Submission:
Productivity Commission Inquiry into Rural Research and Development Corporations

14 July 2010

Department of Primary Industries, Parks, Water and Environment

Tasmania
Explore the possibilities

CONTENTS

PREPARED BY

The lead agency in preparing this submission is the Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE). The following organisations were consulted, Forestry Tasmania, Private Forests Tasmania, and CRC for Forestry. However this submission is entirely the work of DPIPWE.

DPIPWE is responsible for the sustainable management and protection of Tasmania's natural and cultural assets for the benefit of Tasmanian communities and the economy. The Department's activities guide and support the use and management of Tasmania's land, water and living marine resources and protect and promote its natural, built and cultural assets. The Department is also responsible for delivering the services that support primary industry development and for the protection of the State's relative disease and pest-free status.

This submission provides commentary aligned to the many issues raised in the Productivity Commission's Issues Paper of March 2010. The main focus is on research, development and extension (RD&E) as it applies to the Tasmanian agricultural sector. Information on the Tasmanian fisheries and forestry sectors is provided where appropriate.

ACRONYMS

ACIAR	Australian Centre for International Agricultural Research
ARC	Australian Research Council
AWI	Australian Wool Innovation
CRC	Cooperative Research Centre
DAFF	Department of Agriculture, Fisheries and Forestry
DPIPWE	Department of Primary Industries, Parks, Water and Environment
FDE	Farm Dependant Economy
FRDC	Fisheries Research and Development Corporation
FWPA	Forest and Wood Practices Australia
GFP	Gross Farm Product
GPC	Government Purpose Classification
GSP	Gross State Product
HAL	Horticulture Australia Limited
MERI	Monitoring, Evaluation, Reporting and Improvement
MLA	Meat and Livestock Australia
NABRC	Northern Australian Beef Research Council
NRM	Natural Resource Management
PIMC	Primary Industries Ministerial Council
PISC	Primary Industries Standing Committee
RDC	Research and Development Corporation
RD&E	Research, Development and Extension
SARMC	Southern Australian Red Meat Council
TAFI	Tasmanian Aquaculture and Fisheries Institute
TIAR	Tasmanian Institute of Agricultural Research
UTAS	University of Tasmania

EXECUTIVE SUMMARY

- Agriculture is a significant contributor to the Tasmanian economy. In 2006-07 Gross Farm Product (GFP) was $625 million being 3.2%[1] of Gross State Product (GSP). When seafood and wine are included, the farm gate/beach value of Tasmanian produce was over $1.4 billion in 2007-2008[1]. Once packed and processed, the value nearly doubles to $2.66 billion[3]. The Farm Dependant Economy[2] (FDE the total value of agricultural contribution to the economy) of Tasmania is nearly 16 percent of GSP.
- Access to RDC funds is an important means for Tasmania to meet the cost of providing Research, Development and Extension (RD&E). The small Tasmanian economy and the diversity of the primary production carried out means that there is little investment in RD&E by the private sector due to a limited opportunity to capture the benefits of this investment.
- Resource protection, food security and sustaining rural and regional communities are valid reasons to ensure agriculture, fishing and forestry remain viable industries.
- While it is recognised that the adoption of the National RD&E Strategy will focus on projects of national importance, there will always be issues of regional importance that also require RD&E investment.
- Basing government contribution solely on the value of industry output is not inherently sound. It is difficult to accurately model long term economic and other contributions a particular industry might make. Hence it is appropriate to maintain industry diversity. Support to some industries will be maintained whilst it is also important to encourage others with greater potential for growth and productivity increases.
- The RDC model is fundamentally sound and has enabled significant investment to be made in primary industries RD&E that probably would not otherwise have occurred if producer contributions (levies) were voluntary.
- There are, however, opportunities to improve the RDC model.
- Governance of the various RDC's is presently not uniform. There are opportunities to look at the board appointment processes for RDCs and specifically whether skills-base boards are more effective and appropriate than representative-based boards.
- The focus of RD&E effort should be set by a national strategic planning process with which the RDCs are intimately involved and which sets the general direction of RDC investment.
- RDCs should be funding a balanced portfolio of investments ranging from basic research through applied research, and into development and extension. There needs to be a balance between current and future industry needs along with the inclusion of NRM implications in all production research. It is also important to adopt a whole value chain approach to rural RD&E because of the pull through influence of customers and markets.
- Consideration should be given to the effectiveness of Legislation requiring some RDCs to consult with particular peak industry groups. Investigation into more generic consultation requirements would be valuable.

[1] DPIPWE – Tasmanian Food and Beverage Industry ScoreCard, 2007-08 (Draft)

[2] Tasmanian Agricultural Productivity Group and Tasmanian Farmers and Graziers Association, The Contribution of Agriculture to the Tasmanian Economy, 2005 & 2007

- To better streamline processes and potentially decrease administration costs consideration should be given to decreasing the number of entities, research programs and funding pools, and/or greater collaboration between RDC's. Consideration should be given to the aggregation of industry RD&E across those that have a similar focus and significant stakeholder overlap – for example the meat, wool and dairy industries – as it may reduce administration and transaction costs and reduce duplication of effort.
- It is important that evaluation is undertaken both at the individual project level, across projects and across RDC's. A national approach to project evaluation methodology would be useful as would coincident collection of multiple data that can be used in evaluation of a number of projects.
- A national RD&E database would help encourage collaboration, reduce duplication and thus increase the impact of RD&E investments. Such a database would include proposed, in progress and completed projects. This could be similar to the Monitoring, Evaluation, Reporting and Improvement (MERI) system developed by the Australian Government for Natural Resource Management (NRM) programs.
- Compulsory levies ensure every state makes a monetary contribution even though research may not be conducted in that state. In this sense free riding is eliminated. However, consideration should be given to changing the RDC funding model so that the Federal Government guarantees a minimum annual levy income based on an averaging system.
- The option to set compulsory levies to zero should be removed. If a levy is set to zero because the particular industry is experiencing low returns it can be argued that this is a time when extension and development are most needed to help it develop and implement strategies that will enable producers to survive such times.
- Changing a levy can be very expensive including significant advertising and mail out campaigns articulating the various arguments. However, the trade-off is that that industry members (ie levy payers) need to be involved in the decision making process.

