistance of an external expert. These plans are part of the company's governance framework.

Recommendation 10: AWI comprehensively document and communicate the actions the company is currently taking to improve business processes.

Upon finalisation of the Statutory Funding Agreement, Strategic Plan and Annual Operating Plan, AWI will document and communicate to staff and its internal stakeholders its improved business processes.

Governance

The Arche Review made two recommendations with reference to the governance arrangements of AWI:

Recommendation 7: The AWI Board comprehensively review its corporate governance practice and take steps to ensure that it meets modern expectations of good practice.

The Company has committed to adopting good corporate governance practices drawing on the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations, Second Edition, August 2007*

The Board and senior management are working together to address a range of governance issues, including those identified in the Review of Performance. Independent expert advice has been obtained, where required.

The scope of this work includes developing and adopting new strategic planning processes, setting measureable objectives and KPIs, and reporting performance against those objectives. It also includes enhanced monitoring of compliance and risk, fraud prevention, and increased opportunities for stakeholder consultation.

A formal conflicts policy has been introduced, as well as a grievance policy, a procedure for annual CEO performance assessment and annual Board performance assessment. An update of AWI's fraud and risk plans is underway. The company is implementing a new, formal research governance process and framework designed to meet the standards in the Australian Code for Responsible Conduct of Research.

AWI has implemented a number of initiatives which ensures that governance of the organisation is good practice.

These changes to corporate governance have been progressively introduced since the second quarter of 2009.

Recommendation 8: AWI, in collaboration with shareholders and industry stakeholders, conduct a review of the architecture for the appointment of directors in the Constitution, to ensure the election of a skills based Board.

Directors of the AWI Board are elected democratically by the company's shareholders in accordance with the AWI Constitution.

The current democratically elected AWI Board has extensive industry experience and strong grass roots connections. Its combined skills base includes marketing, research governance, accounting and business skills. This skills-based board is recognised and endorsed by the company's shareholders.

At the AWI AGM in November 2009, shareholders voted to change the AWI Constitution so that elections of directors will be held every two years, rather than annually.

This will provide greater stability for the Board, and significantly, remove the cost and distraction of annual elections.

Monitoring performance

AWI has committed to conducting a further Review of Performance in 2010 to assess its progress in addressing the recommendations of the Arche Review. This review will cover the period of 1 July 2009 to 30 June 2010.

3.4.2 Statutory Funding Agreement

A Statutory Funding Agreement (SFA) is a contractual arrangement between the Australian Government and RDC's that are industry owned, such as AWI.

The SFA provides a mechanism for AWI to address the government's rural R&D objectives, and allow government to engage directly with AWI with reference to its operational performance.

The SFA between the Australian Government and AWI includes provisions regarding the corporate governance of AWI including:

- The reporting of remuneration details in AWI's annual report;
- The reporting of risk management processes;
- The application of ASX Corporate Governance Council's Corporate Governance Principles and Recommendations; and
- The objective of a Nominations Committee that would provide recommendations about the skills and competence of nominees to the Board.

The SFA provides AWI with a mechanism to address the Government's R&D objectives.

3.5 Key findings

The Australian wool industry has undergone significant organisational change over the past two decades. History has shown that separating the provision of R&D, marketing and industry services is unsustainable, and that AWI's current structure (housing all three functions under one roof) is the industry's natural convergence.

WoolPoll 2009 highlighted the continued support of woolgrowers for the wool levy and its current 2 per cent rate.

AWI has undertaken a number of steps to enhance its performance, so that Australia's woolgrowers are best placed to overcome the challenges facing the industry. These steps include:

- Refreshing AWI's governance, stakeholder engagement and operational processes; and
- Developing a new Strategic Plan (and associated Annual Operating Plans) for AWI.

As outlined in the Strategic Plan, R&D is integral to the future direction of AWI and its role in underpinning the future of the Australian wool industry.

4 Rationale for continued government support of wool research and development

This section outlines the rationale for continued government support for wool industry R&D.

Significant funding will be required to drive the R&D investment program outlined in AWI's strategic plan.

The previous two sections have highlighted that:

The Australian wool industry currently faces a number of challenges, relating to changes in market demand, a shift in the price differential between wool and lamb meat prices, and prolonged drought conditions.

To assist the Australian wool industry in meeting and overcoming these challenges, AWI has recently finalised its Strategic Plan for 2010-11 to 2012-13; and

R&D is integral to AWI's Strategic Plan and the future of the Australian wool industry. R&D is a mechanism to drive improvements in:

- farm productivity and profitability,
- the sustainability of wool production, manufacturing, use and disposal, and
- wool's relative market share in key segments (particularly casual wear).

Currently, woolgrowers make a substantial contribution to the R&D funding requirement as they directly benefit from the projects implemented. However, in many cases there are many indirect beneficiaries from this investment outside the wool industry. Such spillover effects justify Government financial support.

Significant funding is required to drive the R&D investments outlined in AWI's Strategic Plan. As a primary beneficiary of the likely benefits that will be generated by the proposed R&D programs, the Australian wool industry bears responsibility to provide a considerable share of this funding — a responsibility that the industry has the capacity (and willingness) to meet through the current levy arrangements.

A strong case exists for government funding to assist the Australian wool industry in realising the benefits from AWI's Strategic Framework for on-farm and off-farm R&D. This case rests on two key elements:

- the proposed R&D under AWI's Strategic Plan are likely to generate significant spillover benefits — as previous wool industry R&D has generated demonstrated spillover benefits; and
- there is a risk that a decrease in government funding will undermine woolgrower support for the current levy arrangements — negatively impacting the quantum of available funding for wool industry R&D.

While there is a strong rationale for continued government funding support, there is scope to adjust the underlying mechanism by which the level of government funding support is determined. AWI would be willing to work with government to develop a more efficient and responsive funding mechanism for rural R&D.

Greater detail about the rationale for government funding support and the mechanism for how this support should be provided is outlined below.

4.1 Spillover benefits

Generally speaking, it is difficult (and of questionable utility) to draw a sharp distinction between private and public benefits generated by rural R&D. Private benefits may end up generating significant public benefit in future related R&D projects, and vice versa.

This notwithstanding, there are considerable public, or spillover, benefits generated by the R&D identified in AWI's Strategic Plan. These benefits are likely to be accrued by multiple segments of the Australian community, and cover such areas as the environment, economic growth, on-farm and off-farm productivity, and Australian history and culture. The likely spillover benefits associated with AWI's Strategic Plan are outlined in greater detail below.

R&D undertaken in the wool industry also benefits:
Sheep meat and other livestock industries;
- consumers of woollen products;
- rural and regional communities;
- the Australian community; and
- other participants in the wool supply chain.

Australian community

Given that livestock account for approximately 11 per cent of Australia's total greenhouse gas emissions (DCCEE 2010), and sheep graze over 11 per cent (85 million hectares) of Australia's landmass (ABS 2008), the Australian community will benefit from AWI's attempts to:

- Improve the natural resource management capacity of Australian woolgrowers (through identifying improved farming systems and management strategies, reducing pesticide use, and providing education to woolgrowers and shearers and wool handlers),
- Reduce the carbon footprint of wool production (through investments in carbon sequestration, reducing the sheep industry's contribution of methane, and reducing greenhouse gas emissions associated with the manufacture, use and disposal of wool garments),
- Unlock the potential benefits of carbon sequestration in soils and pastures and in well managed on-farm native forestry — according to CSIRO (2010).

Greater use of wool relative to competing fibres (an objective of AWI's Strategic Plan) would also generate a number of spillover benefits for the Australian community. These include:

- A reduction in the negative environmental impacts associated with manmade fibres — specifically, the use of non-sustainable resources during the manufacture of apparel with manmade fibres, and landfill growth due to the non-biodegradability of manmade fibres; and
- An increase in health benefits — the use of woollen infant wear and bedding can reduce the risk of sudden infant death syndrome and hypothermia, while the use of woollen products more broadly has been shown to reduce house dust mites and associated allergies.

Rural and regional Australia

Measures aimed at improving the productivity and profitability of Australian wool producers — through both on-farm improvements and increasing demand for wool — will contribute to the vibrancy of rural and regional communities. A more profitable and robust wool industry will be able to play a greater and more sustainable role in generating economic growth in rural and regional areas, and contributing taxes and rates to support the development of local infrastructure and services.

It is important to note that much of the country used for Merino grazing is not suitable for cropping or other enterprises. Ensuring that the wool industry in these areas is as productive and profitable as possible represents the best approach towards generating economic sustainable growth in the relevant communities.

Other participants in the wool supply chain

- While AWI draws its funding primarily from woolgrowers, most of its R&D program will generate benefits for other participants further along the supply chain — such as early and late stage processors, retailers and ultimately consumers. For example, AWI's proposed off-farm strategic framework is likely to:
- increase processing efficiencies (by improving quality assurance processes, and reducing chemical, water and energy use); and
- increase demand for wool (by improving the useability of wool in key market segments, such as casual and performance wear, and increasing consumer awareness about the ecological and environmental benefits of wool).