BACKGROUND

Tasmanian Primary Industries

Agriculture

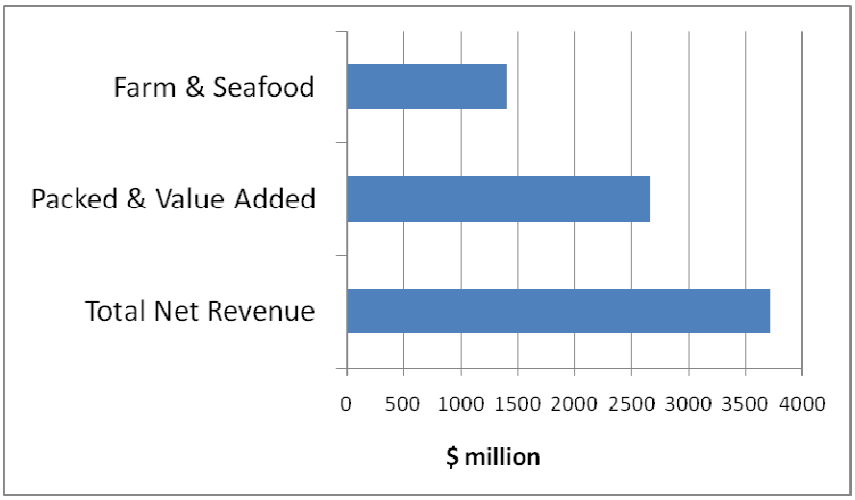
Agriculture is one of the key drivers of the Tasmanian economy along with fisheries, forestry, mining and tourism – all of which are based on natural resources.

Twenty-four percent[3] of Tasmania's land area is under agricultural production, including the red meat, wool, dairy, vegetable, poppy and perennial horticulture (pomme fruit, berries and nuts) sectors. In 2006-07[1] Gross Farm Product (GFP) was $625 million, making Tasmania Australia's smallest agricultural production state in comparative terms. However Tasmanian agriculture is a significant contributor to the State's economy with GFP being 3.2%[1] of Gross State Product (GSP) (equal largest with South Australia[4]).

As illustrated by Figure 1. Value along the chain ($ million) of Tasmanian food (2007-08)[5.] when seafood and wine are included, the farm gate/beach value of Tasmanian produce was over $1.4 billion in 2007-2008[5]. Once packed and processed, the value nearly doubles to $2.66 billion[3].

The Farm Dependant Economy[6] (the total value of agricultural contribution to the economy) of Tasmania is nearly 16 percent of GSP, which indicates agriculture is 30 percent more important to Tasmania than to the nation as a whole.

FIGURE 1. Value along the chain ($ million) of Tasmanian food (2007-08)[5].



Fisheries

Fisheries and marine farming are also important contributors to the Tasmanian economy. As an island state, fishing activity occurs around the whole of the Tasmanian coast line with marine farming being undertaken at specific locations on the west, north west, east and south east coasts.

Commercial fisheries comprise of the harvesting of abalone, southern rock lobster, scallops and a range of scalefish species from within state waters. Atlantic salmon, Pacific oysters, blue mussels and abalone are the

[3] ABS, 7123.6.55.001
[4] ABS, 7123.7.55.001; 7123.4.55.001; 07123.5.55.001; 7123.1.55.001; 7123.3.55.001; 7123.5.55.001.
[5] DPIPWE; Tasmanian Food and Beverage Industry ScoreCard, 2007-08 (Draft)
[6] Tasmanian Agricultural Productivity Group and Tasmanian Farmers and Graziers Association; The Contribution of Agriculture to the Tasmanian Economy, 2005 & 2007

species marine farmed. The combined beach price value for Tasmanian commercial fisheries in 2007/08 was $172.1m and for the Tasmanian marine farming industry, $315.1 m.[7]

Forestry

"The majority of Tasmania's native forest is managed as reserves or is unavailable for commercial use by forestry. At 46 percent, Tasmania has more native forest cover by percentage of total area than any other state in Australia. Tasmania's reserved areas include around one million hectares of old growth forests, which is about 27 per cent of Australia's total old growth forest estate.

"In 2005/06 there were 147 personnel engaged in forest-related research at a cost of $12.4 million. This research expenditure is spread across government agencies, the forest industry and academia. This capability is considerably enhanced by the location of the CRC for Forestry within Tasmania which adds considerable opportunities to the industry.

"The CRC for Forestry's 2008 Tasmanian Forest Industry Survey 2005-2006, estimates that the forest industry directly employs more than 6,000 people and over 10,000 across the supply and value chains. The forest industry is adding value to a diverse range of products. It contributes up to $1.6 billion in total expenditure to Tasmania's annual economy. Of this growers and processors generate $940 million to $1.02 billion while contractors, consultants and nurseries generate $480– $580 million. In addition to these expenditures, the annual demand for firewood is also estimated to be around 600,000 dry tonnes, with a value of $60 million; the special species timber and woodcraft sector generate around $70 million annually in sales of furniture and craft items through galleries and associated retail outlets; and a large proportion of the $ 3 million annual honey production is reliant on access to native forest resources.

"The value of forest products makes forestry and associated processing Tasmania's second largest economic sector in terms of both turnover and value adding. Wood, pulp and paper product manufacturing account for $ 1 billion in turnover.

"Tourism is also an important benefactor from access to forests and forest facilities. However it is difficult to quantify the direct economic benefits." [8]

Tasmanian RD&E Overview

Public Sector

Access to RDC funds is an important means for Tasmania to meet the cost of providing RD&E services. The positive working relationship between the State and RDCs ensures a coordinated investment and complementary effort.

Much of Tasmania's investment in agricultural and fisheries marine farming research is directed towards improved on-farm productivity and sustainable fisheries and marine farming management which subsequently generates broader public good through economic and resource management benefits. This is important in Tasmania where the maintenance of regional economies is critical to our relatively small diversified economy and our regionally dispersed population.

Since the late 1990's the Tasmanian Government has increasingly targeted its RD&E investment into partnerships with the University of Tasmania (UTAS) forming the Tasmanian Institute of Agricultural Research (TIAR) and the Tasmanian Aquaculture and Fisheries Institute (TAFI). Importantly RD&E is aggregated into dedicated organisations that have RD&E as their core business. Through being part of the

[7] DPIPWE; Tasmanian Seafood ScoreCard 2007-08

[8] Forest and Forestry Industry Council of Tasmania; The New Forest Industry Plan: A Fresh Approach, 2010

University, these Institutes have also been able to leverage significant research funding not available to government agencies. The success of this model is dependent upon good communication and interaction between the Institutes and the regulatory and policy arms of government. This ensures that the appropriate technical input to policy is received and the RD&E outputs from the Institutes meet Government and industry objectives.

The State and University – through the TIAR and TAFI partnership model – is able to fund a core group of professionals with expertise in RD&E. RDC funding allows support staff to be employed for specific projects and the project-specific operational expenses to be met. For example, the Red Meat Targets, SheepConnect, TopCrop, fisheries assessment programs and improved marine farming environmental management and fish health projects have all been delivered in Tasmania under this arrangement.

RD&E related investment by the State

Agriculture

As part of the Joint Venture Agreement between the State Government and the UTAS, DPIPWE provides an indexed core grant for funding TIAR. Additional funding is provided to TIAR from the DPIPWE via other sources. The core grant for 2009-2010 was $5.98 million (inclusive of a special grant of $1.5million). The base funding for TIAR for 2010-2011 will be $4.86 million.

DPIPWE also provides support to rural communities through a number of agency programs. Table 1 provides a breakdown of DPIPWE expenditure in 2007-2008 under relevant Government Purpose Classifications (GPC) as reported to the Commonwealth Grants Commission in 2010. Table 2 provides a breakdown of external funding provided to TIAR in the calendar years of 2008 and 2009.

Table 1. DPIPWE expenditure by Government Purpose Classification (GPC) 1010 FOR 2007-2008

GPD Description for classification 1010 for 2007-08[9]	$	TOTAL $
Agricultural water resources management		$13,740,667
Agricultural industry development services	$42,012	
Conservation of Tasmania's flora and fauna	$2,115,976	
Water resource management	$5,539,144	
Water resource assessment	$3,438,712	
Policy advice	$546,851	
Biosecurity	$363,374	
Construction of irrigation schemes: Loan	$1,194,598	
Agricultural research centres	$500,000	
Agricultural support schemes		$3,281,349
Agricultural industry development services	$3,281,349	
Agricultural research and extension services		$24,965,882
Agricultural industry development services (inc TIAR grant of $5,495,400)	$9,045,116	
Biosecurity	$9,648,329	
Product integrity	$4,349,437	
Grant to TIAR	$1,923,000	
Agricultural land management		$14,300,692
Land management services	$1,951,130	
Conservation of Tasmania's flora and fauna	$12,349,562	
		$56,288,590

[9] Information supplied by DPIPWE to the Commonwealth Grants Commission in 2010

Table 2. Funding from external sources to the Tasmanian Institute of Agricultural Research (TIAR) 2008-2009[10]

TIAR - Funding Provider	Project	$ 2008	$ 2009
Australian Contracts	Various	238,132	404,117
Australian Donations Bequests and Foundations	Various	28,000	34,079
Australian Grants	Various	93,560	238,302
Australian Syndicated research and development	Various		135,031
Australian Antarctic Division	Various	22,500	
ACIAR	Various	254,966	218,346
ARC Discovery	Various	45,417	40,810
ARC - Linkage	Various	408,304	352,483
Australian Wool Innovation	Various	145,000	81,000
Commonwealth Government	Various	936,469	421,949
Dairy Australia	Various	520,799	460,064
Fisheries R&D Corporations		9,942	
DAFF	Various		182,530
Grains R & D Corporations	Various	823,900	62,659
Grape and Wine R&D Corporations	Various	368,271	94,626
HAL	Various	2,412,312	1,207,041
International funding	Various	87,589	149,411
Local government			20,750
MLA		249,460	406,970
Open tenders			364,468
Rural Industries R&D		76,716	10,200
Tasmania Government (DPIPWE)		6,109,653	6,940,535

Fisheries and Aquaculture

The State Government has for the past four years agreed to match industry contributions to the Fisheries Research and Development Corporation (FRDC) up to a ceiling of $350,000 per annum. Table 3 provides the breakdown of State Government matching contributions for 2009/10 for the various fisheries.

As part of the Joint Venture Agreement between the State Government and the UTAS, DPIPWE provides an indexed core grant for funding TAFI. Additional funding is provided to TAFI from the DPIPWE via other sources. In 2009-10 DPIPWE funding for TAFI amounted to $3.138 million made up of a core grant of $2.7 million and $0.438 million from other sources.

[10] Note: TIAR financial year is based on a January – December calendar year.

Table 3: State Government Contributions to FRDC in 2009/2010

Salmon	$140,000
Oysters	$16,000
Rock Lobster	$76,911
Abalone	$110,879
Fishing Licence (Personal)	$6,210

Forestry

Forestry Tasmania has the statutory responsibility for the management of 1.5 million hectares of State forest land. It is a significant research funder and provider in its own right, managing a $3 to 4 million annual internal program, with a net cost to the organisation of around $2 to 3 million. Forestry Tasmania contributes levies to Forest and Wood Products Australia (FWPA) of around $150-200,000 annually, and also bids for research projects. Forestry Tasmania currently has with around five FWPA funded projects that it is either leading or contributing to with other researchers across Australia.

RD&E investment by the private sector

The small Tasmanian economy and the diversity of the primary production carried out means that there is little investment in RD&E by the private sector due to a limited opportunity to capture the benefits of this investment. Exceptions are the vertically integrated pharmaceutical poppy industry – centered on Tasmania which is largely owned by multinational companies who tend to fund their own research and provide their own extension service to growers – and the salmonid marine farming industry.

Private investors in RD&E are generally driven by the commercial markets. For example, in the pasture and crop seed industry, commercial companies invest in developing lines with potentially high volumes sales, with relatively small agro-climatic areas (much of Tasmania) receiving little investment. Historically filling such regionally specific research gaps necessitated investment by State agencies often with little RDC support because the issue is important in the Tasmanian context, but of relatively low national importance.

Consistent with other states, the agribusiness and rural services sector in Tasmania (including agricultural consultants and rural supply merchants) have increasingly expanded their activity in RD&E, coinciding with the outsourcing of extension services traditionally undertaken by State Government, for example district agronomic support. In the case of rural supply merchants, they tend to be part of a larger national network or chain where RD&E is co-ordinated at a corporate level in support of their retail businesses. Although delivery of industry development services to farmers by the private sector should be encouraged, there is the potential to confound science with sales targets and farmers are keen to source unbiased advice and recommendations. Private sector RD&E is also less likely to address broader issues such as climate change, biosecurity and natural resource management.