Consumers of woollen products

AWI's efforts at expanding wool's use in casual and performance apparel is likely to increase competition in fibre use in the casual wear market — leading, in turn, to greater consumer choice.

Sheep meat and other livestock industries

AWI's efforts to:

- reduce the impact of fly strike, lice and worms, and dog predation,
- develop effective genetic benchmarking,
- identify efficient feed use strategies, and
- improve farming systems and management strategies,

are likely to generate knowledge, techniques and products that will benefit not only wool producers, but other livestock producers as well.

4.1.1 Demonstrated benefits arising from wool industry R&D

There is a history of wool industry R&D generating significant private and public benefits. The following four examples highlight the range and extent of these benefits. Greater detail about each of the examples is provided in Appendix A.

Example 1 — Land, Water and Wool

The Land, Water and Wool (LWW) R&D program was a collaborative effort by Australian Wool Innovation and Land and Water Australia in late-2001. The program consisted of six sub-programs; the objectives of which were to raise the focus, motivation and awareness of woolgrowers with reference to the sustainable management of natural resources.

In 2007, AGTRANS Research was commissioned to undertake a Cost Benefit Analysis (CBA) of the LWW program. Using a triple bottom line methodology, AGTRANS Research identified a range of quantitative and qualitative benefits. Figure 20 highlights the results of the CBA across five sub-programs (the sixth was focused on identifying future R&D strategies). Overall, the LWW program was estimated to have generated a Benefit Cost Ratio (BCR) of 3.45 to 1 — considerably higher than the average BCR from rural R&D identified by the Productivity Commission in its issue paper.

	Net Present Value (\$m)	Benefit-Cost Ratio	Internal Rate of Return (%)
Sustainable Grazing on Saline Land	31.67	2.13 : 1	11.8
Rivers and Water Quality	23.76	6.55 : 1	42.9
Biodiversity and Vegetation	32.52	6.26 : 1	43.2
Managing Climate and Variability	7.51	4.16 : 1	19.9
Managing Pastoral Country	0.77	1.51 : 1	8.9
Overall investment	110.81	3.45 : 1	22.0

Figure 20 CBA results, Land, Water and Wool Program

Key spillover benefits identified by AGTRANS Research included:

- Water quality improvements — due to reduced runoff of sediment and trapping of nutrients;
- Biodiversity enhancement;
- Increased carbon sequestration;
- Pollination and improved pest control from beneficial insects, birds and bats that use riparian areas as habitat;
- Reduced spread of salinity and soil erosion;
- Enhanced amenity value for woolgrowers and wider community; and
- Enhanced awareness of the wider community regarding sustainable management of natural resources by woolgrowers and their capability of performing a stewardship role.

Example 2 — Dark and Medullated Fibre

Dark and Medullated Fibre (DMF) was a collaborative project between AWI and the Australian Wool Testing Authority that aimed to provide a greater level of quality assurance for buyers of wool products.

Dark and medullated fibres can produce unwanted results when processing wool. When selling wool, vendors (i.e. woolgrowers) are

generally required to declare the risk level of DMF associated with their wool.

The DMF project sought to scrutinise the quality of the vendor declarations by subjecting a sample of wool (sold either privately or via auction) to a DMF detection test. The results of this test were then cross-referenced with the original vendor declaration for the wool to identify the extent of variation between the DMF results and the DMF risk level declared by the vendor.

The DMF project generated clear benefits across the wool supply chain. Buyers of Australian wool were given greater confidence about the declared risk levels of DMF. The Australian wool industry, meanwhile, obtained:

Valuable information about the level of DMF contamination currently in the wool clip and the robustness of the vendor declaration process; and

A market advantage, deriving from buyers of Australian wool having greater confidence in the quality of vendor declarations.

As the benefits from improving the quality of vendor declarations are spread across wool producers and processors, there had been little attempt previously to fund R&D to scrutinise declared DMF risk levels. AWI support for the DMF project was thus required to fill the void in the market.

Example 3 — Grain and Graze

Grain and Graze (G&G) was a collaborative research project between AWI, the Grains Research and Development Corporation (GRDC), LWA and MLA. It aimed to enhance the profitability and sustainability of mixed farm enterprises — i.e. farms that are involved in the production of sheep and/or beef cattle, as well as the material production of broadacre crops.

Natural Resource Management Consultants and Advanced Choice Economics were commissioned to evaluate G&G against a range of areas. These included:

Meeting stakeholder needs — The evaluation concluded that G&G met the needs of stakeholders to a satisfactory standard, though areas of improvement were identified;

Triple Bottom Line — The evaluation concluded that the national TBL goals, objectives and targets had been substantially met during the investment period of G&G, with the program improved mixed farm profitability and sustainability, and increased confidence and pride among mixed enterprise producers;

Sustained Practice Change — The evaluation found that G&G achieved a further adoption of already existing practices, rather than the introduction and adoption of new practices; and

Return on Investment — The evaluation concluded that, using a standard scenario, G&G generated a NPV of \$14.8 million and a BCR of 1.48 to 1.

Example 4 — Shearer and wool handling training

Ensuring that there are adequate numbers of skilled staff in the Australian wool industry is a determining factor that ensures the long term profitability of the industry. Accomplishing this will ensure that both shearers and wool handlers have the requisite skills to serve the needs of the industry going forward.

The aims and objectives of the program include:

- Increase the productivity and quality of shearers and wool handlers trained with AWI funds.
- Aim to attract trading funding from other sources resulting in at least a 6 to 1 ratio of income from external sources to income from AWI.
- An increase in the quality of training for existing shearers by 10 per cent and wool handlers by 20 per cent.
- An increase in the number of novice shearers and wool handlers trained by all funded sources over three years by 15 per cent.
- For individuals who have had AWI-funded training, an improvement in work behaviours consistent with OH&S by 15 per cent.
- Overall increases in productivity to the industry.
- Overall cost reductions to the industry
- Decrease the AWI management component of the programs by placing the emphasis on the providers controlling their own cash flows and invoicing AWI twice/three times a year.

4.2 The relationship between government and grower support for R&D

The Australian Government currently provides AWI with a contribution for wool-related R&D. There is a risk that a reduction in government funding support could negatively impact the willingness of woolgrowers to contribute to R&D.

From its long engagement with woolgrower representative bodies and levy payers themselves, AWI is aware that woolgrowers generally believe that government has a role in driving R&D investment (in the wool industry and more broadly). The readiness of woolgrowers to contribute to R&D through the levy is in part based on the perception that government is, at the very least, prepared to meet the wool industry half way providing a substantial contribution.

If the Australian Government decided either to reduce government funding support to AWI and/or direct government funding to a “super-RDC”, there is a risk that woolgrowers would perceive such moves as an abandonment of the government’s core responsibilities. As a

consequence, woolgrowers may be less likely to support a levy arrangement (compulsory or otherwise) to fund R&D. In other words, changes to current funding arrangements have the potential to reduce wool-related R&D expenditure beyond the level of change made to government funding support.

4.3 The appropriate mechanism for government funding support

The Australian Government provides funding support to AWI through an annual contribution. However, that contribution is tied to GVP which has been in decline which has the impact of reducing the funding available to R&D at a time when the importance of R&D is heightened.

At present, the Australian Government provides funding support to the RDCs through an annual contribution; the value of which is capped at 0.5 per cent of industry GVP. While this arrangement provides the Commonwealth with a relatively impartial mechanism for allocating R&D funding across the rural sector, its effectiveness as a means of driving rural R&D outcomes is questionable.

The key problem is that the current funding model essentially ties government funding support for each rural industry to the fortunes of that industry, regardless of need. The greater the level of production, the greater the scope for government funding support. Conversely, declining production results in a contraction of government funding support.

This presents two issues impacting on R&D; the first being production variations due to seasonal conditions such as drought (currently addressed through government drought funding); the second being significant changes in the market. It is this latter point which has not been adequately addressed in the past.

Under the current model, government may increase or decrease its expenditure on R&D irrespective of an industry's identifiable need for R&D-driven improvements, the potential for benefits to be realised through investments in R&D, and the industry's demonstrated willingness to expand its own R&D support. In other words, while there is a direct link between GVP and government R&D expenditure, there are no direct links between government R&D expenditure and other important factors which may justify increased (or decreased) R&D funding.

The current funding model could be improved. AWI would be willing to work with government to develop a more efficient and responsive funding mechanism for rural R&D.

Consequently, there would appear to be scope for government to examine the appropriateness of its current mechanism for funding the RDCs. AWI would be willing to work with government to develop a more efficient and responsive funding mechanism for rural R&D.

4.4 Key findings

A strong case remains for continued government funding support for wool industry R&D. This case rests on:

- The existence of considerable spillover benefits associated with wool industry R&D — these benefits primarily rest with other rural industries, other participants in the wool supply chain, rural and regional communities, and the broader Australian community; and
- The potential risk that a reduction in government funding support may negatively impact the willingness of woolgrowers to support the current levy arrangements.