RD&E investment by individual producers

Tasmanian agriculture is primarily managed by small-medium family businesses. These businesses largely rely on the government co-contribution of funding to RDCs as they have limited ability (time, expertise and funds) to increase their own RD&E effort on top of what they are already contributing through their industry levies. Some farmers will invest individually in low level on-farm development activities such as trying new crops or management systems. However, these are generally focused on shorter term issues for which the basic and applied science has been done through other processes. The communication and extension associated with these types of projects tends to focus on farmer to farmer and small group

dispersal with limited interpretation to the wider industry – unless it is part of a larger Government-backed extension effort.

The same essentially applies to the majority of commercial fishers and shellfish marine farmers. Individual salmon farming companies are large vertically integrated businesses and accordingly invest in R&D specific to their own production needs.

National RD&E Framework

One of the driving forces behind development of the National Primary Industries RD&E Framework (through the R&D subcommittee of the Primary Industries Standing Committee) was declining trends in state government resources available for RD&E. The agreement allows the states to clearly articulate the level of RD&E commitment they can make to each industry on the expectation that outputs are shared without prejudice. A small state such as Tasmania can therefore participate at a level commensurate with its resources without the potential for the State being unfairly tagged as a "free rider" or its industries missing out because of the inability to provide the necessary services.

Although there is considerable goodwill between the states to make a National Primary Industries RD&E Framework successful, the process of collecting and assessing ideas must be such that it encourages creativity and originality of thought. There is a potential that with a reduced competition for industry funding, 'out of the box' ideas may be lost. There is also a potential loss of regional social benefit. Extension, evaluation and monitoring processes will be critical in ensuring this new model works for all stakeholders.

Whilst it is recognised that the adoption of the National Primary Industry RD&E Strategy will focus on projects of national importance, there will always be issues of regional importance that require RD&E investment. In future a more encompassing solution may be to provide a small RDC investment in each state for projects of state significance (that could be determined competitively within each state) which would leverage state investment and allow regional differences to be addressed.

RD&E should not be seen as three separate silos but rather as a continuum with the emphasis on the disciplines changing as the problem or issue is addressed. Extension leading to significant industry practice change does not happen quickly so there is a need for funding and resources to continue to be dedicated to the extension-phase long after a specific project is completed. This may mean there is a case for the RDC's and the states jointly funding a generic extension program that focuses on a number of issues at the completion of the RD&E phase. This would be similar to the More Beef from Pastures program funded by MLA and the SheepConnect program funded by AWI.

It is important that the extension-phase is well linked with the research and development phases up-front and not just at the end of the process. It is well documented that the extent and rate of farmer uptake is a key factor in influencing productivity gains[11]. Undertaking a participative process for research, development and extension encourages acceptance by researchers of landholder/fisher/marine farmer perspectives and knowledge, hopefully resulting in innovations and management changes that are more in line with producers' needs and practices[12].

[11] Mallawaarachchi et al. Promoting productivity in the agriculture and food sector value chain: issues for RD&E investment. Australian Government, 2009

[12] Marsh, S. Adopting innovations in agricultural industries. ABARE Outlook, 2010

RATIONALES FOR GOVERNMENT FUNDING SUPPORT

Tasmania

The primary industry sector makes a significant contribution to the Tasmania's economy. For example, Tasmania is a net exporter of food with 74 % of food production destined for interstate and overseas markets. The resulting Trade income in 2007-08 exceeds $1.95 billion, underpinning a significant portion of the Tasmanian economy[3].

The vast majority (91%) of Tasmania's food trade revenue is generated by just ten categories - beef, confectionery, salmon, potatoes, dairy, beer, lobster and abalone. All the remaining other foods represent some 9% of trade revenue. Subsequently, a downturn in any of these 10 key industries due to external factors could have a significant effect not only on that industry, but on the economy as a whole. It is therefore critical that these industries remain productive and economically sustainable through the application of RD&E.

Tasmania also has a number of branded products that use the unique Tasmanian environment as a point of differentiation. These products do not generally receive a large premium relative to their commodity counterparts but the branding does ensure preferential market access.

In this context it is a long-term economic imperative for Government to ensure the State's natural resources are used and managed sustainably for future generations.

The spillover benefits for the Tasmanian community are important when assessing the type and level of public funding allocated to an industry or project. A key example of this is the increase in value along the chain of Tasmanian food as demonstrated in Figure 1.

Why public funding?

There are a number of factors in play that provide a strong case for government support in rural RD&E. Australian primary industries are innovative, consistently outperforming most other sectors of the in total factor productivity growth, and domestic and rural RD&E is a major driver of this performance[13]. Agriculture's ability to remain competitive has largely been due to increasing production efficiencies and outputs through investing in and adopting research outputs. "Averaged over the past 20 years, for every $1 that the Australian Government has contributed, industry has contributed $1.50[7]".

Resource protection, food security and sustaining rural and regional communities are valid reasons to ensure agriculture, fishing and forestry remain viable industries. It is not a question of if the investment of public funds into RD&E is justifiable to support these industries rather it is a question of quantum. The time to argue for little or no public investment is when the returns are so high that the necessary RD&E can be well afforded by the industry and that the social benefits are small relative to the private industry benefits.

The sweet spot for public investment is associated with the quantum of investment, which from a purely economic perspective is the level of investment at which the benefit is less than the investment. This is very difficult to quantify.

Public funding allows greater input and control over key research priorities and the potential for collaboration across industries/states and therefore an increase in the 'spillover' that private research investment may not achieve.

[13] **Council of Rural Research and Development Corporations Chairs.** *Impact of Investment in Research and Development by the Rural Research and Development Corporations - Year 2 Results.* s.l. : Rural RD&E Corporations, 2010.

With investment in RD&E, there will always be a ripple effect up and down the supply chain. Investment in market research may lead to increased production which has positive effects on producers. Similarly, research at the farm level that leads to products better meeting market specifications will have a positive effect at the retail and customer nodes. It is important to remember that there is a definite chain of inextricably linked components and that RD&E investment at any one point generally leads to a reaction at another.

It is very difficult to define the time period over which to depreciate the RD&E investment. Generally RD&E is additive in that the results of today become the starting point of tomorrow's RD&E. Based on this, tomorrow's and the next day's RD&E benefits would not have accrued without those of today. This is not much comfort for economists determining RD&E investment strategies but one must make these decisions with the realisation that there will be imperfect adoption and there will be a long lag between discovery and implementation.

"Majority of evaluations undertaken by RDCs were not able to quantify the environmental and social benefits in economic returns[7]".

Private Investment

There are many smaller operators in primary industry sectors making it difficult for significant private investment in RD&E to generate large-scale benefits. In Tasmania there is much public and private effort going into adding value throughout the supply chain, including promoting agribusiness innovation, a greater focus on high-end foods, increased product quality and niche products. However Tasmanian primary industries are still largely price taker commodity based industries hence it has a limited ability to pass on increased costs of production.

Private investment in RD&E will only occur if there is a good prospect of a financial return to the investment. Consequently withdrawal of public funding will not automatically lead to private investment filling the void. The economic condition of the sector at any particular time will have a significant bearing on the amount of private funding. For example, in depressed economic conditions, the funds are often not available for RD&E and this may be the time that it is needed the most and can be of greatest benefit. Aligning RD&E funding to industry prosperity will result in its availability being uncertain and fluctuating between years, making it difficult to fund longer term projects.

There will always be room for private investment in RD&E because the demand for outputs is far from saturated. The challenge for industry and government investors in RD&E is to ensure they encourage collaboration with private investors as well as to refrain from competitively investing in similar areas. As previously mentioned, private industry members may not fund RD&E unless they can see direct benefits in a timely manner. This may result in different research being done than that with public money (which may include more 'out-of-the-box' ideas) and perhaps research with much lesser public good and spillover benefits.

A relevant Tasmanian example is the withdrawal of direct Government investment in district extension services and the significant time taken for the private sector to respond. Even then the response was not a service replacement but rather one largely based on product sales coupled with secondary extension and or consultancy services.

Maintaining scientific expertise

There is a considerable time lag between someone deciding to train as a scientist and then making a productive contribution. Scientists making this journey benefit considerably from peer mentoring. Unless Government and industry commit to supporting development and retention of core primary industries RD&E skills and facilities, scientists are unlikely to be retained by the private sector in a critical mass

necessary to support industry growth and be responsive to biosecurity issues, market demands and unforeseen impediments to production systems such as climate change.

Whilst many researchers are only on short-term tenure related to project length, it is reasonable to assume that under a government funding model, their tenure is more secure than if relying solely on private funding alone. The loss of researchers not only results in a loss of skills and knowledge, but also the capability for a timely response to critical issues that may affect the survival of an industry. RDC sponsorship of undergraduate and post graduate training assists in maintaining the pool of locally skilled scientists. This is an important contribution and consideration should be given to partnering with universities and state agencies to fund and support more students.

The Australian environment poses unique challenges for agricultural, fisheries and marine farming, so there are limited overseas developed technologies that can be directly transplanted to the Australian sectors. Local scientists who understand Australian primary industries systems are necessary to interpret and adapt overseas technologies to suit the local environment. It is however recognised that we operate in a global environment and thus our scientists should be encouraged to form international collaborations in order to tackle issues of universal applicability such as mapping the bovine genome.

RD&E investment issues

Extension services are vital. Primary industries research and development needs to be industry outcome focused. It is critical to remember that the results are actually delivered by farmers and industry. Therefore, there needs to be adequate investment in extension to facilitate the delivery of R&D outcomes.

The long lags before benefit realisation (an adoption issue) may be shortened through a better relationship and increased mutual understanding between researchers, funders, customers and farmers. If the researcher has an understanding of the barriers to adoption, then the output can be better targeted to the producer's needs. Likewise, if the producer has a better understanding of the consumer's requirements, then they may be more likely to adopt practices and perhaps at a quicker rate. However, it must be remembered that adoption by a producer is predicated on their being a clear benefit to their business.

The focus of RDCs should remain on driving and developing primary industries sectors and limit their investment in basic research. RDCs should be funding a balanced portfolio of investments ranging from basic research through applied research, and into development and extension.

When investing in RD&E it is difficult to quantify and separate the public and private component of the benefits derived from the investment and to determine the time period over which the RD&E will generate a return on the initial investment. RD&E investment in production often leads to private sector investment in post-gate/beach RD&E associated with product development and marketing, thereby positively supporting community and regional development.

There is a risk of using government RD&E funding to drive specific political outcomes. But this risk can be managed by ensuring wide stakeholder consultation is engaged to set and review strategic RD&E directions. Such consultation is needed as producers tend to think at the shorter term operational level where as research scientists often work at the more conceptual level. Extension specialists tend to walk the middle ground so there is a definite role for them in strategic RD&E planning. It is recognised that wide stakeholder consultation is currently built into some processes, for example, Fisheries Research Advisory Boards that comprise of representatives of industry, government and research providers to determine and provide advice on strategic directions of fisheries and marine farming RD&E.

Levies

Increasing levy payments is always a contentious issue with producers although the levy is a very small proportion of the value of the product they produce and there is no evidence that it has an effect on the profitability of enterprises. Probably only around 30% of producers make direct use of RD&E outputs at the

time they are new. Over time these outputs diffuse throughout the population and become accepted but by this time the link with the initial provider (RD&E funder) of the output has generally been lost or taken by an intermediary. As a consequence many producers would not be willing to increase the levies they pay in response to a reduction in government contributions. It is difficult to devise a means that would mitigate this behavior.

International

Maintaining a watching brief on international RD&E activities is vitally important for local industries to remain competitive.

One could argue that all countries free ride on each other with regard to scientific discovery. In many ways this is inherent in the scientific ethos based on shared knowledge through publication. Collaboration between countries is very important and should be encouraged to enable significant high cost projects, such as discovering the bovine genome, to be collectively affordable.

However, research results developed overseas are rarely directly transferrable to Australia without modification or at least verification. This implies that investment by overseas countries in specific subjects should not automatically preclude Australia from investing in the same disciplines. Australia must remain internationally competitive as much of our agricultural production is destined for international markets. Local RD&E must therefore ensure our primary industries maintain their competitive advantage.

IS THE RDC MODEL FUNDAMENTALLY SOUND?

It is the view of DPIPWE that the RDC model is fundamentally sound and has enabled significant investment to be made in primary industries RD&E that may not otherwise have if producer contributions (levies) were voluntary.