While there is a strong rationale for continued government funding support, there is scope to adjust the underlying mechanism by which the level of government funding support is determined. AWI would be willing to work with government to develop a more efficient and responsive funding mechanism for rural R&D.

The Productivity Commission is to report on the most appropriate vehicle for managing Government funding of rural research and development.

AWI's submission presents a case that it is the best vehicle for continued public investment in research and development in the wool industry.

5 AWI as the vehicle for R&D

This section outlines why AWI remains the best vehicle for investing public funds in wool industry R&D.

As the previous section illustrated, there is a need for continued government funding support for wool industry R&D. An important question for government then is: what is the best vehicle for investing public funds in wool industry R&D?

AWI is the best vehicle for investing public funds in wool industry R&D. The reasons for this include:

[AWI has strong and established links with both the Australian wool industry and the Australian Government.](#) It is thus best positioned to adapt to changes in the wool industry and deliver responsive R&D solutions.

[Synergies exist between wool marketing and R&D.](#) As AWI is the wool industry's R&D and marketing body, providing AWI with government funding support for R&D thus allows for these synergies to be realised.

AWI has a demonstrated history of investing in collaborative, cross-sectoral and supply chain R&D — key priority areas for the Australian Government.

[AWI aims to be as responsive and efficient as possible in delivering R&D outcomes.](#) It has a track record of minimising the direct costs associated with delivering its R&D projects, and has introduced a project evaluation framework that will allow it to invest in R&D projects that will deliver the greatest possible returns to woolgrowers and government.

[AWI has the required governance frameworks in place](#) to provide confidence that public funds will be invested wisely.

AWI already has a proven mechanism in place to guarantee woolgrower participation in R&D and to leverage government funds.

Each of these points will be discussed in turn below.

5.1 AWI's stakeholder links

AWI has extensive and robust links with its key stakeholder groups: the Australian wool industry and the Australian government.

Wool industry partnership

The organisation's partnership with the Australian wool industry is underlined by:

The various mechanisms by which woolgrowers can directly influence the direction of AWI and its marketing, R&D and industry services activities. Specifically:

- The triennial WoolPoll, which allows eligible woolgrowers to vote on their preferred levy rate, endorse broad investment decisions, and provide feedback on other issues relevant to the industry,
- The biennial election of AWI Board directors,
- Six monthly woolgrower workshops, and
- Six monthly industry consultative committee meetings.

AWI's industry engagement strategy, which focuses on establishing and nurturing an extensive network of industry and commercial partners, who value and support AWI, its business strategies and mutual benefits through partnering. These relationships provide AWI with effective conduits to delivery market information, R&D and marketing outcomes for the Australian wool industry. Mechanisms by which AWI engages industry include:

- Regular meetings with woolgrower representative bodies and key processors;
- Numerous forums with woolgrowers in wool producing areas; and
- Outreach publications — primarily the monthly *Beyond the Bale* newsletter, and the AWI website (www.wool.com).

It is important to note that the Australian wool industry has a number of woolgrower representative bodies, most of which hold conflict views on the major issues facing the industry. Current woolgrower representative bodies include:

- WoolProducers Australia;
- Australian Wool Growers Association;
- Australian Superfine Wool Growers' Association;
- Australian Association of Stud Merino Breeders; and
- The various State and national farmers' associations – such as AgForce, the NSW Farmers Association, and the National Farmers Federation.

Government partnership

AWI's partnership with the Australian Government is underlined by:

- Regular interaction with the Government (through formal six monthly and quarterly meetings, participation in such government processes as Senate Estimates, and day-to-day discussions);
- The import that AWI places on the government's Rural Research and Development Priorities in developing its Strategic and Annual Operating Plans;
- Ongoing compliance with the SFA; and
- AWI's development of a Statement of Intent for the National RD&E Framework.

Partnership outcomes

As a result of its strong links with government and the wool industry, AWI is strongly positioned to:

- Adapt to changing market conditions; and
- Deliver R&D solutions that are responsive to industry and government needs; and
- Provide a vital link between government and industry to ensure efficient and effective investment in R&D.

5.2 Synergies between wool marketing and R&D

A central theme in the submission is that there are synergies between research and development and marketing being co-located in the one organisation.

Like a number of other industry-owned RDCs, AWI undertakes marketing activities on behalf of its levy payers, as well as funding R&D. The purpose of these marketing activities is to increase consumption of Australian wool. Given that the vast majority of the nation's wool production is exported, AWI's marketing activities are principally targeted at overseas markets — at the processor, manufacturer and consumer levels.

As discussed in greater detail in Section 3, the Australian wool industry has undergone significant organisational change over the past two decades, with responsibility for marketing and R&D being split across different organisations and housed under one body. On the basis of this evolution, it is clear that synergies exist between wool marketing and R&D — synergies that government could exploit by directing public funding for wool R&D to AWI.

There are three key synergies between wool marketing and R&D. The first of these is that a **marketing focus** encourages greater investment in supply chain R&D. An organisation (like AWI) that regularly deals with entities along the entire supply chain (growers, brokers, processors, manufacturers and retailers) is likely to have a greater appreciation of the importance of effective supply chains, and thus place greater weight on funding R&D projects that seek to overcome supply chain blockages.

The case study of the Dark and Medullated Fibre (DMF) project outlined in Section 4.1.1 provides a good example of how AWI's marketing focus and connections facilitated the investment of a supply chain R&D project.

The second key synergy is that a marketing focus facilitates a more **responsive approach to R&D**. By having close and regular contact with wool processors, retailers and consumers, an organisation synergistically implementing R&D programs with marketing programs is likely to be more strongly placed to identify and articulate client needs and gaps in the market, and transform this knowledge into viable R&D solutions.

The third key synergy is the **cost savings** that can be realised by combining wool marketing and R&D under a single organisation. A study undertaken by AWI prior to its purchase of The Woolmark Company in 2007 projected that the merger of the two companies has generated approximately \$5 million in administrative efficiencies. AWI's subsequent experience suggests that, once the integration and restructuring process has been completed, the predicted extent of cost savings is very likely to be realised.

It is also important to note that, as discussed in Section 3, the Australian wool industry has experienced many variations of how responsibility for wool marketing, R&D and industry services can be managed organisationally. It is clear from this history that the preference and seeming natural tendency of the market is for wool R&D, marketing and industry services to be housed in the organisation. Attempts to dilute or alter this arrangement are likely to lead to unnecessary and ultimately temporary organisational change before the preference of the market for a single R&D, marketing and industry services organisation exerts itself again.

5.3 Collaborative, cross-sectoral and supply chain R&D

AWI has a strong track record in collaborating with other entities in research and development.

As identified in the Productivity Commission's issue paper and reflected in the RRDPs, the Australian Government is attempting to encourage greater:

- Cross-sectoral R&D — that is, R&D that provides benefits to more than one rural industry (such as natural resources management and sustainability);
- Collaboration between the RDCs— in order to better leverage the funding and knowledge of individual RDCs; and
- Supply chain R&D.

AWI has a demonstrated track record of investing in cross-sectoral, supply chain and collaborative R&D projects. Greater detail about this track record is outlined below.

5.3.1 Cross-sectoral and supply chain R&D

AWI invests heavily in both cross-sectoral and supply chain R&D. With reference to the former, 17 per cent of AWI's R&D expenditure in 2008-09 was directed at cross-sectoral R&D projects. Key examples of cross-sectoral R&D projects⁵ to which AWI has provided funding include:

⁵ It is important to note that these examples also highlight AWI's track record of engaging in collaborative research projects.

<i>Title</i>	Development and augmentation of poison baits with enhanced canid specification
<i>Project partners</i>	AWI, Invasive Animals CRC
<i>Sectoral impacts</i>	Animal welfare and productivity (sheep meat, wool and beef) and native animals (NRM outcome)
<i>Description</i>	This project trialled the use of para-aminopropiophenone (PAPP) to control wild dogs and foxes. PAPP is seen as a more effective and humane means of controlling wild dogs and foxes than 1080 - PAPP has a quicker reaction time and causes less activity and convulsions.
<i>Outcomes</i>	Registration package for the product has been submitted to the Australian Pesticides and Veterinary Medicines Authority. If registration is successful, the product will be commercially available.

Title	Making More from Sheep
Project partners	AWI, Queensland Department of Employment, Economic Development and Innovation, New South Wales DPI, Victorian DPI, the University of Tasmania, Primary Industries and Resources of South Australia, Elders and Landmark.
Sectoral impacts	Farm productivity and profitability and natural resource management.
Description	The objective of this project was to provide Australian lamb and wool producers with a best practice package of information and management tools to assist them in achieving profitable and sustainable sheep production. The project involved the delivery of extension activities and a best practice manual across the states.
Outcomes	258 workshops were held, involving approximately 4,700 producers. An evaluation of the project revealed that it had increased awareness of best practice management tools among 71 per cent of producers, and had led to 57 per cent changing their management practices.