From the perspective of a small state, the strengths of the current RDC model are seen as follows:

- Federal Government co-contribution leveraged on producer contributions thereby ensuring a degree of public good investment;
- Ability to partner with state governments and the higher education sector institutions to leverage additional investment;
- Stakeholder governance and strategic input;
- Compulsory industry contributions via levies thereby guaranteeing resources; and
- Spread of research efforts (RDC's) across key commodities, industries and issues (e.g. NRM).

The RDC model could, however, be improved. Possible improvements are addressed in the next section of this document.

IMPROVING THE RDC MODEL

Ways to enhance governance arrangements

One deficiency is that the governance of the various RDC's is not via a uniform model. The RDC's are significant businesses. Their governance should be best practice to minimise the chance of factionalism. A move to skills-based boards is supported as they are more effective and appropriate than representative-based boards.

Popularly elected boards have an increased danger of coming on with an agenda. Sound governance of any organisation includes clear policy on the declaration of conflicts of interest and the way in which these are handled. MLA is governed by a skills-based board and is an example of an RDC which seems to work well.

RDC Boards have a governance rather than advisory role – hence technical primary industries skills or factional stakeholder representation should not be the criteria by which board members are appointed. Management skills should therefore be the major requirement as defined by a set of selection criteria. Representative board members by definition have to portray and champion the positions of the group they represent which can lead to dissatisfaction along with inconsistent and highly variable strategic directions. MLA and AWI are examples of these contrasting philosophies of board member appointments.

In rewarding good governance (or responding to bad governance) of RDC boards, parameters need to be set to measure what good governance is. Such parameters should include positive project evaluations, low cost administration and the level of industry support. The RDCs should be benchmarked regularly against these parameters.

A requirement for a periodic external review of the statutory corporations – as per the Industry-owned companies (IOCs) – would provide valuable feedback to the board, the Australian government and stakeholders on its performance, and would be a positive initiative.

Whether or not RDC governance would be simplified if financial contributions from industry and government were managed separately is difficult to ascertain. The separation of contributions could result in increased administration costs that could outweigh any benefits of any simplified governance. All money will still need to be accounted for and managed to ensure it meets both industry and government priorities.

The current governance regime provides a critical mass, economies in administration and the ability for integrated programs that may not be available of the two funding streams were managed under separate governance arrangements.

National Priorities

RD&E Framework

The newly emerging National RD&E Framework is, for the first time, ensuring a truly national approach to setting and delivering on industry strategic directions. Although the Framework is still in its formative stage, it offers the opportunity to be strategically focused at industry and regional levels along with the ability to more effectively deploy available resources with sufficient critical mass.

Until the National RD&E Framework was developed, cooperation between states and institutions was voluntary and probably largely driven by personal relationships. The CRC system aggregated agencies and individuals to develop bids and component projects but a small state such as Tasmania has limited resources and thus opportunities to take major roles in CRC's – except for, as previously noted, in forestry.

The National RD&E Framework should encourage dialogue and collaboration to a level previously not seen in Australia. The implementation plans will ensure small states such as Tasmania can play an active role in program development and oversight without the need for being a major contributor. The red meat industry has developed stakeholder groups such as Southern Australian Red Meat Council (SARMC) and Northern Australian Beef Research Council (NABRC) as well as the co-investment committee that should (when coupled with the roles of the peak industry councils) ensure the model is functional and that it delivers the RD&E outputs.

The inclusive process of developing national RD&E strategic priorities has given the RDC's a clear stakeholder approved mandate for priority RD&E investment. This potentially has taken the onus away from RDC's to unilaterally develop investment priorities while at the same time has increased their accountability to their stakeholders. It has also sent a clear message to peak councils (e.g. Cattle Council, Sheepmeat Council, Grains Council) as to RD&E priorities that may not necessarily reflect their particular political priorities.

Under the current arrangements RDC's receive funding applications from a wide range of organisations addressing a diversity of issues. Time and resources are required to respond to these. The national approach should reduce the number of ad hoc applications thereby allowing the RDC's more time to devote to agreed strategic directions.

A national RD&E database would help encourage collaboration, reduce duplication and thus increase the impact of RD&E investments. Such a database would include proposed, in progress and completed projects. This could be similar to the Monitoring, Evaluation, Reporting and Improvement (MERI) system developed by the Australian Government for natural resource management (NRM) programs.

Presumably by collating such data, a base for calculating outcome from the investment, both private (through levies) and public could be developed. However, when developing such a database need to ensure that the resources and effort required to assemble the information do not outweigh any benefit. Such a database would also need to be widely accessible, user friendly and easily interrogated.

Some practical impacts of the national and rural research priorities include an increased focus of RDCs on developing and implementing national approaches across traditionally state issues such as extension program development, sharing resources, program evaluation and intellectual property. There has also been increased dialogue between state co-investors in RD&E to ensure complementarities. Some RDC's have increased their emphasis on ensuring industry has provided support to their strategic and operational plans.

The national primary industries priorities have been developed and agreed to by a diversity of industry stakeholders including state and federal governments. State governments have agreed to the national industry plans through the PISC and PIMC processes. Governments have positively recognized the plans developed collegiately by industry stakeholders, including Government as representing the wider community as investors.

The RDC's are accountable to their stakeholders via their boards, peak councils and the Australian Government as an investor. These levels of accountability and consultation should minimize any tension between the outcomes required by Government and those delivered by the RDC's.

There is good synergy between the stated Federal Government research priorities and their primary industries research and development priorities. The RD&E priorities developed by individual rural industries align well with the priorities of the Australian Government. Issues may arise due to producers being focused on the near future whereas government is focused on the longer term, so a good balance of both outlooks is required. It is vital that strategic plans continue to be developed as a collegiate process with validation by industry players.

However one area of potential uncertainty is following the demise of Land and Water Australia how overarching or cross-sector issues like NRM – where for example, RD&E investment in sound environmental management has important public good outcomes – are accommodated in the National RD&E Framework. Greater clarity may be required in the Framework as to how it links with for example, the Caring for our Country Program or National Collaborative Research Infrastructure Strategy (NCRIS) and its Terrestrial Ecosystem Research Network (TERN) and Integrated Marine Observing System (IMOS) initiatives.

Approach to RD&E

The focus of RD&E effort should be set by the National Primary Industry RD&E Framework and through a strategic planning process within the RDC, thoroughly checked by industry feed-back and validation and regular review.

The current CRC model is very similar to the recently supported National RD&E Policy as they both have co-operation, accumulation of critical resource mass and a strategic national focus as their core values. The

major difference between the two approaches is that the CRC's have a finite life whereas the national policy is seen as enduring.

It is important to adopt a whole value chain approach to primary industries RD&E because of the pull through influence of customers and markets. Successful marketing to maintain market share and/or price of products is fundamental to the survival of many of our rural industries. There is a direct, though often time lagged, relationship between market signals and on-farm production.

There are opportunities for state agencies and RDC's to work more closely with primary industries consultants to provide individualised technology transfer and capacity building services to producers. In such a model RDC's and state agencies could wholesale new technologies to private sector providers either free or for a fee. The RDC's and state agencies complementary role could be one of creating and stimulating general awareness and thus priming the potential audience for interacting with consultants. A degree of effort will be required to demonstrate to producers the potential value of a relationship with such a professional.

Industry Consultation

A diversity of industry stakeholders currently have the opportunity to contribute to formulation and review of strategic and operating plans for RD&E. This should be maintained.

Consideration should be given to the effectiveness of legislation requiring some RDCs to consult with particular peak industry groups. Investigation into more generic consultation requirements would be valuable. Peak industry groups tend to be focused on the political dimension rather than the technical. Knowledge of both dimensions is important but the focus of RDC's is RD&E so the consultation process should encompass all groups able to make informed contributions regarding RD&E.

For example, the peak industry groups of the red meat industry are the Cattle Council and Sheepmeat Council. Certainly it is worth including these organisations in the consultation process but they should not necessarily be given the final sign off responsibility. It may be that in the red meat industry sign off is more appropriate with SARMC and NABRC which have a combination of state agency and farm practitioner representatives and thus is more focused on RD&E issues.

Increasing administrative efficiency

Consideration should be given to the aggregation of industry RD&E across those that have a similar focus and significant stakeholder overlap – such as meat (MLA), wool (AWI) and dairy (Dairy Australia) industries – as it may reduce administration and transaction costs. Similarly, on a geographic basis dairy and southern beef and lamb all have natural synergies that could facilitate an aggregation.

Aggregation of marketing and promotion programs may also be an option; however, careful management would be required to ensure that one industry product is not promoted more favorably and potentially to the detriment of others. There may also be opportunities for the sharing of skills in the information technology and corporate services areas of RDCs.

To better streamline processes, reduce complexity and timeframes, and potentially decrease administration costs consideration should be given to decreasing the number of entities, research programs and funding pools, and/or ensuring greater collaboration between RDC's. It could include for example, unifying RDC application processes and paperwork for projects funded by more than one RDC, including mutual recognition of reports produced.

More effective coordination and collaboration

There may be opportunities for additional collaboration and better coordination between industry RDC to address duplication, overlaps and gaps in research. For example livestock, meat, wool and dairy sectors all

use pastures as a feed base, yet fund their own "pastures research" through different RDC's. There is merit in examining the potential to aggregate or even amalgamate meat, wool and dairy into one "livestock industries" research centre, which as noted previously, might also achieve administrative efficiency gains. Another example is funding for NRM and production RD&E which logically should not be strictly managed in separate silos as these disciplines need to work together to get the best results for both.

It is noted however that collaboration between RDCs as they currently operate could have potential issues with Intellectual Property, and there may also be an element of 'patch protection'. Another issue is 'kudos' for specific research areas and the competitive nature of grant allocation could work against collaboration. These issues would need further consideration.

The National RD&E Framework should reduce duplication and provide a critical mass of resources. It should be very effective in achieving economies of scale and in fostering improved collaboration, particularly with national issues. Individual jurisdictions will still need to maintain capacity in order to address locally important issues and/or statutory responsibilities that have low national priority.

Although the PIMC principles dictate a significant commitment and level of cooperation the outcome will largely depend upon maintaining trust between the parties. A significant determinant of trust will be continued transparent dialogue and mutual recognition of each state's situation and the contributions it is able to make.

With appropriate dialogue the national framework should lead to early recognition of changes in the rural sector and enable a collegiate response to be made. It may even enable changes and emerging issues to be identified and strategies developed to address them in a timelier manner.

More robust ex post project evaluation

With increased emphasis on national RD&E it is logical that evaluation also be tackled on a national basis. Ultimately a national framework for project evaluation could be developed that would ensure uniformity in approach and establishment of a national critical mass of project evaluation expertise.

The current and proposed national RD&E models assume investment is required within those industry sectors represented by an RDC and with a consequential legislated levy collection system. There is currently no investment analysis undertaken to determine the relative outcomes of investing in various industries across the primary industries sectors. If undertaken, such an analysis would need to be carefully interpreted to ensure long term national benefits were not lost in favor of shorter term gains.

It is important that evaluation is undertaken both at the individual project level, across projects and across RDC's. A national approach to project evaluation methodology would be useful as would coincident collection of multiple data that can be used in evaluation of a number of projects. It would also allow a longitudinal comparison of the evaluations across years as well as within years. It would also provide a basis to allow for random audits of methodologies across projects.

Due to Tasmania's comparatively small industry, only a few producers are represented in project evaluation and other surveys. It is therefore difficult to use the data to make specific conclusions about the industry in this state. It would be beneficial from a state planning and evaluation perspective for more robust data describing the state situation to be available.

For example, at the project level, evaluation of the lamb program run by MLA has shown a very significant positive return on investment. Intuitively there has been a major change in the lamb production system observed over the life of this project hence the evaluation result is not unexpected but attribution cannot always be definitive.

Evaluation is an inexact and often difficult science especially when largely done post the program using the counterfactual model. Project evaluation will never be perfect so a practical balance must be struck between the resources dedicated to evaluation and those dedicated to the project.

In the future, evaluation should be regarded as an integral component of projects because it is only through robust data that investors (community and industry stakeholders) can be convinced to continue to invest. It should therefore be undertaken as the project progresses and again sometime after the project has formally concluded allowing sufficient time for continued adoption. A follow-up of initial project evaluations will determine if expected outcomes have been realized. This will essentially be an 'evaluation of the evaluation' and also see if there are other factors that could not be anticipated that have an effect on the final numbers.

Assessment and quantification of the impacts of projects at all levels (farm/fishing/forestry enterprise, community and general environment) is important. Evaluation outcomes should be reality tested with stakeholders to ensure that the right outcomes are being evaluated and that the numbers 'add up'.