With reference to supply chain R&D, AWI has been increasingly targeting this area as the organisation's focus on off-farm R&D has grown over the past five years. In 2008-09, 12 per cent of AWI's R&D

expenditure was directed at supply chain R&D projects. Leading examples of supply chain R&D projects include:

Mergerised Merino. Mercerised Merino is a chemical treatment that, when applied to wool, makes it feel softer, and garments made from treated wool more comfortable. It also imparts a subtle shine to the wool fibre, making colour upon dyeing brighter — a vital attribute for the fashion industry. Although the micron of the fibres is changed little due to the process the perceived improvement both in softness and in comfort is the equivalent of using wool which is some 2 to 3 micron finer in diameter. The Mercerisation process also makes wool more compatible for blending with noble fibres such as Cashmere & Silk. The technology behind the Mercerised Merino process has now been transferred extensively to manufacturing partners in China, Korea, India, Turkey, Spain, and Italy. Many retailers and brands are running new product lines both woven products and knits based on Mercerised Merino (including Ermenegildo Zegna, Loro Piano, and Stephenel).

Merino Casual. Casualisation in the apparel fashion business is a macro-trend. Across all demographic groups, the world is dressing more casually, replacing formal wear (such as suits). A problem for wool is that there are few manufacturing processes which could make wool fabrics look and feel casual and suitable for the manufacture of casual clothing. To address this problem, AWI implemented an R&D program aimed at developing new manufacturing processes in the area of finishing; providing new opportunities for wool in the area of casualisation. Over the past two years, a number of different types of casual finishes for wool have been developed, and the technology has been transferred to manufacturing partners (primarily in Hong Kong, China, India and Italy). The response from retailers and brands has been significant with more than 60 majors expressing interest and embarking on product development based on our technologies. Some of these brands include Country Road, Hugo Boos, Esperit, and Mango.

The Merino Travel Suit. AWI invested in a R&D program aimed at developing a travel suit for business in the China domestic market. The idea behind the project was to develop a men's business suit that was robust enough to withstand the rigours of travel without creasing. Statistics illustrated the tremendous growth in travel among business people in China, and this was seen as a great opportunity to capitalise on this trend. For this project, AWI partnered with the largest manufacturer and retailer of men's suits in the Chinese domestic market (Younger Ningbo Group), which has approximately 1,200 outlets in mainland China. A range of men's travel suits were developed and launched in 2006. Over the preceding years, Younger has sold a total of 353,571 suits.

Factors that have facilitated and support AWI's investment in cross-sectoral and supply chain R&D projects include:

- The flexibility of the RDC model;
- The clarity of the government's preferred research approach, as articulated by the Rural Research and Development Priorities (RRDPs); and

- Most importantly, the support of woolgrowers, who recognise the relationship between downstream productivity and on-farm profitability. This recognition is partly driven by the complexity and length of the supply chain from farm to market.

5.3.2 Collaborative R&D

Given that the primary ruminant at the heart of AWI's R&D and marketing efforts (i.e. sheep) is also of interest to a number of other RDCs, AWI has a demonstrated history of collaborating on R&D projects with other members of the RDC family. As part of an exercise conducted across all RDCs, it was determined that 18 per cent of AWI's R&D expenditure in 2008-09 was directed at projects involving at least one other RDC. Subsequent analysis has found that this proportion is likely to increase to 20 per cent in the 2009-10 financial year. Examples of key collaborative projects include:

Title	Worm Diagnostic Tests using Polymerase Chain Reaction (PCR)
Project partners	AWI, MLA
Description	This three year project (2007-09) sought to develop a quantitative PCR DNA test for nematode eggs in sheep faeces to indicate the level of parasite burden; leading to improvements in quality assurance processes and reductions in testing times.
Outcomes	The project was successful in developing a PCR test (for seven single worm species), as well as a DNA extraction method for worm eggs from sheep faeces.

Title	EverGraze
Project partners	Co-funded by AWI, MLA and Future Farm Industries CRC. Additional in-kind and funding from State Agriculture Departments, Catchment Management Authorities, Producer groups (e.g. Central Highlands Agribusiness Forum (CHAF) and Holbrook Landcare group).
Description	<p>EverGraze is a high rainfall zone R&D project. It aims to help producers to develop new farming systems that:</p> <p>Prove that high input livestock production systems can be 50 per cent more profitable, while reducing groundwater recharge by 50 per cent;</p> <p>Prove that native pastures, either alone, or combined with improved pastures can deliver a 50 per cent</p>

Title	EverGraze
	<p>increase in profit and a significant improvement in key, regionally important, NRM indicators;</p> <p>Achieve adoption of EverGraze principles and recommended practices on a minimum of 3,000 properties across the high rainfall zone, and</p> <p>Achieve positive and active partnerships between state agencies, CMAs, agribusiness and R&D corporations.</p> <p>EverGraze is a four year project, scheduled to finish on 30 June 2010.</p>
Outcomes	<p>Network of 6 proof sites (3 native based– funded by AWI; 3 – improved pastures – MLA funded) delivering improved knowledge on how perennial pastures combined with high genetic merit sheep can improve profit and NRM outcomes, in a farming systems.</p> <p>Native sites are starting to show that well managed native perennial pastures combined with a proportion of improved pastures can support breeding ewes nutritional needs, achieve high conception rates and desirable lamb growth rates.</p> <p>Native sites are starting to show that higher intensity rotational grazing will improve NRM outcomes and achieve higher production per hectare but low production per head than less intensive systems.</p> <p>Network of up to 56 Supporting sites, where producer groups are trialling component technologies from the proof sites in their environment, with the assistance of NRM bodies or state DPI facilitators.</p> <p>Governance and co-ordination framework dominated by producers to guide the strategic direction of the project and ensure continues relevance to end users.</p>

In the case of AWI and the wool industry, the scope for international collaboration is limited. As was highlighted in Section 2, the Australian flock is overwhelmingly a merino flock, while most other wool producing countries are more heavily focused on crossbreeds and other breeds. There are thus few opportunities for Australia to pursue collaborative research projects — at least with partners that have the same level of technological maturity as AWI.

AWI has a strong track record in minimising the direct costs of delivering its R&D projects.

A rigorous project evaluation framework is in place which ensures that available funding is invested in the highest priority R&D projects which bring the largest benefits to the wool industry.

5.4 Efficiency

A key concern of the Productivity Commission's review of the rural RDCs is ensuring that they expend public monies in an efficient manner. Specifically, that RDC expenditure is:

- technically efficient (i.e. that the effectiveness of outputs generated by inputs is maximised); and
- allocated efficiently (i.e. that funds are invested in R&D projects that will deliver the greatest possible returns for woolgrowers and government).

AWI has a track record of minimising the direct costs associated with delivering its R&D projects. As Figure 21 highlights, the direct costs of AWI's on-farm R&D program decreased by more than half from 2007-08 to 2009-10. The organisation's direct costs are budgeted to remain at 2009-10 levels for the 2010-11 financial year.

	Internal costs (\$, '000s)
2007-08	2,852
2008-09	2,528
2009-10	1,150
2010-11 (budgeted)	1,220

Figure 21 Internal costs associated with AWI's on-farm R&D program

AWI's ability to allocate funds efficiently is buttressed by its project evaluation arrangements. AWI recently commissioned PwC to develop a robust project evaluation framework that will provide the organisation with the ability to assess and compare projects (both *ex ante* and *ex post*) in terms of their value to the wool industry and the broader Australian community. This framework is underpinned by economic, social and environmental criteria. Greater detail about the framework is provided in Section 3 above.

5.4.1 RDC harmonisation and future improvements

AWI is committed to further enhancing its technical efficiency — particularly through greater harmonisation of RDC administration. Possible avenues of harmonisation that AWI would be willing to explore include:

The establishment of a “virtual RDC” — this would provide a mechanism for individual RDCs to:

- share a range of common corporate services, such as human resources, information technology support and financial management, and
- standardise common business elements (such as contracts, guidelines, and reports); and
- facilitate greater alignment across RDCs (for example, through synthesising Strategic Plans, and sharing financial information).

Project evaluation — scope exists for the RDCs to share their knowledge, experience and underlying tools relating to their project evaluation frameworks. In addition, the RDCs could explore the possibility of developing a Common Project Evaluation Framework. This would ideally allow for the differences in project focus of the various RDCs, while providing a greater degree of consistency in project evaluation — leading to greater comparability and, potentially, administrative efficiencies.

Government to consider the development of a consistent agricultural research pay scale to assist RDCs in standardising the operation of research projects/proposals.

It is important to note that government could play an important role in further improving the technical efficiency of RDCs. As noted in Section 3, AWI invests the majority of its R&D expenditure in government research bodies (such as CSIRO, universities, and State Government primary industries departments).