Most projects require a joint investment to get off the ground. RDCs and state agencies are essentially partners to run and fund specific projects – hence evaluation should take account of the total investment. In such cases it is not possible to allocate outcomes to the investment source.

FUNDING LEVEL ISSUES

There are a number of principles and benchmarks that could be used to assess appropriate funding amounts and balance of private and public funding. Market failure could be used as a measure for evaluating investment by government. Community and social benefits, including food security, sustainable management of natural resources and adaptation to climate change are all key areas that need consideration when assessing funding of RD&E. There needs to be a balance in funding between current and future industry needs along with the inclusion of broader implications such as NRM in all production research.

Overcoming the limitations of variable income

The building up of surpluses by some RDCs may reflect their attitude to risk particularly that associated with variable levy income. The problem of variable income arises from annual fluctuations in levies which are tied to commodity production levels and price. This impacts on revenue forecasting, strategic planning, expenditure levels and hence creates the need to budget for surpluses and maintain cash reserves.

At times of industry down-turn, which is inevitable in primary industries, reserves allow RDCs to continue long-term programs which may be needed to assist in industry recovery. Accumulating reserves also provides flexibility to overcome seasonal fluctuations in levies as well as to respond to unplanned or emerging issues. For example in the case of the wool industry, the previously unforeseen need to urgently develop alternatives to the practice of mulesing.

An additional consideration is the need for contingency funds, or similar, to support unpredictable and unforeseen activities such as responding to exotic pests and diseases or market access issues. A contingency approach also provides operational flexibility for times when there may not be the research skills-base immediately available to develop and deliver projects – allowing the RDC to move to implement other priorities where research capacity does exist.

However, the need to manage for reserves and contingencies seems to reflect that reform to the funding model is warranted.

For example, consideration should be given to changing the RDC funding model so that the Federal Government guarantees a minimum annual levy income based on an averaging system, similar to primary producer tax averaging arrangements. If the levy income was more predicable there would be little need for contingencies with the benefit of effectively releasing more funds for investment in RD&E.

The allocation of public funding across RDCs

Basing government contribution solely on the value of industry output is not inherently sound. It is difficult to accurately model long term economic and other contributions a particular industry might make. Hence it is appropriate to maintain industry diversity. Support to some industries will be maintained whilst it is also important to encourage others with greater potential for growth and productivity increases.

The Australian Government's funding allocations across RDCs, including the question of which RDC's to support, should be based on an assessment of the real contribution each RDC makes to the future value and the longer term competitive prospects of particular industries against triple-bottom-line outcomes, including contribution to the Australian (and regional) economy, food security, lifestyle, and sustainable natural resource management.

Continued general appropriations to RIRDC would allow it to focus on the emerging and small potentially sunrise industries. This is very important as a national risk management strategy should one or more of our mainstream core primary industries fall victim of some biological, environmental or marketing force that renders it obsolete. Whilst high risk research is essential, a limited percentage of any RDC fund should only be allocated to this at any one time.

Improving the levy arrangements

Compulsory levies ensure every state makes a monetary contribution even though research may not be conducted in that state. In this sense free riding is eliminated.

The option to set compulsory levies to zero should be removed because the justification for no investment in RD&E can be political and a knee-jerk reaction to difficult times. If a levy is set to zero because the particular industry is experiencing low returns it can be argued that this is a time when extension and development are most needed to help it develop and implement strategies that will enable producers to survive such time.

The inability to set levies at zero may reduce the need for RDC's to maintain large reserves thereby allowing more income to be devoted to RD&E investments.

Changing a levy can be very expensive including significant advertising and mail out campaigns articulating the various arguments. However, the trade-off is that that industry members (ie levy payers) need to be involved in the decision making process.

In separating RD&E into classes with community benefit versus industry-specific benefit it must be remembered that the latter projects can have a significant spill over to benefit the wider community. What may appear to be industry-specific benefits can also result in resource and/or environmental protection or better food security or safety, which is of benefit to the entire community.

There is not a case for differentiating matching contributions based on industry maturity or growth. There are always opportunities for improving the production of "mature industries" such as red meat and grain. These are still major contributors to overall agricultural production and should not be ignored. RD&E has allowed these industries to keep pace with costs of production.

How do we know when an industry is mature? New developments can open up unrecognized potential in industries assumed to be mature. The red meat industry in Tasmania is commonly considered mature as it traditionally annually produces about 400kg liveweight gain/ha. The results of recent development projects has shown the benchmark to be 2000kg/ha by adopting and adapting known technologies. Under this scenario a mature industry has effectively been transformed to a sunrise one.

There should be scope for 'donor contributions' for specific projects to secure matching funding, but on a project by project basis. If the investment only benefits a single company or individual, or removes competition from the market then this needs to be considered.

Ideally processors should also pay a levy for RD&E if it benefits their sector. However, there is a high likelihood that they would simply pass the cost back down to the primary producer with no way of preventing this.

It could be considered that as a small state, Tasmania receives more benefit from RD&E than would be the case from the size of its levy contributions alone. But this argument could also be applied to other states or regions within states.

CONCLUSION

This submission has provided information and evidence in support of the current Rural RDC model. As a small state with a large diversity of industries and a widely dispersed population, a profitable and innovative primary industries sector is critical to Tasmania economically, socially and environmentally.

Innovation is the key to increasing rural productivity as the demand for food and fibre grows. Therefore, a strategic, well-run, and suitably resourced RD&E framework that has identified priorities at production and broader community levels is essential.

Whilst the current model is inherently sound, there are areas for improvement in RDC governance and administration, the funding model, program evaluation, coordination and collaboration between RDCs and extension of program outputs. The development of the National RD&E Framework offers the opportunity to be strategically focused at industry and regional levels along with the ability to more effectively deploy available resources with sufficient critical mass. This model is strongly supported by Tasmania, and when implemented, offers smaller states the opportunity to be actively involved in program development and delivery whilst investing in relevant industries or research themes.

This submission has endeavored to quantify the monetary investment by Government and RDCs in RD&E in Tasmania. Given the broad spectrum of support by Government to primary industries, through the provision of facilities, various programs in rural communities and the like, exact contributions to RD&E can be difficult to categorise.

Even when investment in capital infrastructure and activities such as biosecurity and land title management systems that indirectly support primary industries are excluded, the annual investment in RD&E in Tasmania is significant, in terms of State Government, external funding and industry contributions. Continued co-investment in this area is essential to maintain and grow the contribution of Tasmania's primary industries.