A problem that arises in interacting with these various bodies is that each has its own arrangements and requirements relating to such issues as indemnity, intellectual property, and payment methods. Navigating these different arrangements and requirements places additional — and ultimately unnecessary — time costs on AWI and other RDC research bodies. A seemingly more efficient approach would be for government research bodies and the RDCs to develop a standardised contractual framework for RDC-related projects.

5.5 Governance

The AWI Corporate Governance Framework is designed to support the strategic and operational objectives set out in the 2010/2011 Strategic and Operational Plans by defining accountability and establishing controls.

The framework aims to meet stakeholder expectations of sound corporate governance practice and to foster a strong culture of good governance in the company.

The AWI Corporate Governance Framework is set out in the Annual Report 2008/09, and includes the following corporate governance documentation available on the AWI website at www.wool.com:

- AWI's Constitution;

- Statutory Funding Agreement;
- Corporate Governance Policy;
- Code of Conduct – Obligations to Shareholders;
- Board Charter;
- Code of Conduct – Directors and Officers;
- Charters of the Committees of the Board;
- Conflicts of Interest Policy, and
- Rules and Procedures Governing Election of Directors.

5.6 The wool levy and WoolPoll

Through the wool levy and WoolPoll, AWI already has proven mechanisms in place to ensure woolgrower participation in wool industry R&D, and to leverage public funds with those of industry, and vice versa. Government would likely find it difficult to realise these benefits by providing funds for wool industry R&D to another entity – at least in the short-to-medium term.

It is important to note that the viability of the current levy arrangements could be threatened if RDCs were amalgamated under a “super-RDC”. It is questionable whether woolgrowers would be willing to pay a levy that is directed towards a non-wool specific RDC, or if there is no clear link between revenue raised through the levy and expenditure on wool industry R&D.

5.6.1 *Issues raised by the Productivity Commission*

Compulsory vs voluntary levy

A strong case remains for preferring a compulsory levy to a voluntary levy. Three primary arguments underlie this case. First, the structure of the wool industry is still vulnerable to the problem of “free riders”. As the Productivity Commission has noted:

“Collective industry-research models can provide an effective means of internalising the externalities associated with R&D without the need for public support when those externalities are specific to a particular group. In situations where there is a small number of producers this can (and does) occur on a voluntary basis. But in industries with many firms that are also geographically dispersed, compulsory levies are often necessary to avoid the problem of ‘free riders’.”⁶

The Australian wool industry remains geographically dispersed and numerous. As was noted in Section 2 above, there are currently an

⁶ Productivity Commission (2007), *Public Support for Science and Innovation*, Research Report, Canberra, p.431.

estimated 14,370 sheep and sheep and beef properties across Australia. Significant proportions of these properties can be found across New South Wales, Victoria, Western Australia, South Australia, Queensland and Tasmania.

Second, the compulsory levy remains popular with woolgrowers. As Figure 22 highlights, the percentage of votes in favour of retaining some sort of compulsory levy (i.e. a levy of greater than zero) has averaged at 86 per cent over the four WoolPolls since 2000. Furthermore, the proportion of first preference votes in favour of a 2 per cent levy has nearly doubled over the past decade — increasing from 35 per cent in 2000 to 65 per cent in 2009. Woolgrowers remain engaged in the WoolPoll process as well — the proportion of eligible votes cast has remained stable at approximately 52 per cent over the past four WoolPolls.

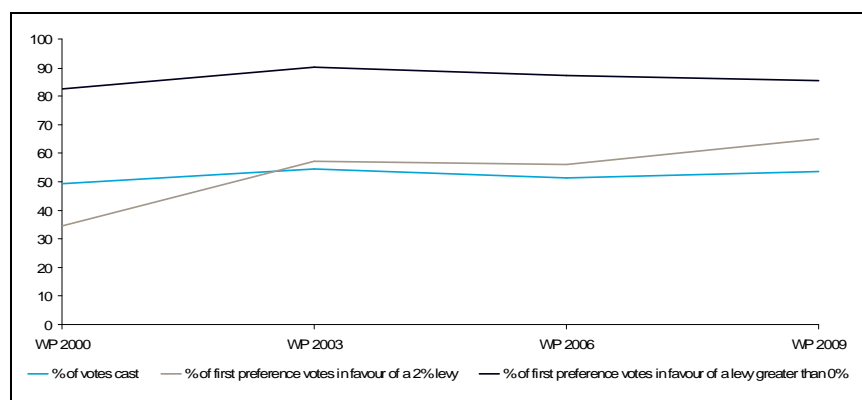


Figure 22: WoolPoll results, 2000 to 2009

Third, the proportion of woolgrowers who support a compulsory levy is likely to be greater than the proportion who would contribute to a voluntary levy. From AWI's extensive experience in engaging with woolgrowers, there is a significant proportion of levy payers who support the current levy arrangements, but do so because the levy is compulsory and the impost of contributing to the industry's R&D capacity is shared by all. Such woolgrowers are less likely to support a voluntary levy, as this approach does not provide the same level of assurance that costs are being shared equitably across the industry.

It is thus conceivable that there would be a number of woolgrowers who would be happy to pay a 2 per cent compulsory levy, but would not contribute the same amount under a voluntary system. From this perspective, a compulsory levy would more efficiently represent the "willingness to pay" of woolgrowers than a voluntary levy.

Processor contributions

As wool processors derive significant benefit from the on-farm and off-farm R&D activities of AWI (in terms of improving wool quality and production techniques, and increasing demand for wool), there is a strong, theoretical case to require processors to make a greater financial contribution to the R&D activities of AWI. Given, however, that the vast majority of processors that buy Australian wool are based

overseas (predominantly in China), the practicality of introducing a system to encourage processor contributions is questionable.

WoolPoll costs

As discussed above, AWI seeks grower feedback about the extent of the wool levy every three years through a ballot of eligible woolgrowers. While WoolPoll plays an important role in ensuring grower engagement with AWI, and that the organisation's priorities reflect those of growers, the ballot process does impose a significant cost on AWI – approximately \$680,000 for each WoolPoll to cover advertising the ballot, holding woolgrower forums, and commissioning a third party provide to administer the election. It may be appropriate to consider other, most cost effective means of balloting woolgrowers.

Possible alternative models could include:

A “virtual” ballot — This would involve eligible woolgrowers lodging their votes online. AWI and the government would need to devise a system to protect against the lodgement of multiple ballots (possibly through the use of an existing or new unique identifier).

A “multiple-RDC” ballot — Under this model, a number of RDCs could hold their levy ballots together, and share the associated administrative costs.

Wool and sheep meat levies

At present many sheep producers pay two levies for rural R&D — one paid on the sale of wool (collected for AWI to invest in wool industry R&D) and one paid on the sale of sheep/lambs (collected for MLA to invest in red meat industry R&D).

It has been suggested that combining AWI and MLA and collecting only one levy from sheep producers would be a more efficient means of administering the contribution to sheep related R&D, compared to the current arrangements.

However combining AWI and MLA would not in fact result in greater efficiencies as suggested by various parties. While both levies are collected from sheep producers, the wool and sheep meat industries have clear differences — differences that affect the R&D needs of both industries.

The different R&D needs of the wool and sheep meat industries are distinguished by two critical factors. The first is that wool and sheep meat are clearly different products — the former is a fibre, intended for use in apparel; while the latter is a food source, destined for human consumption. The second is the nature of the supply chains of both sectors. These differences have a significant impact for R&D both on- and off-farm.

On-farm - the key focus of the wool industry is ensuring that sheep health and genetics are best suited to maximise wool quality and production. The key focus of the red meat industry, on the other hand, is

ensuring that livestock health and genetics are best suited to maximise red meat quality and production. AWI and MLA already collaborate significantly in areas of shared benefit. Combining AWI & MLA would not change the size of this collaborative R&D effort.

Consultations with woolgrowers undertaken by AWI as part of the R&D planning process, indicate their priorities lie largely in the off-farm R&D portfolio, hence limiting AWI's ability to invest further - and collaborate more – in the on-farm area.

Off-farm the differences in the R&D needs of the two industries are even greater. The nature of the supply chains are significantly different for each of the product types, demanding a greater need for both sectors to focus vertically on their respective supply chains. AWI's investment in the supply chain is focused on generating greater efficiencies and creating demand for new product innovations and fashion trends such as greater casualisation.

It is important to note that there are areas of commonality between the R&D needs of the wool and sheep meat industries. The current arrangements, however, provide a framework that allows the wool and sheep meat industries to collaborate on these common R&D needs. For example, AWI and MLA are currently collaborating on such R&D projects as:

- Increasing farm profitability by helping producers to develop new farming systems in high rainfall zones;
- Testing technologies to measure enteric methane production from individual ruminants; and
- Sheep genomics — AWI and MLA invested \$30 million over five years to map the sheep genome, focusing on gene markers relating to resistance to internal parasites, wool and meat quality, and wool and meat production.

It is also important to recognise the scope for efficiency gains that can be achieved through greater RDC harmonisation.

As outlined in Section 5.4.1, AWI is committed to achieving efficiency gains through such harmonisation improvements.

5.7 Key findings

AWI is the best vehicle for investing public funds in wool industry R&D. The reasons for this include:

- AWI has strong and established links with both the Australian wool industry and the Australian Government.
- Synergies exist between wool marketing and R&D.
- AWI has a demonstrated history of investing in collaborative, cross-sectoral and supply chain R&D.
- AWI has a track record of minimising the direct costs associated with delivering its R&D projects.

- AWI has the required governance and project evaluation frameworks in place to provide confidence that public funds will be invested wisely and to maximise Benefit Cost Ratios.

6 Conclusion

1. As part of its Terms of Reference for the review, the Productivity Commission is to assess four issues:
 - the economic and policy rationale for Government investment in rural research and development;
 - the effectiveness of the current RDC model – the strengths and weaknesses of the RDC model;
 - the appropriateness of current funding levels, levy arrangements and balance between public and private investment; and
 - ways of improving the RDC model – governance, administrative efficiency, project evaluation, and levy arrangements.

AWI's submission has addressed these issues and draws the following conclusions.

Economic and policy rationale for Government investment in rural research and development

AWI believes that there is a strong case for government funding to continue to assist the Australian wool industry in realising the benefits from AWI's Strategic Framework for on-farm and off-farm research and development.

AWI asserts that there is considerable public or spillover benefits generated by the research and development identified in its Strategic Framework. The beneficiaries include:

- sheep meat and other livestock industries;
- consumers of woollen products;
- rural and regional communities;
- the Australian community; and
- other participants in the wool supply chain.

The submission provides a number of examples where such benefits have occurred.

Appropriateness of current funding levels and levy arrangements

The Australian Government current provides AWI with a contribution for wool-related R&D. The current Government funding is \$11m or approximately \$400 for each wool grower.

AWI believes that the current funding arrangements have had the effect of constraining the level of research and development in the wool industry and that a change in the current funding mechanism would improve efficiency. Greater government investment in wool industry R&D is required to realise the benefits outlined in AWI's three year Strategic Plan for 2010-11 to 2012-13.

From its long engagement with woolgrower representative bodies and levy payers themselves, AWI is aware that woolgrowers generally believe that government has a role in driving R&D investment (in the wool industry and more broadly). The readiness of woolgrowers to contribute to R&D through the levy is in part based on the perception that government is, at the very least, prepared to meet the wool industry half way provide a substantial contribution.

The effectiveness of the current RDC model

AWI believes that any changes made to the current funding arrangements and institutional structure cannot be justified on economic efficiency or public policy grounds.

AWI is the best vehicle for investing public funds in wool industry R&D:

AWI has strong and established links with both the Australian wool industry and the Australian Government. It is thus best positioned to adapt to changes in the wool industry and deliver responsive R&D solutions.

Synergies exist between wool marketing and R&D. As AWI is the wool industry's R&D and marketing body, providing the organisation with government funding support for R&D thus allows for these synergies to be realised.

AWI has a demonstrated history of investing in collaborative, cross-sectoral and supply chain R&D — key priority areas for the Australian Government.

Improving the RDC model

AWI has undertaken a number of important steps to enhance the organisation's performance and strengthen its reputation with key stakeholder groups.

AWI's objective is to be as responsive and efficient as possible in delivering R&D outcomes.

AWI represents an efficient vehicle for the investment of public R&D funds. The organisation's costs in delivering publicly funded on-farm R&D has reduced over time and the organisation is committed to further enhancing its efficiency.

AWI has the required governance and project evaluation frameworks in place to provide confidence that public funds will be invested in projects which are reflective of the priorities of the wool industry.

7 Reference list

ABARE (2010), *Australian Lamb: Financial Performance of Slaughter Lamb Producing Farms, 2007-08 to 2009-10*, Canberra.

ABARE (2009a), *Australian Commodity Statistics 2009*, Canberra.

ABARE (2009b), *Australian Commodities, December Quarter*, Canberra.

ABARE (2007), *Australian Crop and Livestock Report: 30 October 2007 Drought Update*, Canberra.

ABARE (2004), *Australian Wool Industry 2004*, prepared for Australian Wool Innovation, November, Canberra.

ABARE (2000), *Australian Commodity Statistics 2000*, Canberra.

ABS (2009), *Australian National Accounts: National Income, Expenditure and Product, Cat. 5206.0, December Quarter*, Canberra.

Bureau of Agricultural Economics (1958), *Fibres Other than Wool*, Canberra.

Bureau of Meteorology (2010), "Drought statement", 6 May, <http://www.bom.gov.au/climate/drought/drought.shtml>. Accessed on: 18 May 2010.

Commonwealth Bureau of Census and Statistics (1965), *Official Year Book of the Commonwealth of Australia*, No. 51, Canberra.

Commonwealth Bureau of Census and Statistics (1960), *Official Year Book of the Commonwealth of Australia*, No. 46, Canberra.

CSIRO (2010), *Soil Carbon Sequestration Potential: A review for Australian agriculture*, for the Department of Climate Change and Energy Efficiency, Canberra.

Department of Climate Change and Energy Efficiency (DCCEE) (2010), "Agricultural emissions", 18 May, <http://www.climatechange.gov.au/en/government/initiatives/cprs/who-affected/agriculture/agricultural-emissions.aspx>. Accessed on: 20 May 2010.

Meat and Wool New Zealand (2010), *Compendium of New Zealand Farm Facts*, 34th Edition, April, Wellington.

Plastina, Alejandro (2010), "Cotton's Share of World Textile Fiber Use Continues to Decline", *Cotton Promotion Bulletin*, Volume 24, http://www.cottonpromotion.org/features/cottons_share_continues_to_decline/. Accessed on: 18 May 2010.

Productivity Commission (2010), Rural Research and Development Corporations: Issues Paper, Canberra.

Productivity Commission (2007), *Public Support for Science and Innovation*, Research Report, Canberra.

Senate Rural and Regional Affairs and Transport Legislation Committee (2000), *The Australian Wool Research and Promotion Organisation Amendment (Funding and Wool Tax) Bill 2000*, Canberra, Parliament of the Commonwealth of Australia.

Textiles Intelligence (2010), 'Statistics: Global and Regional Trends in Textile Fibre Consumption', March, <http://www.marketresearch.com/>. Accessed on: 27 May 2010.

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Appendix B Case studies

This Appendix outlines a range of case studies of AWI projects.

7.1 Land, Water and Wool

Synopsis

The Land, Water and Wool (LWW) research and development program was a collaborative effort by AWI and Land and Water Australia (LWA) commencing in late 2001. The aim of the program was to provide the Australian wool industry with the knowledge, tools and enthusiasm to minimise its environmental impact while enhancing productivity and to position itself as the world's most sustainable grower of premium natural wool. The desired outcomes of the program were:

Regulation wool industry identified and respected as taking a proactive approach to NRM;

Establishment of the groundwork for measurable change in woolgrower NRM priorities and practices;

Woolgrowers demonstrating an increased:

- Awareness of NRM issues,
- Understanding of their importance and implications for the industry, and
- Motivation to address the issues;

More than 2000 woolgrowers applying NRM innovations with a further 4000 directly contacted through LWW;

Development and enhancement of industry and knowledge within the industry; and

Industry channel and network management and development.

Sub-programs

The LWW program was split into six sub-programs; each with its own objectives and outcomes. The programs were:

Sustainable Grazing on Saline Land;

Rivers and Water Quality;

Biodiversity and Vegetation;

Managing Climate Variability;

Managing Pastoral Country; and

Future Woolscapes.

Sustainable Grazing on Saline Land

The aims of this sub-program were to

Improve production and profit from grazing salines lands;

Achieve better environmental outcomes from saline land; and

More pride from producers who have saline land on their properties and are being proactive about applying new management systems.

It was also anticipated that raising awareness and knowledge within the industry would aid decision making and facilitate the uptake of environmentally sound management practices.

Rivers and Water Quality

The aim of this sub-program was to assist woolgrowers better manage their rivers and riparian areas and achieve environmental and productivity goals. The program provided practical methods for achieving improved river management and water quality demonstrated by leading woolgrowers, the evaluation of improved stock management methods in riparian zones and the development and communication of Riparian Management Guidelines and other information to aid best practice management.

Biodiversity and Vegetation

The aim of this sub-program was to develop, test and promote options for integrating wool production and the protection, management and restoration of native vegetation and its associates biodiversity by:

improved knowledge of the impact of grazing systems on native vegetation (including native pastures and bushland) and its associated biodiversity at a number of scales;

Development of best practice management guidelines for managing native pastures and bushland in wool production landscapes in the high rainfall and sheep cereal zones;

Input into criteria that could be used in the development of accreditation schemes for specific environments;

Review of incentive mechanisms which may encourage public and private investment in biodiversity conservation on sheep-grazing properties and provide these to AWI for consideration; and

Provision of authoritative data to support the environmental credentials of the wool industry.

Managing Climate and Variability

The objective was to rapidly increase woolgrower awareness and use of seasonal risk assessments which contribute to sustainable grazing management through the development of and demonstration of decision making tools to wool growers.

Managing Pastoral Country

The objective of the subprogram was to provide simple tools that could be readily used by woolgrowers for more effective management and monitoring of grazing in order to enhance both profitability and sustainability.

Future Woolscales

The aim of this subprogram was to assist the wool industry to explore various scenarios and identify the opportunities, threats and implications for the wool industry of these scenarios at a national level.

Results and Outcomes

In 2007, AGTRANS Research was commissioned to undertake a Cost Benefit Analysis (CBA) for the LWW program. Each sub-program was individually analysed except for the Future Woolscales subprogram due to difficulty in adequately quantifying the benefits that it would accrue. The CBA included a breakdown of both the LWW program as a whole and AWI's part contribution. Figure 23 provides a summary of the results of the CBA analysis.

	Total Benefits and Costs	AWI Benefits and Costs
Sustainable Grazing on Saline Land		
Present Value of Benefits (\$m)	59.68	18.98
Present Value of Costs (\$m)	28.02	8.86
Net Present Value (\$m)	31.67	10.11
Benefit-Cost ratio	2.13 to 1	2.14 to 1
Internal Rate of Return (%)	11.8	11.8
Rivers and Water Quality		
Present Value of Benefits (\$m)	28.04	11.60
Present Value of Costs (\$m)	4.28	1.75

	Total Benefits and Costs	AWI Benefits and Costs
Net Present Value (\$m)	23.76	9.85
Benefit-Cost ratio	6.55 to 1	6.64 to 1
Internal Rate of Return (%)	42.9	44.6
Biodiversity and Vegetation		
Present Value of Benefits (\$m)	38.70	18.48
Present Value of Costs (\$m)	6.19	2.93
Net Present Value (\$m)	32.52	15.55
Benefit-Cost ratio	6.26 to 1	6.31 to 1
Internal Rate of Return (%)	43.2	44.7
Managing Climate and Variability		
Present Value of Benefits (\$m)	9.89	3.89
Present Value of Costs (\$m)	2.38	0.94
Net Present Value (\$m)	7.51	2.96
Benefit-Cost ratio	4.16 to 1	4.16
Internal Rate of Return (%)	19.9	19.8
Managing Pastoral Country		
Present Value of Benefits (\$m)	2.22	0.89
Present Value of Costs (\$m)	1.45	0.59
Net Present Value (\$m)	0.77	0.30
Benefit-Cost ratio	1.53 to 1	1.51 to 1
Internal Rate of Return (%)	8.9	8.7
Non Subprogram Related Benefits and Costs		
Present Value of Additional Benefits (\$m)	17.55	13.63
Present Value of Additional Costs (\$m)	2.27	1.76
Overall Investment*		

	Total Benefits and Costs	AWI Benefits and Costs
Present Value of Benefits (\$m)	156.08	67.46
Present Value of Costs (\$m)	45.27	17.37
Net Present Value (\$m)	110.81	50.09
Benefit-Cost ratio	3.45 to 1	3.88 to 1
Internal Rate of Return (%)	22.0	26.3

Figure 23 Cost-Benefit Analysis results, Land, Water and Wool program
 Notes: * These figures represent the other costs and benefits not directly attributed to each of the subprogram, but were generated by the LWW program as a whole.

The CBA was conducted using a triple bottom line methodology, whereby benefits were categorised under Economic, Environmental and Social criteria. There were a number of benefits that were unable to be quantified, and as such, were not included in the CBA calculations. These benefits were included for completeness and to illustrate that they were considered in evaluating the program as a whole. The reasons behind the non-inclusion of some of the benefits included:

A weak or uncertain scientific relationship between the research investment and actual R&D outcome and benefit;

There were difficulties in establishing a generalised assumption;

The magnitude of impact was immaterial; and

In the case of Social benefits, adequate valuation methodologies were unable to be applied to quantify the benefits.

There were a number of quantifiable and non-quantifiable benefits that were linked to program and sub-programs. They are summarised below.

Quantifiable Benefits

Economic	Environmental	Social
Increased adoption of saltland pastures	Rehabilitation of degraded land	
Higher gross margins on a whole of farm basis from lower establishment costs and risks	Water Quality improvement	
productivity increases	Biodiversity enhancement	
water quality	Increased carbon sequestration	
pasture productivity	Ecological value of improved biodiversity	

Economic	Environmental	Social
<p>improvements</p> <p>improved growth rates</p> <p>reduced mortality rates</p> <p>pollination</p> <p>improved pest control</p> <p>Reduced private costs in fencing, watering planting and input costs</p> <p>Increase in long term average profitability by use of climate forecasting information</p> <p>Maintenance and improvements of productive capacity and profitability from improved stocking rate and grazing improvements</p> <p>More efficient use of regulation and incentives by governments</p>		

Non-quantifiable Benefits

Economic	Environmental	Social
<p>Private benefits including improved grazing, shelter, livestock performance and product quality and reduced mustering costs</p> <p>Pollination and improved pest control from beneficial insects, birds and bats that use riparian areas as habitat</p> <p>A future research agenda that is robust given the ranger of futures considered</p> <p>More astute alignment of strategic policies with</p>	<p>Reduced spread of salinity</p> <p>Reduced soil erosion and salt export</p> <p>Revegetation of otherwise very low value habitat</p> <p>Improved water quality due to reduced runoff of sediment and trapping of nutrients</p> <p>Reduced land degradation potential from</p>	<p>Renewed pride and satisfaction</p> <p>Enhanced amenity value for woolgrowers and wider community</p> <p>Increased individual and community capacity to manage saline land</p> <p>Increased individual and community capacity to manage riparian areas</p> <p>Greater sense of satisfaction among woolgrowers for 'doing the right thing'</p>

Economic	Environmental	Social
<p>potential future impacts</p> <p>Optimal development of access to future markets</p> <p>Enhanced demand for wool in the long run</p> <p>More efficient future resource allocation</p>	<p>use of climatic risk assessment</p> <p>Reduced land degradation including soil erosion potential from use of more effective stocking rate decision aids</p> <p>Reduced environmental impact of the industry, due to preparedness for future issues</p> <p>Potential for the industry to be more proactive</p> <p>More relevant policies leading to higher levels of adoption of environmental management practices</p>	<p>Positive contributions to a wool growers 'sense of place'</p> <p>Enhanced individual capacity of woolgrowers to manage climatic stocking rates and grazing pressures</p> <p>Reduced anxiety in managing variable climatic conditions and uncertainty in pastoral management</p> <p>A more robust and responsive industry with a greater capacity to prepare for change, leading to increased social and economic stability for industry members</p> <p>Enhanced awareness of the wider community regarding sustainable management of natural resources by woolgrowers and their capability of performing a stewardship role.</p>

Conclusions

From the report undertaken by AGTRANS Research it is clear that the LWW has generated a positive return.

The Net Present Value (NPV) of the total program was \$110.81 million, with a Benefit Cost Ratio (BCR) of 3.45 : 1 and an Internal Rate of Return of 22 per cent. It is also clear that AWI's investment has generated positive returns for the wool industry, and has addressed a number of key economic and environmental needs. Furthermore, the spillover affects generated by the program are wide and diverse, positively impacting not only woolgrowers themselves but the wider community as a whole.

7.2 Dark and medullated fibres

Synopsis

The Dark and Medulated Fibre (DMF) project was a collaborative project undertaken by AWI and the Australian Wool Testing Authority.

The presence of medullated and dark fibres can cause unwanted results and excess costs in processing such as limiting the flexibility and uses of products made from the wool. The detection of faults at the earliest possible stage can minimise garment and fabric mending costs. The elimination of dark fibres is also a desirable result for wool which is intended to be used for white or pastel products. Furthermore, highly medullated wool may affect the results of dyes used and stand out in coloured woollen garments.

Dark and medullated fibres can arise due to a number of reasons including:

The presence of black sheep in white flocks;

Cross breeding of Merino with sheep with darker pigments or fibre;

“Black” lambs being born in white flocks due to the inheritance of recessive genes; and

Fibres more prevalent in specific types of sheep such as Suffolk, Awassi, Dorper and Damara.

When selling wool, vendors are generally required to declare the risk level of DMF associated with their wool.

Aims and objectives

The overall aim of the DMF project was to gain a greater level of understanding and assurance about the DMF declaration process. The specific objectives of the project were to:

Assess and report on the level of DMF contamination (specifically from exotic sheep) currently in the wool clip

Provide a random screening mechanism as the “stick” for woolgrowers to accurately declare their DMF risk on the vendor declaration being introduced in July 2004. This random screening is seen by the Federation of Wool Organisations (FAWO) and the International Wool Textile Organisation (IWTO) are essential to the successful implementation of the vendor declaration program.

Reassure Clients of Australian wool that the DMF risk level declared in catalogues and used in trading accurately reflect the actual level of exotic contamination of the wool clip.

Create a database of contaminated and contamination free lots required for further AWI research projects (such as processing trials).

Process and outcomes

The project required AWTA to randomly select 1 per cent of all lots of wool sampled under its current business procedures, whether sold privately or via auction. These selected lots were tested for DMF levels using benzyl alcohol sampling approach under the AWI/CSIRO automated DMF detection project.

Once the testing had been completed, the declared levels of DMF in the wool clip were cross-checked with the actual tested levels.

This cross-checking was expected to aid in consumer confidence and quality benchmarks to facilitate effective decision making. It was also anticipated that a greater level of scrutiny as a result of the DMF process would increase the quality of the end product.

The program also built on previous R&D progress made by AWI previously in partnership with the CSIRO in developing adequate testing techniques and methodologies.

The above program provides an example whereby AWI and its partner AWTA filled a void in the market. The testing procedures undertaken have provided greater level of quality of the Australian wool clip. As a result, consumer confidence in the product they are purchasing has increased.

7.3 Grain and Graze

Overview

The Grain and Graze program was a collaborative program undertaken by Australian Wool Innovation (AWI), Grains Research and Development Corporation (GRDC), Land and Water Australia (LWA) and Meat and Livestock Australia (MLA).

Grain and Graze aimed to provide mixed farming enterprises with new, 'whole farm' knowledge, tools and capacity to adopt management changes that will lead to a 10% increase in profitability of livestock, crop, and pasture systems while maintaining, or enhancing, biodiversity and the catchment resources which sustain them. At least 6,800 farm businesses will introduce these new systems by 2008.

Mixed farm enterprises include those farmers that are in the production of sheep and/or beef cattle as well as substantial production broadacre crops, namely wheat.

Aims and Objectives

Overall the program had three main targets:

1. Build financial capital: At least 10% more profit for mixed enterprise producers.

2. Build natural capital: Better water quality and enhanced condition and diversity of plants and wildlife by producers contributing towards the achievement of catchment targets.
3. Build social capital: Increased confidence and pride among Australia's mixed enterprise producers.

The program aimed to achieve these objectives by a number of targeted projects aimed specifically at a number of regions, namely:

Northern Agricultural Region (WA);

Avon Region (WA);

Eyre Peninsula (SA);

Mallee (SA, VIC, NSW);

Corangamite/Glenelg-Hopkins (VIC);

Murrumbidgee (NSW);

Central West/Lachlan (NSW);

Border Rivers (NSW, QLD); and

Maranoa Balonne (QLD).

The national projects targeted biodiversity and productivity, feedbase management, social influences, whole farm economics and a national database of information.

Results and Outcomes

Natural Resource Management Consultants and Advanced Choice Economics were commissioned to evaluate the Grain and Graze program under a number of measures, including meeting stakeholder needs, the triple bottom line framework, sustained practice change, return on investment and program efficiency.

Meeting stakeholder needs

The evaluation concluded that Grain and Graze met the needs of stakeholder to a satisfactory standard. It also identified areas for improvement, with some stakeholder expectations differing due to information asymmetries and some natural resource management outcomes not being clearly defined. The unintended benefits of the project, however, were seen as contributing to a favourable overall assessment.

Triple Bottom Line

The evaluation concluded that the national TBL goals, objectives and targets had been substantially met during the investment period of Grain and Graze. Specifically,

The program had increased profitability for mixed enterprises by 9 per cent (just short of the target of 10 per cent), though the number of

producers experiencing these gains (1,100) was considerably short of the target (6,800).

Though results were not clear, the evaluation considered it likely that the adoption of Grain and Graze farm practices had improved water quality and the condition and diversity of plants and wildlife.

Grain and Graze had increased confidence and pride among Australia’s mixed enterprise producers — though the number of producers experiencing these outcomes was fewer than expected.

Sustained practice change

The evaluation found that a number of the key recommendations proposed by Grain and Graze had already been present in many mixed farm enterprises. As a result the Grain and Graze program achieved a further adoption of already existing practices rather the introduction and adoption of new practices.

Return on Investment

Figure 24 outlines the Return on Investment results for Grain and Graze.

Scenario	Net Present Value	Benefit Cost Ratio
Scenario 1 - Standard	\$14,878,410	1.48 : 1
Scenario 2 –Sustained	\$39,489,643	2.27 : 1
Scenario 3 – Pessimistic	\$6,831,492	1.22 : 1
Scenario 4 – Optimistic	\$63,005,273	3.02 : 1

Figure 24: Return on Investment, Grain and Graze

Figure 25 provides a more specific breakdown of the costs and benefits of Grain and Graze per each contributing RDC.

Investor	Total Investment (\$, 2007/08)	Benefit Attribution (%)	Benefit Attribution (\$, 2007/08)	BCR
Meat and Livestock Australia	\$6,059,210	34	\$15,659,003	2.58 to 1
Australian Wool Innovation	\$2,794,449	35	\$16,119,562	5.77 to 1
Grains Research and Development Corporation	\$2,668,653	19	\$5,526,707	2.07 to 1
Land and Water Australia	\$2,137,298	19	\$8,750,620	4.09 to 1

Figure 25: Return on Investment by RDC, Grain and Graze

Under the standard scenario, the program as a whole generated a positive net present value (\$14.8 million) and a large BCR (1.48 : 1). More specifically, regarding AWI's contribution to the investment in the program, they received a benefit cost ratio of 5.77 : 1, indicating a \$5.77 return on every dollar invested.

Notwithstanding the ambitious scale and complexity of the proposed program, and the prevailing adverse conditions whilst the program was enacted (a large scale drought) the report concluded that the program design, management and administration have been effectively and efficiently delivered.

7.4 Shearer and wool handling training program

Overview

Ensuring that there are adequate numbers of skilled staff in the Australian wool industry is a determining factor that ensures the long term profitability of the industry. Accomplishing this will ensure that both shearers and wool handlers have the requisite skills to serve the needs of the industry going forward.

Overall the program has a number of goals, namely:

Help the wool harvesting industry ensure the availability of competent workers through the delivery of industry relevant training programs and credible skill assessment;

Attract and retain new entrants;

Building the capacity of existing workers;

Increase profitability of woolgrowers; and

Maximise government funding and support for shearer and wool handler training.

AWI will partner with various state based vocational education and training providers to provide the required training and support to existing and new entrants to the industry. The formulation of specific and dedicated course and instructors will facilitate this.

Aims and Objectives

Increase the productivity and quality of shearers and wool handlers trained with AWI funds.

Aim to attract trading funding from other sources resulting in at least a 6 to 1 ratio of income from external sources to income from AWI.

An increase in the quality of training for existing shearers by 10% and wool handlers by 20%.

An increase in the number of novice shearers and wool handlers trained by all funded sources over three years by 15%.

For individuals who have had AWI-funded training, an improvement in work behaviours consistent with OH&S by 15%.

Overall increases in productivity to the industry.

Overall cost reductions to the industry

Decrease the AWI management component of the programs by placing the emphasis on the providers controlling their own cash flows and invoicing AWI twice/three times a year.

Results and Outcomes

AWI has committed \$800,000 to the program and has received support from the government totalling \$4.5 million for the 2009/2010 years. AWI, in partnership with the vocational education and training providers will continue to foster the development of shearers and wool handlers.

Appendix C History of the wool levy

Australian woolgrowers have had to pay a compulsory levy for wool R&D (and marketing) since 1936-37. The justification for this levy has largely remained unchanged over the past 75 years:

Market failure — due to the dispersed nature of the industry and the “broadly undifferentiated” nature of wool, it is difficult for woolgrowers “to capture significant benefit from R&D they might conduct individually for them to proceed” (Productivity Commission 2007); and

The need to overcome the problem of free-riders.

The levy in 1936-37 was six pennies a bale on all shorn wool produced in Australia and sold. In 1957, the rate of the levy was two shillings a bale for wool research and four shillings a bale for wool promotion (Commonwealth Bureau of Census and Statistics 1960).

In 1964, the Australian Government replaced the fixed unit charge levy with a levy based on a percentage of the gross sale value of wool (Commonwealth Bureau of Census and Statistics 1965). The rate of the levy was initially set at a maximum of 2 per cent. From 1964 to 2000, the rate of the levy varied from 1.875 per cent to 4 per cent (Commonwealth Bureau of Census and Statistics 1965; Senate Rural and Regional Affairs and Transport Legislation Committee 2000).

In 2000, the Australian Government changed the process of setting the wool levy rate from one of government determination to one of woolgrower determination (the current WoolPoll process). Since the first WoolPoll in 2000, the rate of the wool levy has remained at 2 per cent — as a result of the continued endorsement of woolgrowers.

The Senate Rural and Regional Affairs and Transport Legislation Committee reported in 2000 that “woolgrowers have contributed \$4.7 billion in today’s dollars for the conduct of wool R&D and promotion, with the Commonwealth contributing an additional \$2.8 billion.” Since 2000, the wool levy has generated an additional \$390 million in funding for wool R&D and marketing, with the Australian Government contributing an additional \$110 million.